

SERVICE MANUAL

Series PCA Ceiling Suspended R407C/R410A

Indoor unit
[Model names]

PCA-RP71HA

PCA-RP125HA

[Service Ref.]

PCA-RP71HA
PCA-RP125HA

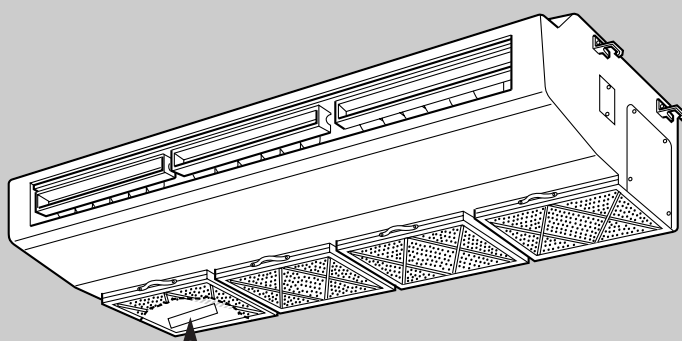
Revision:

- RoHS PARTS LIST is added.
- Some descriptions have been modified.

- Please void OC329.

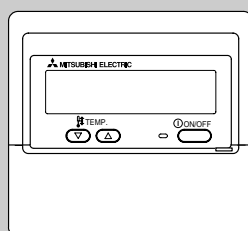
Note:

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



INDOOR UNIT

Model name indication



REMOTE CONTROLLER

CONTENTS

1. REFERENCE MANUAL	2
2. SAFETY PRECAUTION	3
3. PART NAMES AND FUNCTIONS.....	7
4. SPECIFICATIONS	9
5. NOISE CRITERION CURVES	10
6. OUTLINES AND DIMENSIONS	11
7. WIRING DIAGRAM.....	13
8. REFRIGERANT SYSTEM DIAGRAM	14
9. TROUBLESHOOTING	15
10. DISASSEMBLY PROCEDURE	26
11. PARTS LIST	30
12. RoHS PARTS LIST	33

1-1. OUTDOOR UNIT'S SERVICE MANUAL

Service Ref.	Service Manual No.
PUHZ-RP35/50/60/71/100/125/140VHA ₍₁₎ PUHZ-RP100/125/140YHA ₍₁₎	OC334
PUHZ-RP71/100/125/140VHA ₍₁₎ -A	OC337
PUHZ-RP200/250YHA ₍₁₎	OC338
PUHZ-RP200/250YHA ₍₁₎ -A	OC339
PU(H)-P.VGAA.UK PU(H)-P.YGAA.UK	OC336

1-2. TECHNICAL DATA BOOK

Series (Outdoor unit)	Manual No.
PUHZ-RP.VHA(-A) PUHZ-RP.YHA(-A)	OCS01
PU(H)-P.VGAA.UK PU(H)-P.YGAA.UK	OCS02
PUHZ-RP.VHA2 PUHZ-RP.YHA2	OCS05
PUHZ-P.VHA	OCS06
PU(H)-P.VHA PU(H)-P.YHA	OCS07

CAUTIONS RELATED TO NEW REFRIGERANT

Cautions for units utilising refrigerant R407C

Do not use the existing refrigerant piping.

The old refrigerant and lubricant in the existing piping contains a large amount of chlorine which may cause the lubricant deterioration of the new unit.

Use "low residual oil piping"

If there is a large amount of residual oil (hydraulic oil, etc.) inside the piping and joints, deterioration of the lubricant will result.

**Store the piping to be used during installation indoors with keep both ends sealed until just before brazing.
(Store elbows and other joints in a plastic bag.)**

If dust, dirt, or water enters the refrigerant cycle, deterioration of the oil and compressor trouble may result.

Use ESTER , ETHER or HAB as the lubricant to coat flares and flange connection parts.

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

Use liquid refrigerant to charge the system.

If gas refrigerant is used to seal the system, the composition of the refrigerant in the cylinder will change and performance may drop.

Do not use a refrigerant other than R407C.

If another refrigerant (R22, etc.) is used, the chlorine in the refrigerant may cause the lubricant deterioration.

Use a vacuum pump with a reverse flow check valve.

The vacuum pump oil may flow back into the refrigerant cycle and cause the lubricant deterioration.

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

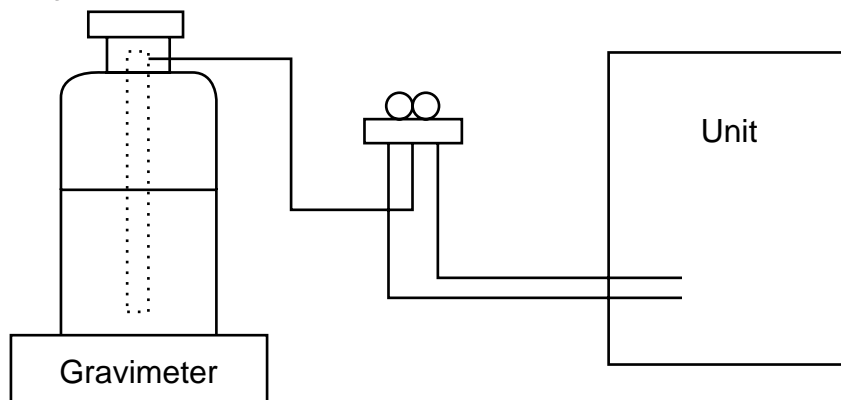
- After recovering the all refrigerant in the unit, proceed to working.
- Do not release refrigerant in the air.
- After completing the repair service, recharge the cycle with the specified amount of liquid refrigerant.

[2] Refrigerant recharging

(1) Refrigerant recharging process

① Direct charging from the cylinder.

- R407C cylinder are available on the market has a syphon pipe.
- Leave the syphon pipe cylinder standing and recharge it.
(By liquid refrigerant)



(2) Recharge in refrigerant leakage case

- After recovering the all refrigerant in the unit, proceed to working.
- Do not release the refrigerant in the air.
- After completing the repair service, recharge the cycle with the specified amount of liquid refrigerant.

[3] Service tools

Use the below service tools as exclusive tools for R407C refrigerant.

No.	Tool name	Specifications
①	Gauge manifold	·Only for R407C.
		·Use the existing fitting SPECIFICATIONS. (UNF7/16)
		·Use high-tension side pressure of 3.43MPa-G or over.
②	Charge hose	·Only for R407C.
		·Use pressure performance of 5.10MPa-G or over.
③	Electronic scale	————
④	Gas leak detector	·Use the detector for R134a or R407C.
⑤	Adapter for reverse flow check.	·Attach on vacuum pump.
⑥	Refrigerant charge base.	————
⑦	Refrigerant cylinder.	·For R407C ·Top of cylinder (Brown)
		·Cylinder with syphon
⑧	Refrigerant recovery equipment.	————

CAUTIONS RELATED TO NEW REFRIGERANT

Cautions for units utilising refrigerant R410A

Use new refrigerant pipes.

In case of using the existing pipes for R22, be careful with the followings.

- For RP125 be sure to perform replacement operation before test run.
- Change flare nut to the one provided with this product. Use a newly flared pipe.
- Avoid using thin 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 during installation indoors and keep both ends of the piping sealed until just before brazing. (Leave elbow joints, etc. in their packaging.)

If dirt, dust or moisture enter 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 enter, 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

Keep the tools with care.

If dirt, dust or moisture enter 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.

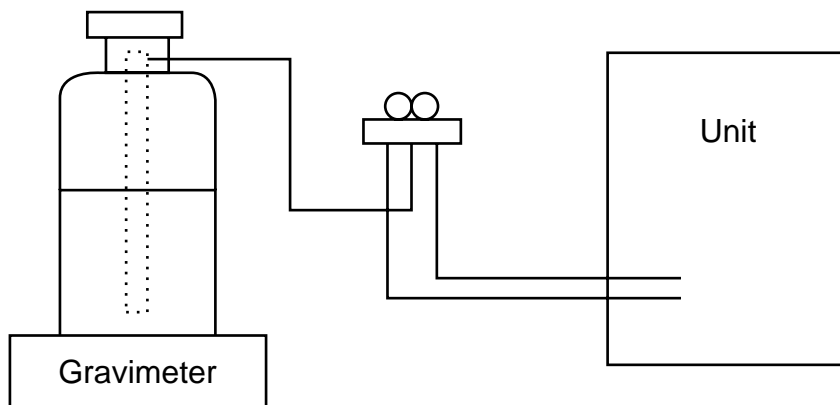
[1] Cautions for service

- (1) Perform service after collecting 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

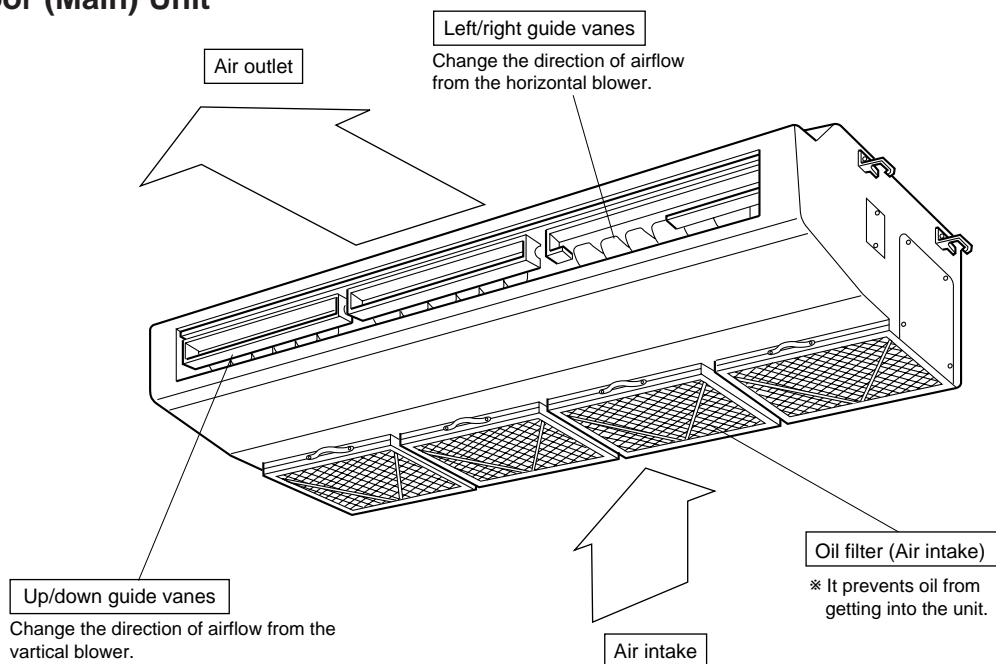
Use the below service tools as exclusive tools for R410A refrigerant.

No.		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	——

3

PART NAMES AND FUNCTIONS

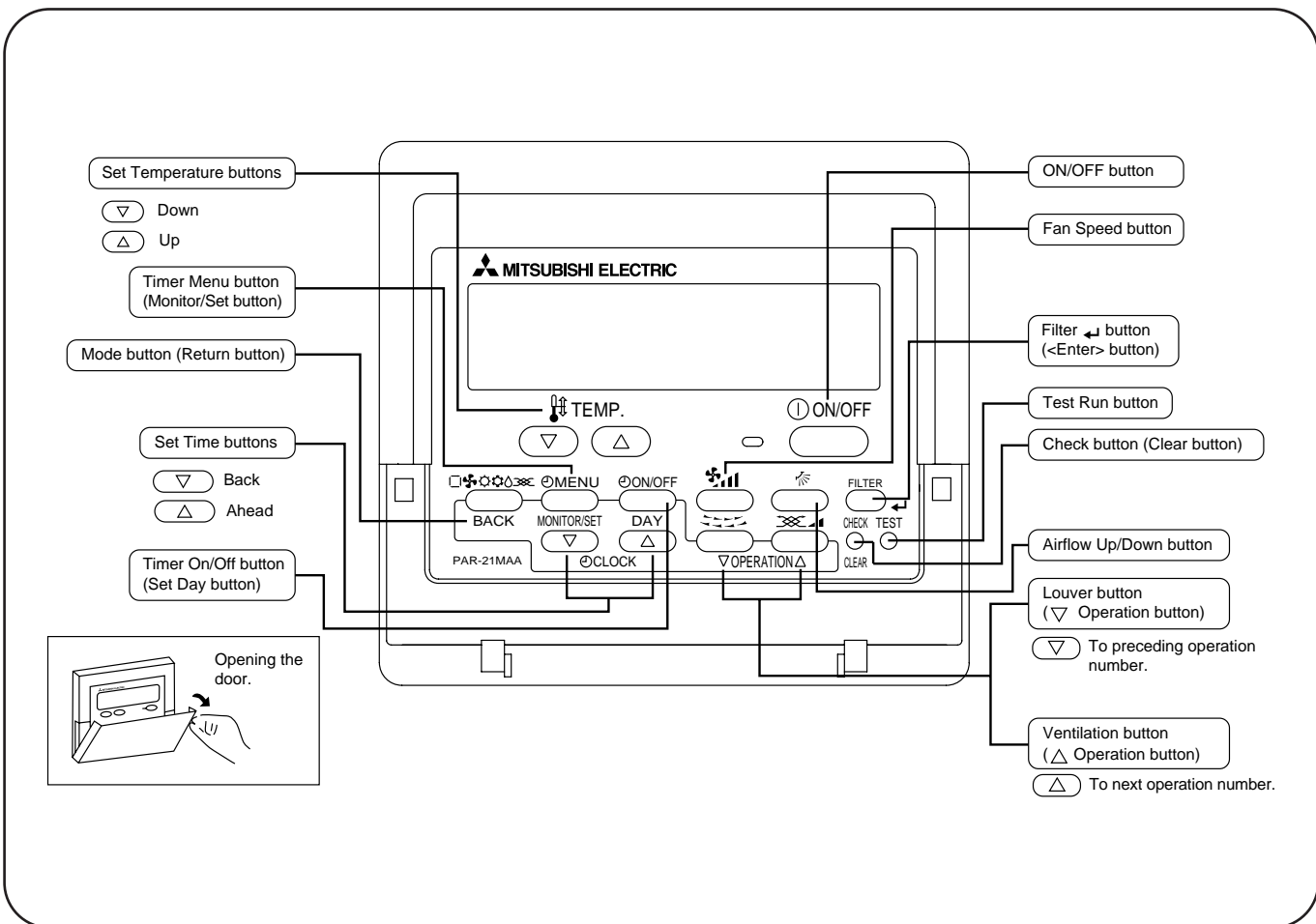
● Indoor (Main) Unit



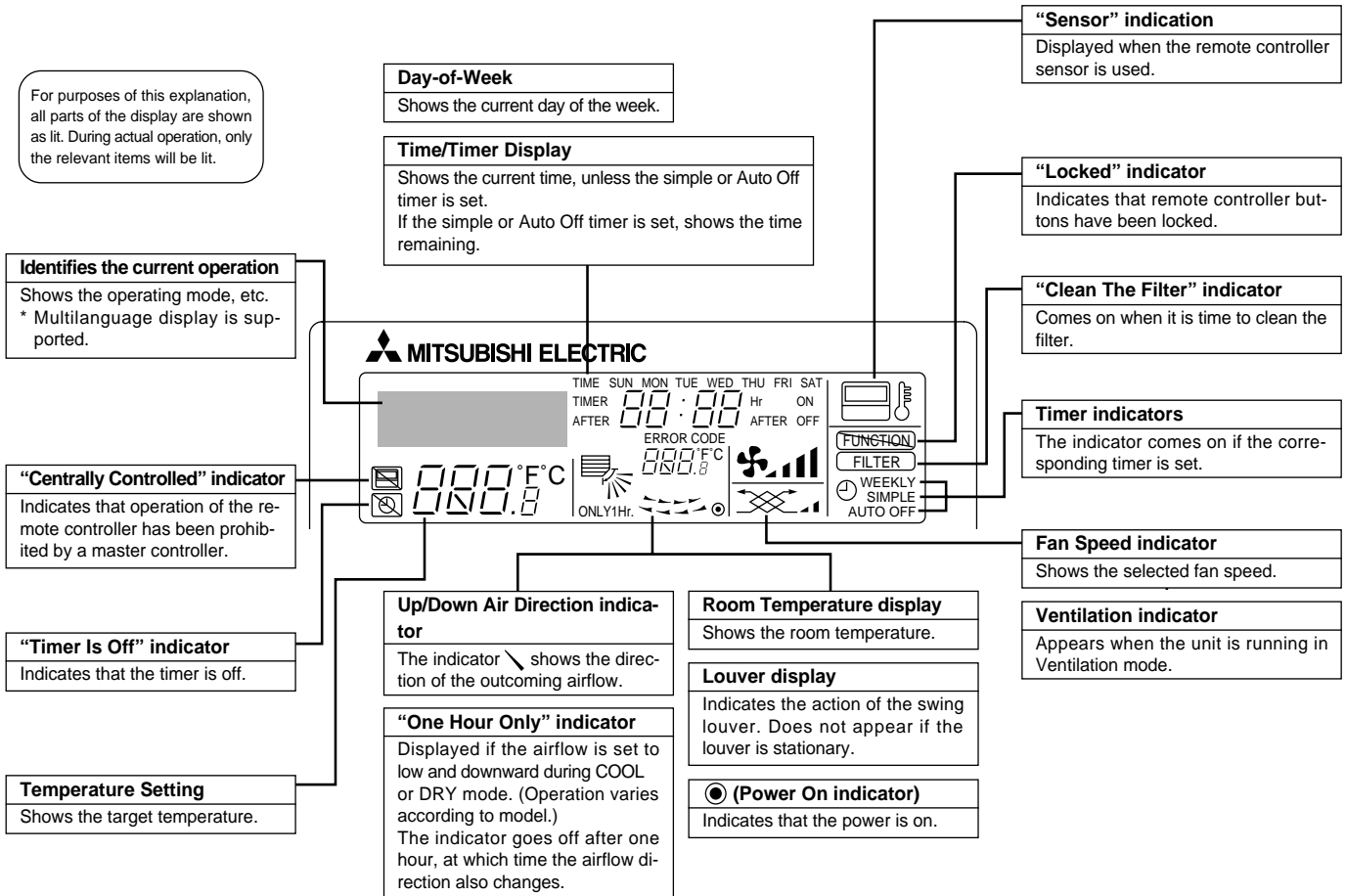
● Remote controller

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

● Operation buttons



● Display



Caution

- Only the Power on indicator lights when the unit is stopped and power supplied to the unit.
- If you press a button for a feature that is not installed at the indoor unit, the remote controller will display the “Not Available” message.
If you are using the remote controller to drive multiple indoor units, this message will appear only if the feature is not present at every unit connected.
- When power is turned ON for the first time, it is normal that “PLEASE WAIT” is displayed on the room temperature indication (For max. 2minutes). Please wait until this “PLEASE WAIT” indication disappears then start the operation.

4

SPECIFICATIONS

Service Ref.			PCA-RP71HA		
INDOOR UNIT	Mode		Cooling	Heating	
	Power supply(phase, cycle, voltage)		Single phase, 50Hz, 230V		
	Input	kW	0.09	0.09	
	Running current	A	0.43	0.43	
	Starting current	A	0.86	0.86	
	External finish		Stainless steel		
	Heat exchanger		Plate fin coil		
	Fan	Fan(drive) x No.		Sirocco fan (direct) x 2	
		Fan motor output	kW	0.04	
		Airflow(Low-High)	m³/min(CFM)	17-19(600-670)	
		External static pressure	Pa(mmAq)	0(direct blow)	
	Operation control & Thermostat		Remote controller & built-in		
	Noise level(Low-High)		dB		
	Unit drain pipe I.D.		mm(in.)		
	Dimensions	W	mm(in.)	1,136(44-3/4)	
		D	mm(in.)	650(25-5/8)	
		H	mm(in.)	280(11)	
	Weight		kg(lbs)		
		41(90)			

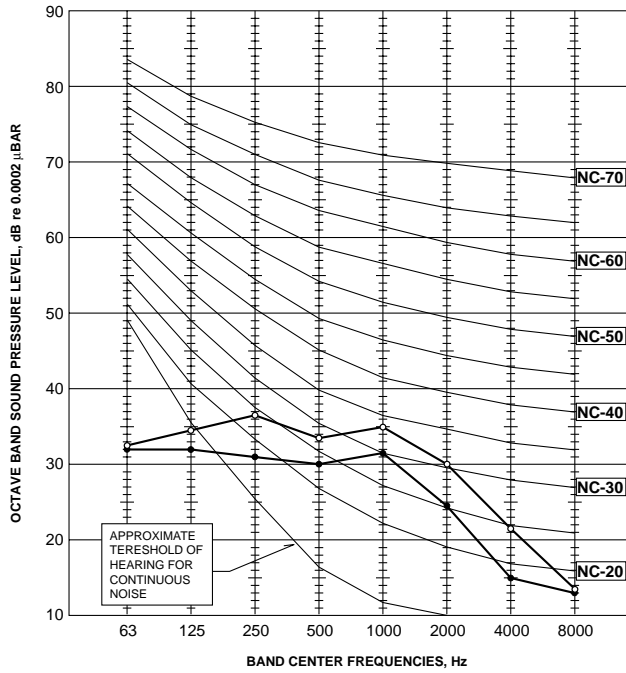
Service Ref.			PCA-RP125HA		
INDOOR UNIT	Mode		Cooling	Heating	
	Power supply(phase, cycle, voltage)		Single phase, 50Hz, 230V		
	Input	kW	0.26	0.26	
	Running current	A	1.19	1.19	
	Starting current	A	2.38	2.38	
	External finish		Stainless steel		
	Heat exchanger		Plate fin coil		
	Fan	Fan(drive) x No.		Sirocco fan (direct) x 4	
		Fan motor output	kW	0.08 + 0.08	
		Airflow(Low-High)	m³/min(CFM)	30-38(1,060-1,350)	
		External static pressure	Pa(mmAq)	0(direct blow)	
	Operation control & Thermostat		Remote controller & built-in		
	Noise level(Low-High)		dB		
	Unit drain pipe I.D.		mm(in.)		
	Dimensions	W	mm(in.)	1,520(59-7/8)	
		D	mm(in.)	650(25-5/8)	
		H	mm(in.)	280(11)	
	Weight		kg(lbs)		
		56(124)			

5

NOISE CRITERION CURVES

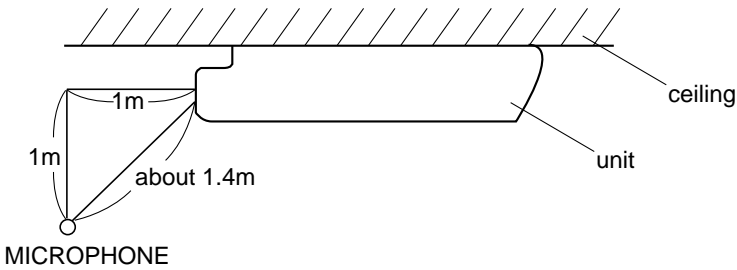
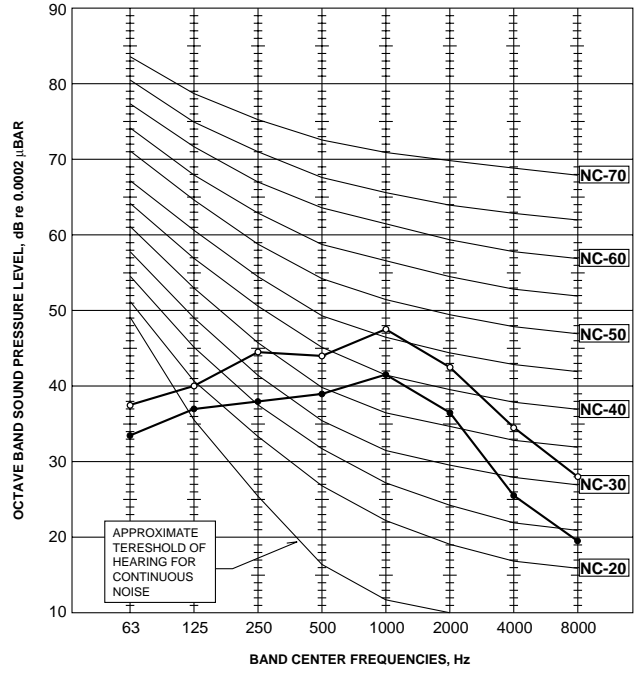
PCA-RP71HA

NOTCH	SPL(dB)	LINE
High	38	○—○
Low	34	●—●



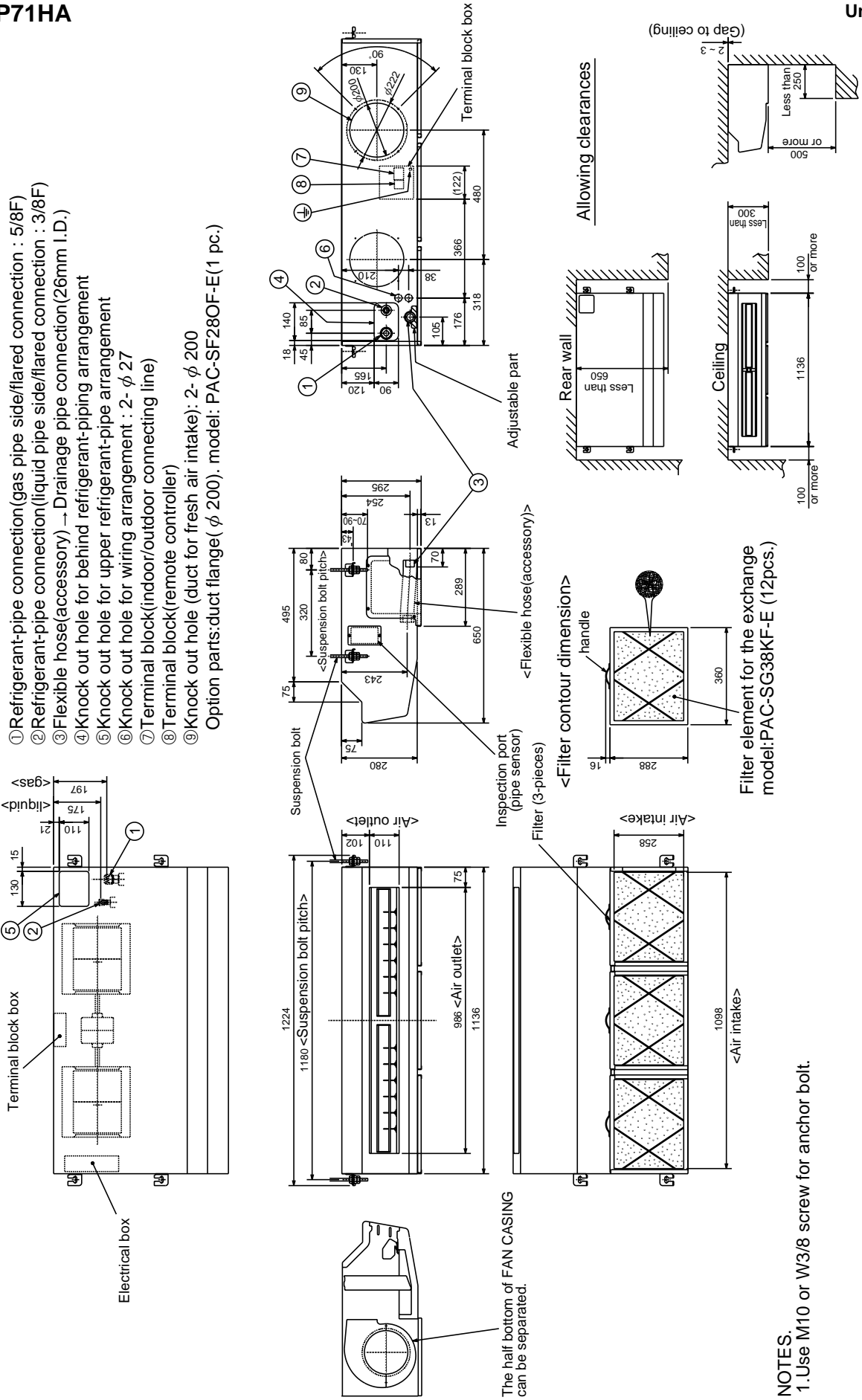
PCA-RP125HA

NOTCH	SPL(dB)	LINE
High	50	○—○
Low	44	●—●



PCA-RP71HA

Unit : mm



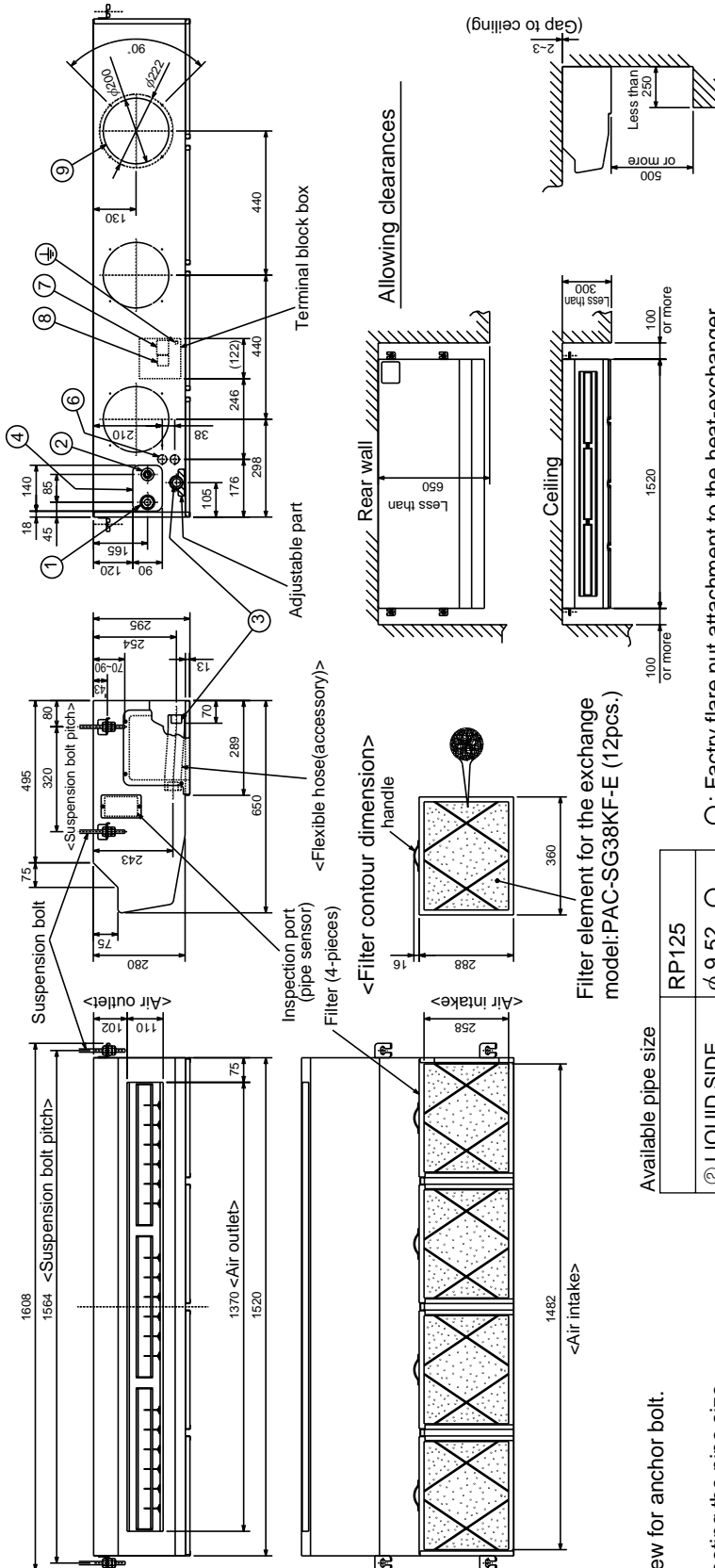
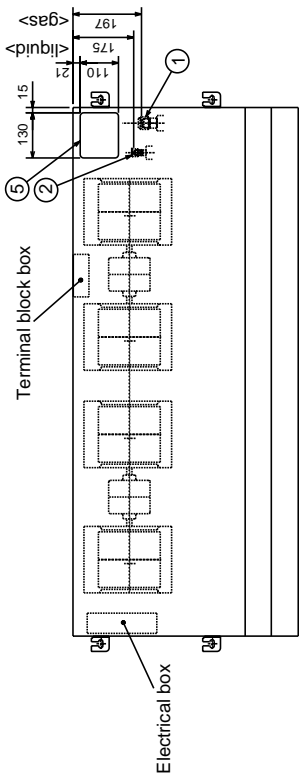
NOTES.
 1. Use M10 or W3/8 screw for anchor bolt.

PCA-RP125HA

Unit : mm

- ① Refrigerant-pipe connection (gas pipe side/flared connection : 5/8F, 3/4F)
- ② Refrigerant-pipe connection (liquid pipe side/flared connection : 3/8F)
- ③ Flexible hose (accessory) → Drainage pipe connection (26mm I.D.)
- ④ Knock out hole for behind refrigerant-piping arrangement
- ⑤ Knock out hole for upper refrigerant-pipe arrangement
- ⑥ Knock out hole for wiring arrangement : 2-φ 27
- ⑦ Terminal block (indoor/outdoor connecting line)
- ⑧ Terminal block (remote controller)
- ⑨ Knock out hole (duct for fresh air intake) : 2-φ 200

Option parts: duct flange (φ 200). model: PAC-SF280F-E (1 pc.)



Filter element for the exchange
model: PAC-SG38KF-E (12 pcs.)

Available pipe size

RP125
② LIQUID SIDE
φ 9.52 ○
① GAS SIDE
φ 15.88 ○
φ 19.05

○ : Factory flare nut attachment to the heat-exchanger

NOTES.
1. Use M10 or W3/8 screw for anchor bolt.

Use the current nuts meeting the pipe size of the outdoor unit.

The half bottom of FAN CASING can be separated.

PCA-RP71HA PCA-RP125HA

[LEGEND]

SYMBOL	NAME	SYMBOL	NAME
P. B	INDOOR POWER BOARD	MF1, MF2	FAN MOTOR
I. B	INDOOR CONTROLLER BOARD	C1, C2	CAPACITOR(FAN MOTOR)
	FUSE (T6.3AL250V)	H2	DEW PREVENTION HEATER
	ZNR	TB2	TERMINAL BLOCK(INDOOR UNIT POWER (OPTION))
	CN2L		
	CN32	TB4	TERMINAL BLOCK(INDOOR/OUTDOOR CONNECTING LINE)
	CN41		
	CN51	TB5,TB6	TERMINAL BLOCK(REMOTE CONTROLLER TRANSMISSION LINE)
	LED1		
	LED2	TH1	ROOM TEMP.THERMISTOR (0°C/15kΩ, 25°C/5.4kΩ DETECT)
	LED3		
	X1	TH2	PIPE TEMP.THERMISTOR/LIQUID (0°C/15kΩ, 25°C/5.4kΩ DETECT)
	X4		
	X5		
	X6	TH5	COND./ EVA.TEMP.THERMISTOR (0°C/15kΩ, 25°C/5.4kΩ DETECT)
	SW1	R. B	WIRED REMOTE CONTROLLER BOARD
	SW2		
	SWE		

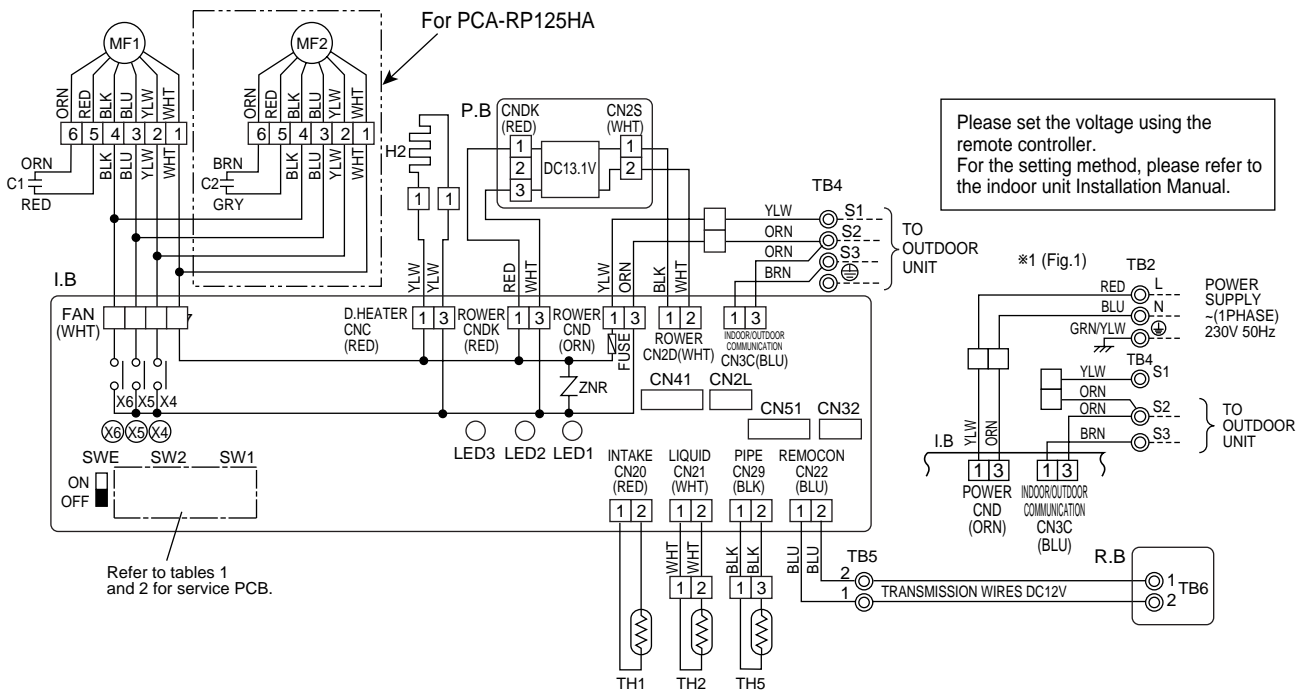


Table 1

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

Table 2

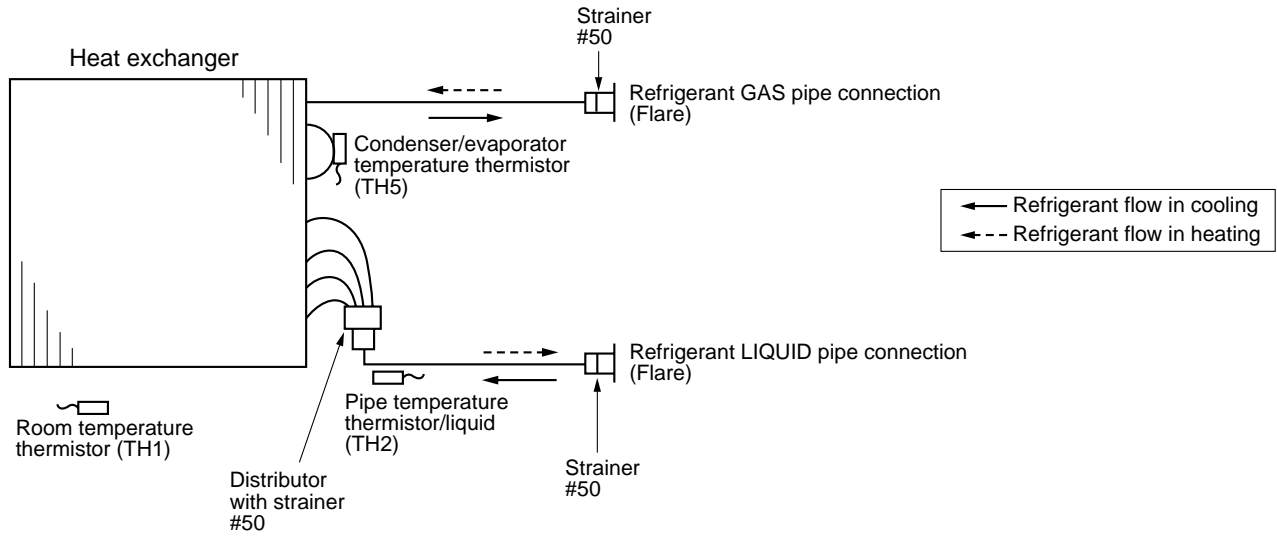
SW2						
MODELS	Service board					
PCA-RP71HA	1	2	3	4	5	ON
PCA-RP125HA	1	2	3	4	5	OFF

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).
- ※1 ; When work to supply power separately to Indoor and Outdoor unit was applied, refer to Fig1.
 ※2 ; For power supply system of this unit, refer to the caution label located near this diagram.

PCA-RP71HA
PCA-RP125HA

Unit : mm



9-1. 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 inferior phenomenon reoccurrence at field are summarized in the table below. Check the contents below before investigating details.

Note : Refer to the manual of outdoor unit for malfunction-diagnosis method by remote controller.

Unit conditions at service	Error code	Actions to be taken for service (summary)
The inferior phenomenon is reoccurring.	Displayed	Judge what is wrong and take a corrective action according to "SELF-DIAGNOSIS ACTION TABLE" (9-2).
	Not displayed	Identify the cause of the inferior phenomenon and take a corrective action according to "TROUBLESHOOTING BY INFERIOR PHENOMENA" (9-3).
The inferior phenomenon is not reoccurring.	Logged	<ul style="list-style-type: none"> 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 inferior phenomenon 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	<ul style="list-style-type: none"> ①Recheck the abnormal symptom. ②Identify the cause of the inferior phenomenon and take a corrective action according to "TROUBLESHOOTING BY INFERIOR PHENOMENA" (9-3). 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.



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

9-2. SELF-DIAGNOSIS ACTION TABLE

Error Code	Meaning of error code and detection method	Cause	Countermeasure
P1	<p>Abnormality of room temperature thermistor (TH1)</p> <p>① The unit is in three-minute resume prevention mode if short/open of thermistor is detected. Abnormal if the unit does not reset normally after three minutes. (The unit returns to normal operation, if it has normally reset.)</p> <p>② Constantly detected during cooling, drying, and heating operation. Short: 90°C or more Open: -40°C or less</p>	<p>① Defective thermistor characteristics.</p> <p>② Contact failure of connector (CN20) on the indoor controller board. (Insert failure)</p> <p>③ Breaking of wire or contact failure of thermistor wiring.</p> <p>④ Defective indoor controller board.</p>	<p>①~③ Check resistance value of thermistor. 0°C15.0kΩ 10°C9.6kΩ 20°C6.3kΩ 30°C4.3kΩ 40°C3.0kΩ</p> <p>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.</p> <p>② Check contact failure of connector (CN20) on the indoor controller board. Refer to 9-6. Turn the power on again and check restart after inserting connector again.</p> <p>④ Check room temperature display on remote controller. Replace indoor controller board if there is abnormal difference with actual room temperature.</p> <p>Turn the power off, and on again to operate after check.</p>
P2	<p>Abnormality of pipe temperature thermistor/Liquid (TH2)</p> <p>① The unit is in three-minute resume prevention mode if short/open of thermistor is detected. Abnormal if the unit does not reset normally after three minutes. (The unit returns to normal operation, if it has normally reset.)</p> <p>② Constantly detected during cooling, drying, and heating (except defrosting) operation. Short: 90°C or more Open: -40°C or less</p>	<p>① Defective thermistor characteristics.</p> <p>② Contact failure of connector (CN21) on the indoor controller board. (Insert failure)</p> <p>③ Breaking of wire or contact failure of thermistor wiring.</p> <p>④ Defective refrigerant circuit is causing thermistor temperature of 90°C or more or -40°C or less.</p> <p>⑤ Defective indoor controller board.</p>	<p>①~③ Check resistance value of thermistor. For characteristics, refer to (P1) above.</p> <p>② Check contact failure of connector (CN21) on the indoor controller board. Refer to 9-6. Turn the power on and check restart after inserting connector again.</p> <p>④ Check pipe <liquid> temperature with remote controller in test run mode. If pipe <liquid> temperature is exclusively low (in cooling mode) or high (in heating mode), refrigerant circuit may have defective.</p> <p>⑤ Check pipe <liquid> temperature with remote controller in test run mode. If there is exclusive difference with actual pipe <liquid> temperature, replace indoor controller board.</p> <p>Turn the power off, and on again to operate after check.</p>
P4	<p>Abnormality of drain sensor (DS)</p> <p>① Suspensive abnormality, if short/open of thermistor is detected for 30 seconds continuously. Turn off compressor and indoor fan.</p> <p>② Short/open is detected for 30 seconds continuously during suspensive abnormality. (The unit returns to normal operation, if it has normally reset.)</p> <p>③ Detect the following condition.</p> <ul style="list-style-type: none"> • 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. 	<p>① Defective thermistor characteristics</p> <p>② Contact failure of connector (CN31) on the indoor controller board. (Insert failure).</p> <p>③ Breaking of wire or contact failure of drain sensor wiring.</p> <p>④ Defective indoor controller board.</p>	<p>①~③ Check resistance value of thermistor. 0°C6.0kΩ 10°C3.9kΩ 20°C2.6kΩ 30°C1.8kΩ 40°C1.3kΩ</p> <p>② Check contact failure of connector (CN31) on the indoor controller board. Refer to 9-6. Turn the power on again and check restart after inserting connector again.</p> <p>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.</p> <p>Turn the power off, and on again to operate after check.</p>
P5	<p>Malfunction of drain pump (DP)</p> <p>① Suspensive abnormality, if thermistor of drain sensor is let heat itself and temperature rises slightly. Turn off compressor and indoor fan.</p> <p>② Drain pump is abnormal if the condition above is detected during suspensive abnormality.</p> <p>③ Constantly detected during drain pump operation.</p>	<p>① Malfunction of drain pump</p> <p>② Defective drain Clogged drain pump Clogged drain pipe</p> <p>③ Attached drop of water at the drain sensor</p> <ul style="list-style-type: none"> • Drops of drain trickles from lead wire. • Clogged filter is causing wave of drain. <p>④ Defective indoor controller board.</p>	<p>① Check if drain-up machine works.</p> <p>② Check drain function.</p> <p>③ Check the setting of lead wire of drain sensor and check clogs of the filter.</p> <p>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 9-6.</p> <p>Turn the power off, and on again to operate after check.</p>



Error Code	Meaning of error code and detection method	Cause	Countermeasure
P6	<p>Freezing/overheating protection is working</p> <p>① Freezing protection (Cooling mode) The unit is in six-minute resume prevention mode if pipe <liquid or condenser/evaporator> temperature stays under -15°C for three minutes, three minutes after the compressor started. Abnormal if it stays under -15°C for three minutes again within 16 minutes after six-minute resume prevention mode. <Frost prevention mode> If pipe <liquid or condenser-evaporator> temperature is 2°C or below when 16 minutes has passed after compressor starts operating, unit will start operating in frost prevention mode which stops compressor operation. After that, when pipe <liquid or condenser/evaporator> temperature stays 10°C or more for 3 minutes, frost prevention mode will be released and compressor will restart its operation.</p> <p>② Overheating protection (Heating mode) The units is in six-minute resume prevention mode if pipe <condenser / evaporator> temperature is detected as over 70°C after the compressor started. Abnormal if the temperature of over 70°C is detected again within 10 minutes after six-minute resume prevention mode.</p>	<p>(Cooling or drying mode)</p> <p>① Clogged filter (reduced airflow) ② Short cycle of air path ③ Low-load (low temperature) operation beyond the tolerance range ④ Defective indoor fan motor • Fan motor is defective. • Indoor controller board is defective.</p> <p>⑤ Defective outdoor fan control ⑥ Overcharge of refrigerant ⑦ Defective refrigerant circuit (clogs)</p> <p>(Heating mode)</p> <p>① Clogged filter (reduced airflow) ② Short cycle of air path ③ Over-load (high temperature) operation beyond the tolerance range ④ Defective indoor fan motor • Fan motor is defective. • Indoor controller board is defective.</p> <p>⑤ Defective outdoor fan control ⑥ Overcharge of refrigerant ⑦ Defective refrigerant circuit (clogs) ⑧ Bypass circuit of outdoor unit is defective.</p>	<p>(Cooling or drying mode)</p> <p>① Check clogs of the filter. ② Remove shields.</p> <p>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 220~240V is detected while fan motor is connected. Refer to 9-6. ⑤ Check outdoor fan motor. ⑥⑦ Check operating condition of refrigerant circuit.</p> <p>(Heating mode)</p> <p>① Check clogs of the filter. ② Remove shields.</p> <p>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 220~240V is detected while fan motor is connected. Refer to 9-6. ⑤ Check outdoor fan motor. ⑥~⑧ Check operating condition of refrigerant circuit.</p>
P8	<p>Abnormality of pipe temperature</p> <p><Cooling mode> Detected as abnormal when the pipe temperature is not in the cooling range 3 minutes later of compressor start and 6 minutes later of the liquid or condenser/evaporator pipe is out of cooling range. Note 1) It takes at least 9 min. to detect. Note 2) Abnormality P8 is not detected in drying mode. Cooling range : -3 deg \geq (TH-TH1) TH: Lower temperature between: liquid pipe temperature (TH2) and condenser/evaporator temperature (TH5) TH1: Intake temperature</p> <p><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.</p> <p>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 \leq (TH5-TH1)</p>	<p>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</p> <p>② Converse connection of extension pipe (on plural units connection)</p> <p>③ Converse wiring of indoor/outdoor unit connecting wire (on plural units connection)</p> <p>④ Defective detection of indoor room temperature and pipe <condenser / evaporator> temperature thermistor</p> <p>⑤ Stop valve is not opened completely.</p>	<p>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.</p> <p>(Conduct temperature check with outdoor controller circuit board after connecting 'A-Control Service Tool(PAC-SK52ST)')</p> <p>②③ Check converse connection of extension pipe or converse wiring of indoor/outdoor unit connecting wire.</p>

Error Code	Meaning of error code and detection method	Cause	Countermeasure
P9	<p>Abnormality of pipe temperature thermistor / Condenser-Evaporator (TH5)</p> <p>① The unit is in three-minute resume protection mode if short/open of thermistor is detected. Abnormal if the unit does not get back to normal within three minutes. (The unit returns to normal operation, if it has normally reset.)</p> <p>② Constantly detected during cooling, drying, and heating operation (except defrosting) Short: 90°C or more Open: -40°C or less</p>	<p>① Defective thermistor characteristics</p> <p>② Contact failure of connector (CN29) on the indoor controller board. (Insert failure)</p> <p>③ Breaking of wire or contact failure of thermistor wiring.</p> <p>④ Temperature of thermistor is 90°C or more or -40°C or less caused by defective refrigerant circuit.</p> <p>⑤ Defective indoor controller board.</p>	<p>①~③ Check resistance value of thermistor. For characteristics, refer to (P1) above.</p> <p>② Check contact failure of connector (CN29) on the indoor controller board. Refer to 9-6. Turn the power on and check restart after inserting connector again.</p> <p>④ Operate in test run mode and check pipe <condenser / evaporator> temperature with outdoor controller circuit board. If pipe <condenser / evaporator> temperature is exclusively low (in cooling mode) or high (in heating mode), refrigerant circuit may have defective.</p> <p>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.</p> <p>(In case of checking pipe temperature with outdoor controller circuit board, be sure to connect A-control service tool (PAC-SK52ST).)</p>
E0 or E4	<p>Remote controller transmission error(E0)/signal receiving error(E4)</p> <p>① Abnormal if main or sub remote controller can not receive normally any transmission from indoor unit of refrigerant address "0" for three minutes. (Error code : E0)</p> <p>② Abnormal if sub remote controller could not receive for any signal for two minutes. (Error code: E0)</p> <p>① Abnormal if indoor controller board can not receive normally any data from remote controller board or from other indoor controller board for three minutes. (Error code: E4)</p> <p>② Indoor controller board cannot receive any signal from remote controller for two minutes. (Error code: E4)</p>	<p>① Contact failure at transmission wire of remote controller</p> <p>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.</p> <p>③ Mis-wiring of remote controller.</p> <p>④ Defective transmitting receiving circuit of remote controller</p> <p>⑤ Defective transmitting receiving circuit of indoor controller board of refrigerant address "0".</p> <p>⑥ Noise has entered into the transmission wire of remote controller.</p>	<p>① Check disconnection or looseness of indoor unit or transmission wire of remote controller.</p> <p>② Set one of the remote controllers "main". If there is no problem with the action above.</p> <p>③ Check wiring of remote controller.</p> <ul style="list-style-type: none"> • Total wiring length: max.500m (Do not use cable 3 or more) • The number of connecting indoor units: max.16units • The number of connecting remote controller: max.2units <p>When it is not the above-mentioned problem of ①~③</p> <p>④ Diagnose remote controllers.</p> <p>a) When "RC OK" is displayed, Remote controllers have no problem. Put the power off, and on again to check. If abnormality generates again, replace indoor controller board.</p> <p>b) When "RC NG" is displayed, Replace remote controller.</p> <p>c) When "RC E3" is displayed,</p> <p>d) When "ERC 00-06" is displayed, [c),d)→Noise may be causing abnormality.]</p> <p>* If the unit is not normal after replacing indoor controller board in group control, indoor controller board of address "0" may be abnormal.</p>
E3 or E5	<p>Remote controller transmission error(E3)/signal receiving error(E5)</p> <p>① Abnormal if remote controller could not find blank of transmission path for six seconds and could not transmit. (Error code: E3)</p> <p>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)</p> <p>① Abnormal if indoor controller board could not find blank of transmission path. (Error code: E5)</p> <p>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)</p>	<p>① Two remote controller are set as "main." (In case of 2 remote controllers)</p> <p>② Remote controller is connected with two indoor units or more.</p> <p>③ Repetition of refrigerant address.</p> <p>④ Defective transmitting receiving circuit of remote controller.</p> <p>⑤ Defective transmitting receiving circuit of indoor controller board.</p> <p>⑥ Noise has entered into transmission wire of remote controller.</p>	<p>① Set a remote controller to main, and the other to sub.</p> <p>② Remote controller is connected with only one indoor unit.</p> <p>③ The address changes to a separate setting.</p> <p>④~⑥ Diagnose remote controller.</p> <p>a) When "RC OK" is displayed, remote controllers have no problem. Put the power off, and on again to check. When becoming abnormal again, replace indoor controller board.</p> <p>b) When "RC NG" is displayed, replace remote controller.</p> <p>c) When "RC E3" or "ERC 00-66" is displayed, noise may be causing abnormality.</p>



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

9-3. TROUBLESHOOTING BY INFERIOR PHENOMENA

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

Phenomena	Cause	Countermeasure
<p>(1)LED2 on indoor controller board is off.</p>	<ul style="list-style-type: none"> • 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 220~240V is not supplied to indoor unit. ④ Defective indoor power board. ⑤ Defective indoor controller board. <p>(For the separate indoor/outdoor unit power supply system)</p> <ul style="list-style-type: none"> ① Power supply of 220~240V 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. 	<ul style="list-style-type: none"> ① Check the voltage of outdoor power supply terminal block (L, N) or (L₃, N). <ul style="list-style-type: none"> • When AC 220~240V is not detected. Check the power wiring to outdoor unit and the breaker. • When AC 220~240V is detected. —Check ② (below). ② Check the voltage between outdoor terminal block S1 and S2. <ul style="list-style-type: none"> • When AC 220~240V is not detected. Check the fuse on outdoor controller circuit board. Check the wiring connection. • When AC 220~240V is detected. —Check ③ (below). ③ Check the voltage between indoor terminal block S1 and S2. <ul style="list-style-type: none"> • When AC 220~240V is not detected. Check indoor/outdoor unit connecting wire for mis-wiring. • When AC 220~240V is detected. —Check ④ (below). ④ Check voltage output from CN2S on indoor power board (DC13.1V). Refer to 9-6-1. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> ① Check the voltage of indoor power supply terminal block (L,N). <ul style="list-style-type: none"> • When AC220~240V is not detected. Check the power supply wiring. • When AC220~240V is detected. -Check ② (below). ② Check that there is no problem in the method of connecting the connectors. <ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • When AC220~240V 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 AC220~240V is detected. -Check ④ (below). ④ Check voltage output from CN2S on indoor power board. <ul style="list-style-type: none"> • 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.
	<ul style="list-style-type: none"> • 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".) 	<ul style="list-style-type: none"> ① Reconfirm 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.

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

Phenomena	Cause	Countermeasure
(2)LED2 on indoor controller board is blinking.	<ul style="list-style-type: none"> • 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.
	<ul style="list-style-type: none"> • When LED1 is lit. ① Mis-wiring of remote controller wires Under twin triple indoor unit system, 2 or more 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 Short-cut of remote controller wires ④ Defective remote controller 	<ul style="list-style-type: none"> ① Check the connection of remote controller wires in case of twin triple 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. <ul style="list-style-type: none"> • 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.

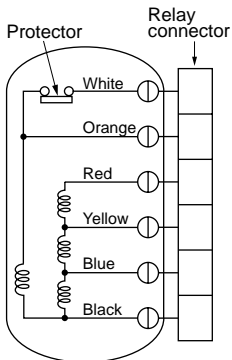
9-4. WHEN WIRED REMOTE CONTROLLER OR INDOOR UNIT MICRO COMPUTER TROUBLES

1. If there is not any other wrong 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;
 - (1) Indoor fan high speed operation
 - (2) Drain-up machine operation
2. When emergency operating for COOL or HEAT, setting of the switch (SWE) on the indoor controller board and outdoor unit emergency operation are necessary.
3. Check items and notices as the emergency operation
 - (1) 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 protected operation is detected during self-diagnosis. (Error code : P5)
 - (2) 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.
 - (3) Do not operate for a long time as cold air is blown when the outdoor unit starts defrosting operation during heat emergency operation.
 - (4) Cool emergency operation must be within 10 hours. Other wire, heat exchanger of indoor unit may get frosted.
 - (5) After completing the emergency operation, return the switch setting, etc. in former state.
 - (6) Since vane does not work at emergency operation, position the vane slowly by hand.

9-5. HOW TO CHECK THE PARTS

PCA-RP71HA

PCA-RP125HA

Parts name	Check points																			
Room temperature thermistor (TH1)	Disconnect the connector then measure the resistance using a tester. (Surrounding temperature 10°C ~30°C) <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>4.3kΩ~9.6kΩ</td> <td>Open or short</td> </tr> </tbody> </table> (Refer to <Thermistor Characteristic graph> for a detail.)	Normal	Abnormal	4.3kΩ~9.6kΩ	Open or short															
Normal		Abnormal																		
4.3kΩ~9.6kΩ		Open or short																		
Pipe temperature thermistor (TH2)																				
Condenser/Evaporator temperature thermistor (TH5)																				
Fan motor(MF) 	Measure the resistance between the terminals using a tester. (Winding temperature 20°C) <table border="1" style="margin: 10px auto;"> <thead> <tr> <th rowspan="2">Connector</th> <th colspan="2">Normal</th> <th rowspan="2">Abnormal</th> </tr> <tr> <th>PCA-RP71HA</th> <th>PCA-RP125HA</th> </tr> </thead> <tbody> <tr> <td>White-Black</td> <td>140.5Ω</td> <td>75.6Ω</td> <td rowspan="4">Open or short</td> </tr> <tr> <td>Black-Blue</td> <td>15.4Ω</td> <td>36.7Ω</td> </tr> <tr> <td>Blue-Yellow</td> <td>28.5Ω</td> <td>23.6Ω</td> </tr> <tr> <td>Yellow-Red</td> <td>80.4Ω</td> <td>47.8Ω</td> </tr> </tbody> </table> <p style="margin-top: 10px;"> Protector OPEN : 135±5°C CLOSE : 95±15°C </p>	Connector	Normal		Abnormal	PCA-RP71HA	PCA-RP125HA	White-Black	140.5Ω	75.6Ω	Open or short	Black-Blue	15.4Ω	36.7Ω	Blue-Yellow	28.5Ω	23.6Ω	Yellow-Red	80.4Ω	47.8Ω
Connector	Normal		Abnormal																	
	PCA-RP71HA	PCA-RP125HA																		
White-Black	140.5Ω	75.6Ω	Open or short																	
Black-Blue	15.4Ω	36.7Ω																		
Blue-Yellow	28.5Ω	23.6Ω																		
Yellow-Red	80.4Ω	47.8Ω																		

<Thermistor Characteristic graph>

Thermistor for lower temperature

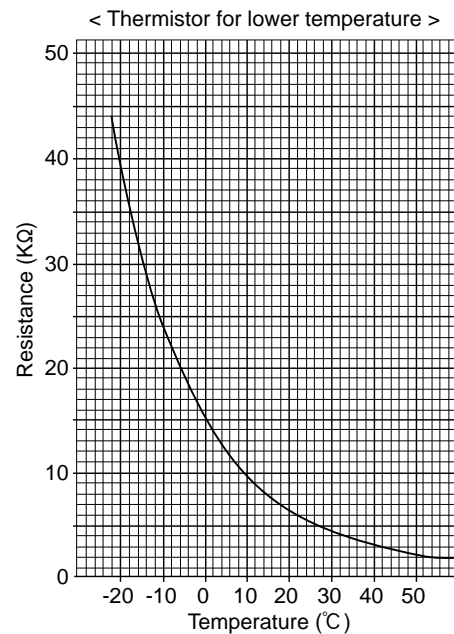
Room temperature thermistor(TH1)
 Pipe temperature thermistor(TH2)
 Condenser/evaporator temperature thermistor(TH5)

Thermistor $R_0=15k\Omega \pm 3\%$

Fixed number of $B=3480k\Omega \pm 2\%$

$$R_t = 15 \exp \left\{ 3480 \left(\frac{1}{273+t} - \frac{1}{273} \right) \right\}$$

0°C	15kΩ
10°C	9.6kΩ
20°C	6.3kΩ
25°C	5.4kΩ
30°C	4.3kΩ
40°C	3.0kΩ

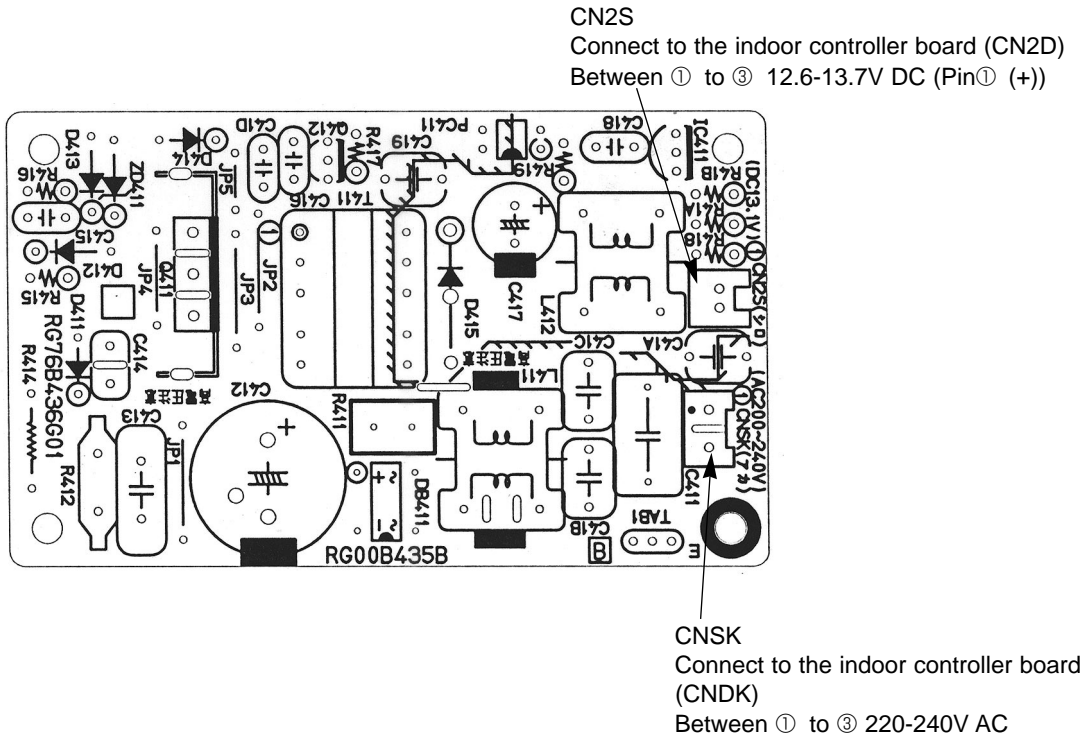


9-6. TEST POINT DIAGRAM

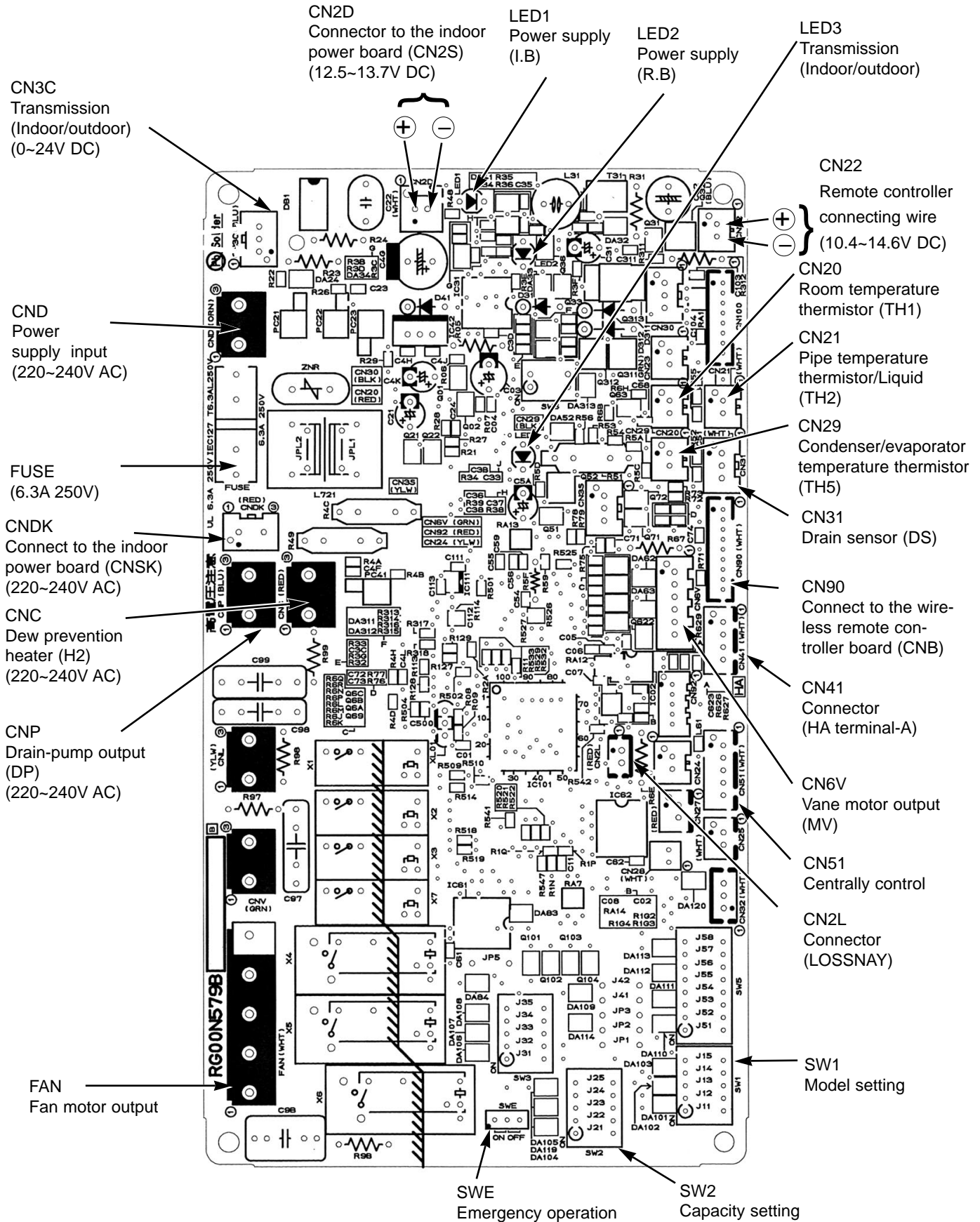
9-6-1. Power board

PCA-RP71HA

PCA-RP125HA



9-6-2. Indoor controller board
PCA-RP71HA
PCA-RP125HA










9-7. FUNCTIONS OF DIP SWITCH AND JUMPER WIRE

Each function is controlled by the dip switch and the jumper wire on control p.c. board.

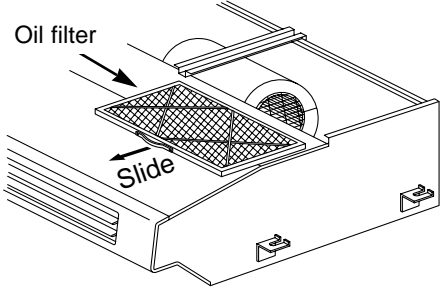
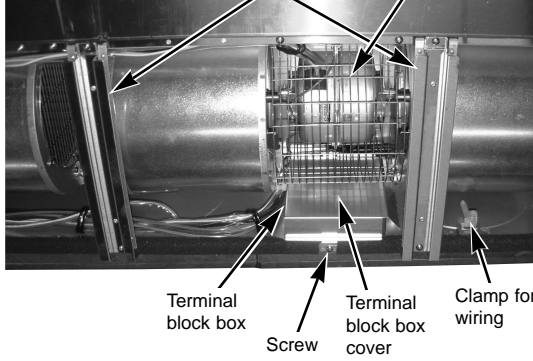
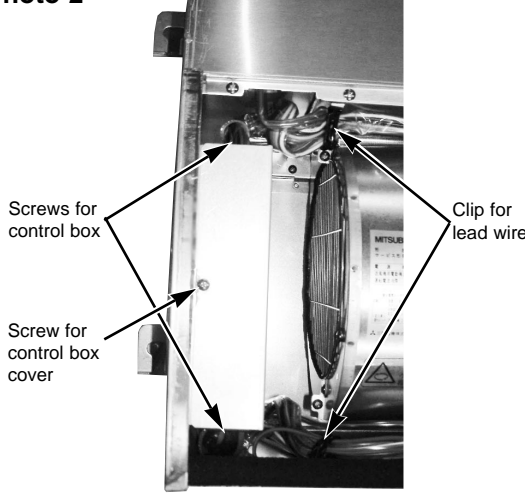
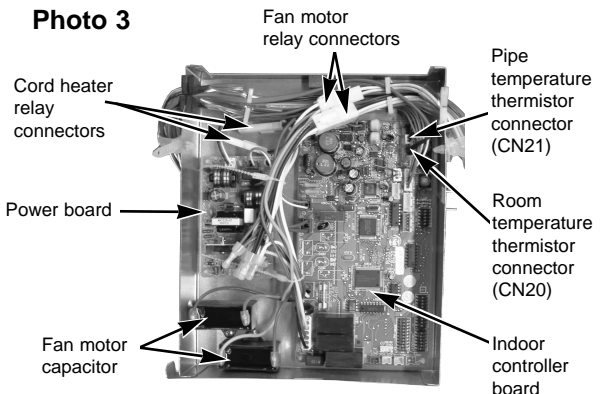
SW1 and SW2 are equipped only for service parts.

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 																		
SW2	Capacity settings	<table border="1"> <thead> <tr> <th>MODELS</th> <th>Service board</th> </tr> </thead> <tbody> <tr> <td>PCA-RP71HA</td> <td>  </td> </tr> <tr> <td>PCA-RP125HA</td> <td>  </td> </tr> </tbody> </table>	MODELS	Service board	PCA-RP71HA		PCA-RP125HA													
MODELS	Service board																			
PCA-RP71HA																				
PCA-RP125HA																				
J41 J42	Pair number setting with wireless remote controller	<table border="1"> <thead> <tr> <th rowspan="2">Wireless remote controller setting</th> <th colspan="2">Control PCB setting</th> </tr> <tr> <th>J41</th> <th>J42</th> </tr> </thead> <tbody> <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> </tbody> </table>	Wireless remote controller setting	Control PCB setting		J41	J42	0	○	○	1	×	○	2	○	×	3 ~ 9	×	×	<p><Settings at time of factory shipment> 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 line is disconnected.)</p>
Wireless remote controller setting	Control PCB setting																			
	J41	J42																		
0	○	○																		
1	×	○																		
2	○	×																		
3 ~ 9	×	×																		
JP1	Unit type setting	<table border="1"> <thead> <tr> <th>Model</th> <th>JP1</th> </tr> </thead> <tbody> <tr> <td>Without TH5</td> <td>○</td> </tr> <tr> <td>With TH5</td> <td>×</td> </tr> </tbody> </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	○																			
With TH5	×																			
JP3	Indoor controller board type setting	<table border="1"> <thead> <tr> <th>Indoor controller board type</th> <th>JP3</th> </tr> </thead> <tbody> <tr> <td>Factory shipment</td> <td>×</td> </tr> <tr> <td>Service parts</td> <td>○</td> </tr> </tbody> </table>	Indoor controller board type	JP3	Factory shipment	×	Service parts	○												
Indoor controller board type	JP3																			
Factory shipment	×																			
Service parts	○																			

PCA-RP71HA PCA-RP125HA

OPERATING PROCEDURE	PHOTOS&ILLUSTRATIONS
<p>1. Removing the oil filter (1) Slide the oil filter towards you to remove. (See figure 1.)</p>	<p>Figure 1</p> 
<p>2. Removing the terminal block box cover (1) Remove the oil filter. (See figure 1.) (2) Remove a screw for terminal block box cover, and remove the terminal block box cover. (See photo 1.)</p>	<p>Photo 1</p> 
<p>3. Removing the control box (1) Remove the oil filter. (See figure 1.) (2) Loosen the screw for control box cover to remove the control box cover. (See photo 2.) (3) Remove the lead wire from the 2 clips. (4) Remove the 2 white cord heater relay connectors (1P × 2) and 2 fan motor relay connectors (6P × 2) in the control box. (5) Remove the 2 screws for control box to slide the control box downward.</p> <p>Electrical parts in the control box</p> <ul style="list-style-type: none"> • Fan motor capacitor • Indoor controller board • Power board 	<p>Photo 2</p>  <p>Photo 3</p> 

OPERATING PROCEDURE

4. Removing the fan motor

- (1) Remove the oil filter. (See figure 1.)
- (2) Remove the control box cover. (See photo 2.)
- (3) Remove the room temperature thermistor connector (CN20) on the indoor controller board. (See photo 3.)
- (4) Remove a filter rail that is the nearest to the control box. (See photo 4.)
- (5) Remove the fan guard. (See photo 5.)
- (6) Remove the room temperature thermistor together with the holder at the right side of the casing.

PHOTOS&ILLUSTRATIONS

Photo 4

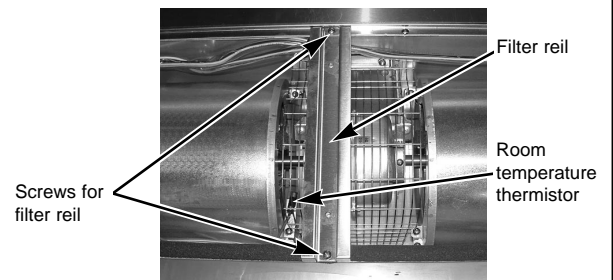
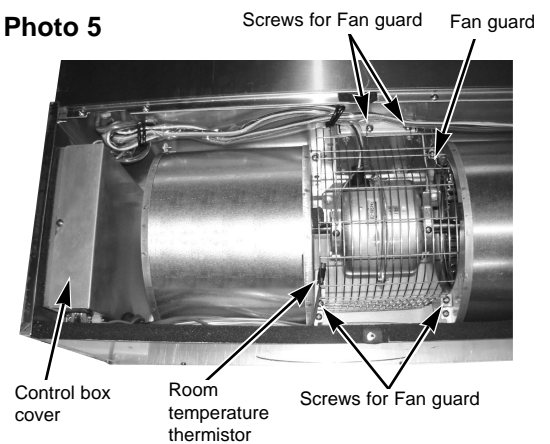


Photo 5



5. Removing the fan motor and the sirocco fan

- (1) Remove the oil filter. (See figure 1.)
- (2) Remove the control box cover. (See photo 2.)
- (3) Remove the fan motor relay connectors (6P) in the control box. (See photo 3.)
- (4) Remove the 3 filter rails. (See photo 1, 4.)
- (5) Remove the fan guard. (See photo 5.)
- (6) Remove the lower casing. (See photo 6.)
- (7) Remove the green earth wire from the motor support. (See photo 7.)
- (8) Remove the 2 screws (M5 X 12) for motor support, and remove the left and right motor supports.
- (9) Remove the fan motor together with the sirocco fan.
- (10) Remove the 2 set screws (M6) to separate the fan motor from the sirocco fan.

Photo 6

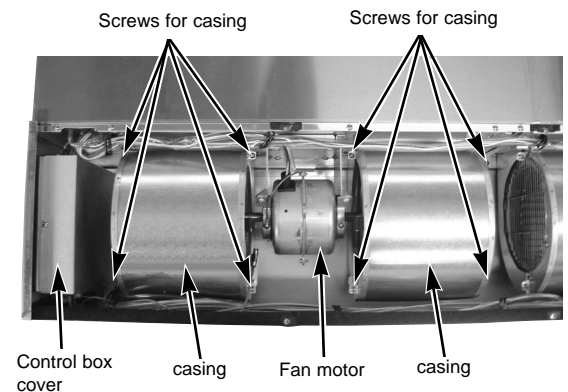
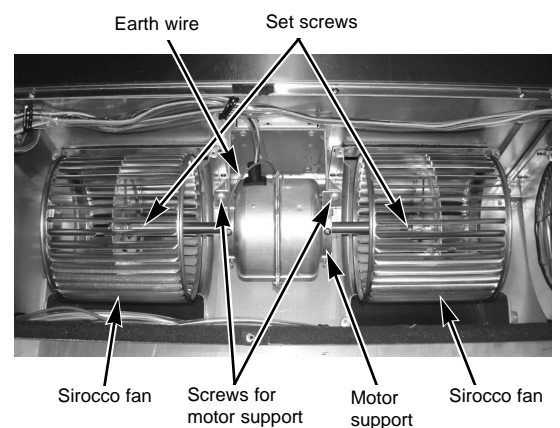


Photo 7



OPERATING PROCEDURE

6. Removing the pipe temperature thermistor

- (1) Remove the oil filter. (See figure 1.)
- (2) Remove the fan guard. (See photo 1.)
- (3) Remove the terminal block box cover.
- (4) Remove the white relay connector (2P) in the terminal block box. (See photo 8.)
- (5) Remove the service panel. (See photo 9.)
- (6) Remove the pipe temperature thermistor from the holder. (See photo 10.)

Caution for installation

When installing the pipe temperature thermistor, slack off its lead wire as shown in the photo. Otherwise, water trickled down the lead wire may splash on the connector and this could cause a short circuit of the connector.

PHOTOS

Photo 8

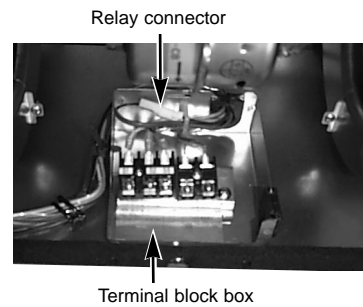


Photo 9

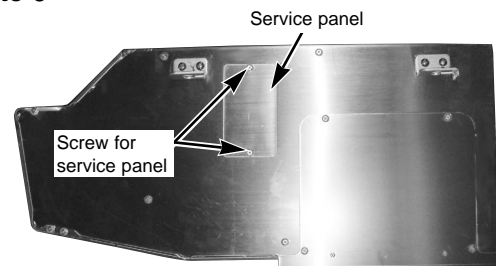
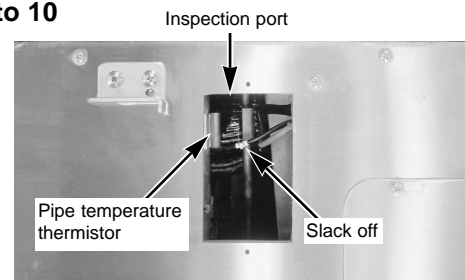


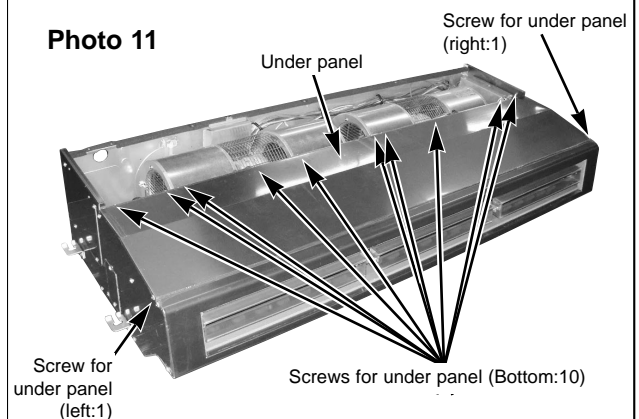
Photo 10



7. Removing the under panel

- (1) Remove the oil filter. (See figure 1.)
- (2) Remove the 3 filter rails. (See photo 1, 4.)
- (3) Remove the 12 screws (left: 1, right: 1, Bottom: 10) for under panel, and remove the under panel. (See photo 11.)

Photo 11

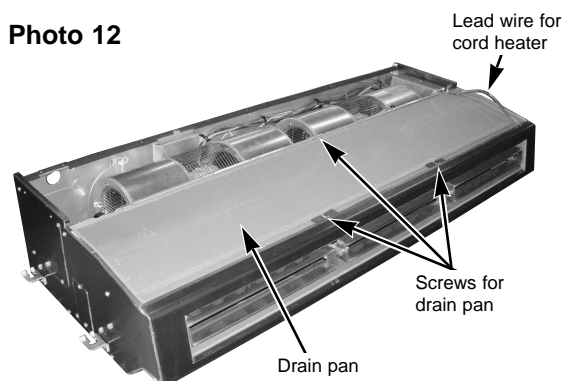


8. Removing the drain pan

- (1) Remove the oil filter. (See Figure 1)
- (2) Remove the 3 filter rails. (See photo 1, 4.)
- (3) Remove the under panel. (See photo 11.)
- (4) Pull the blue lead wire for cord heater towards you to slack off. (See photo 12.)
- (5) Remove the 3 screws at the center of the drain pan, and remove the drain pan.

(Note) Remove the drain pan carefully since the drain could remain in it.

Photo 12

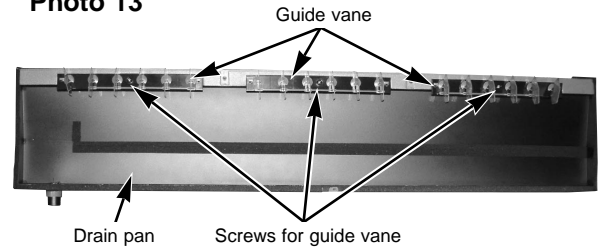


OPERATING PROCEDURE

9. Removing the guide vane

- (1) Remove the oil filter. (See figure 1.)
- (2) Remove the 3 filter rails. (See photo 1, 4.)
- (3) Remove the under panel. (See photo 11.)
- (4) Remove the drain pan. (See photo 12.)
- (5) Remove the 3 screws (4 X 10) for guide vane, and remove the guide vane. (See photo 13.)

Photo 13



10. Removing the vane

- (1) Slide the vane to the center of the unit, and pull it towards you to remove. (See photo 14.)

Caution for installation

When installing the vane, check that its projection is on the left-rear side.

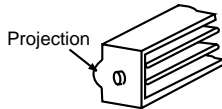
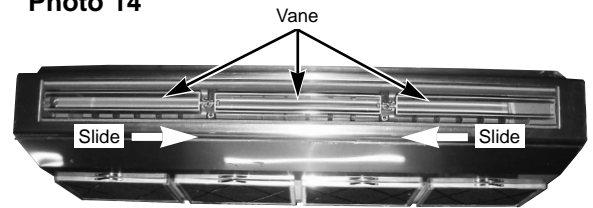


Photo 14



11. Removing the heat exchanger

- (1) Remove the oil filter. (See figure 1.)
- (2) Remove the 3 filter rails. (See photo 1, 4.)
- (3) Remove the under panel. (See photo 11.)
- (4) Remove the drain pan. (See photo 12.)
- (5) Remove the 2 screws (4 X 10) for pipe cover, and remove the pipe cover. (See photo 15.)
- (6) Remove the 3 screws (4 X 10, left: 2, right: 1) for heat exchanger. (See photo 15, 16.)
- (7) Remove the 2 screws (4 X 10) for heat exchanger at the top of the unit, and remove the heat exchanger. (See photo 17.)

Photo 15

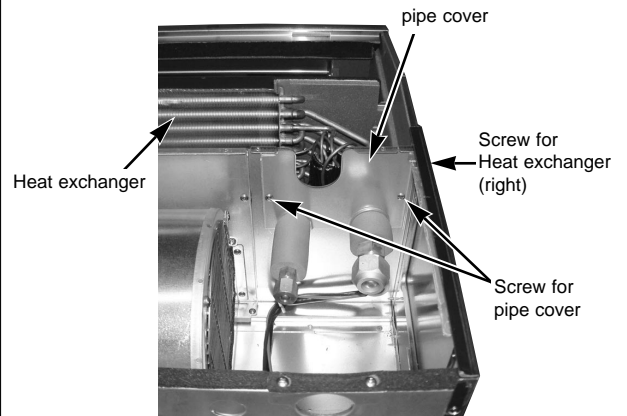


Photo 17

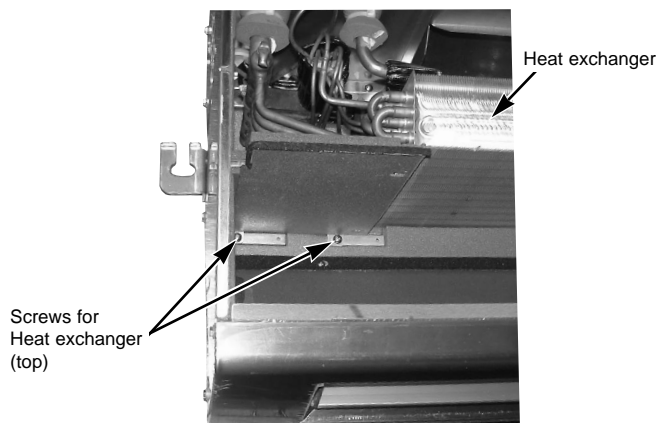
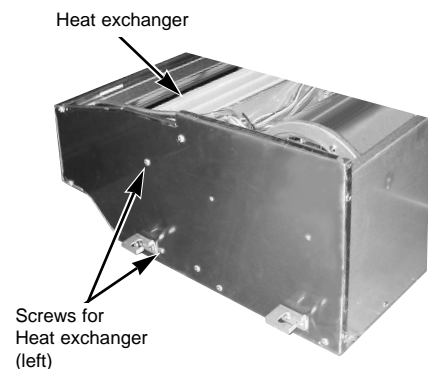
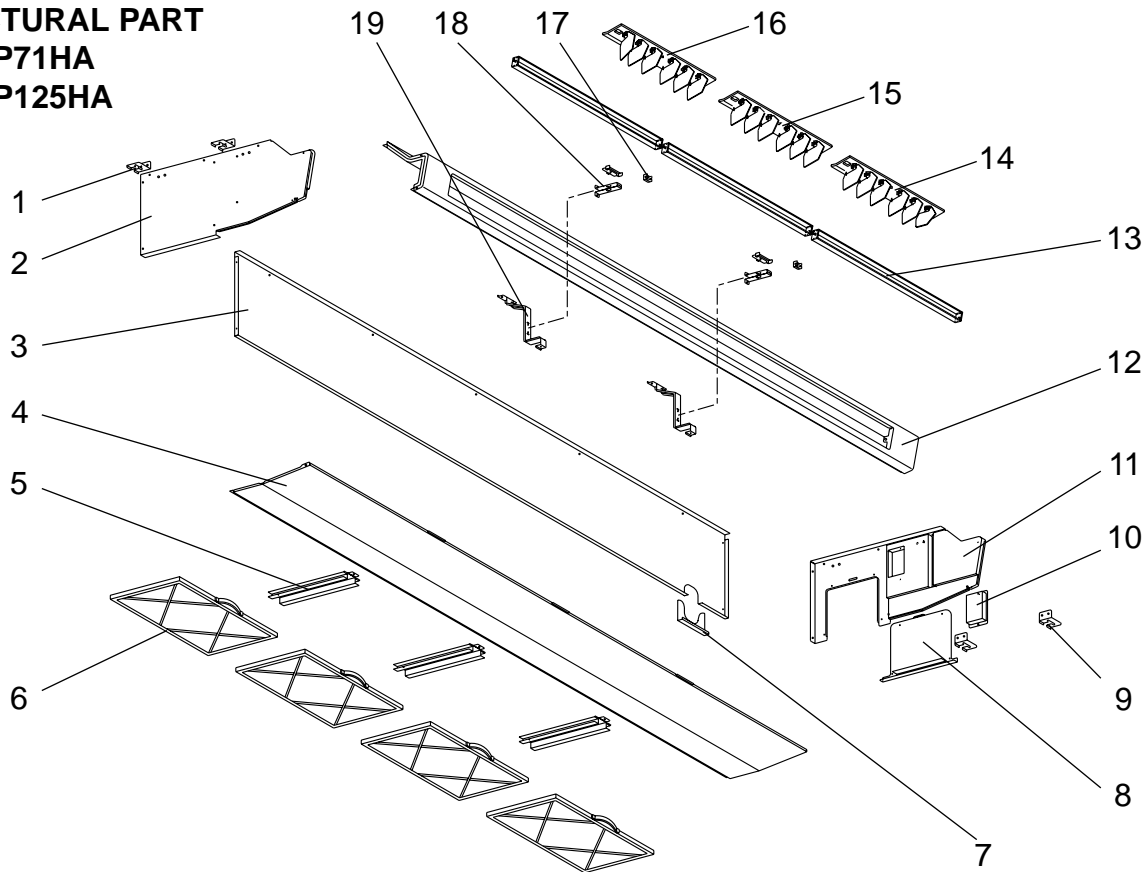


Photo 16

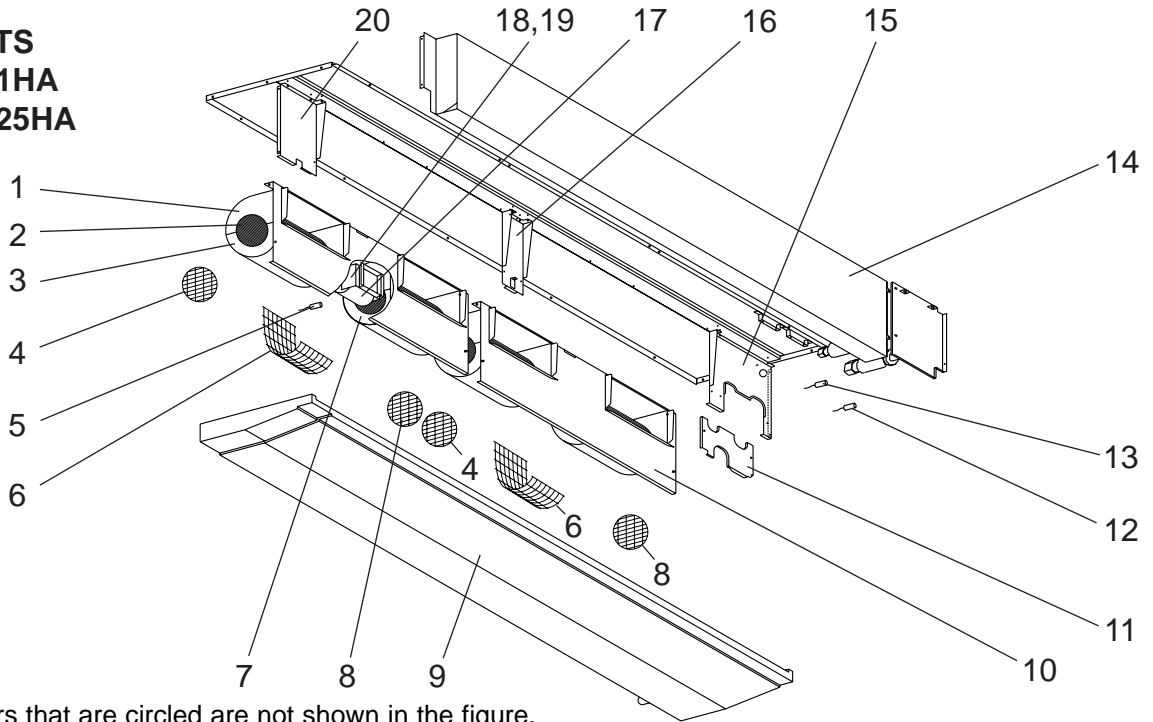


STRUCTURAL PART
PCA-RP71HA
PCA-RP125HA



No.	Parts No.	Parts Name	Specifications	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PCA-RP					Unit	Amount
				71HA	125HA					
1	R01 13N 809	LEG-L		2	2					
2	R01 13N 662	SIDE PLATE-L		1	1					
3	T7W E02 676	REAR PANEL		1						
	T7W E03 676	REAR PANEL			1					
4	R01 12N 669	UNDER PANEL		1						
	R01 13N 669	UNDER PANEL			1					
5	R01 13N 503	FILTER RAIL		2	3					
6	R01 E05 500	OIL FILTER		3	4					
7	—	DRAIN HOSE SUPPORT		1	1	(BG00K145G02)				
8	R01 13N 667	SIDE COVER		1	1					
9	R01 13N 808	LEG-R		2	2					
10	R01 13N 668	SERVICE PANEL		1	1					
11	R01 13N 661	SIDE PLATE-R		1	1					
12	T7W E02 651	FRONT PANEL		1						
	T7W E03 651	FRONT PANEL			1					
13	R01 12N 002	VANE ASSY		2						
	R01 13N 002	VANE ASSY			3					
14	R01 13N 086	GUIDE VANE ASSY-6L		1	1					
15	R01 13N 087	GUIDE VANE ASSY-6C			1					
16	R01 13N 085	GUIDE VANE ASSY-6R		1	1					
17	R01 13N 533	VANE HOLDER		1	2					
18	—	VANE SUPPORT		1	2	(BG00K146G02)				
19	—	FRONT SUPPORT		1	2	(BG00T773G01)				

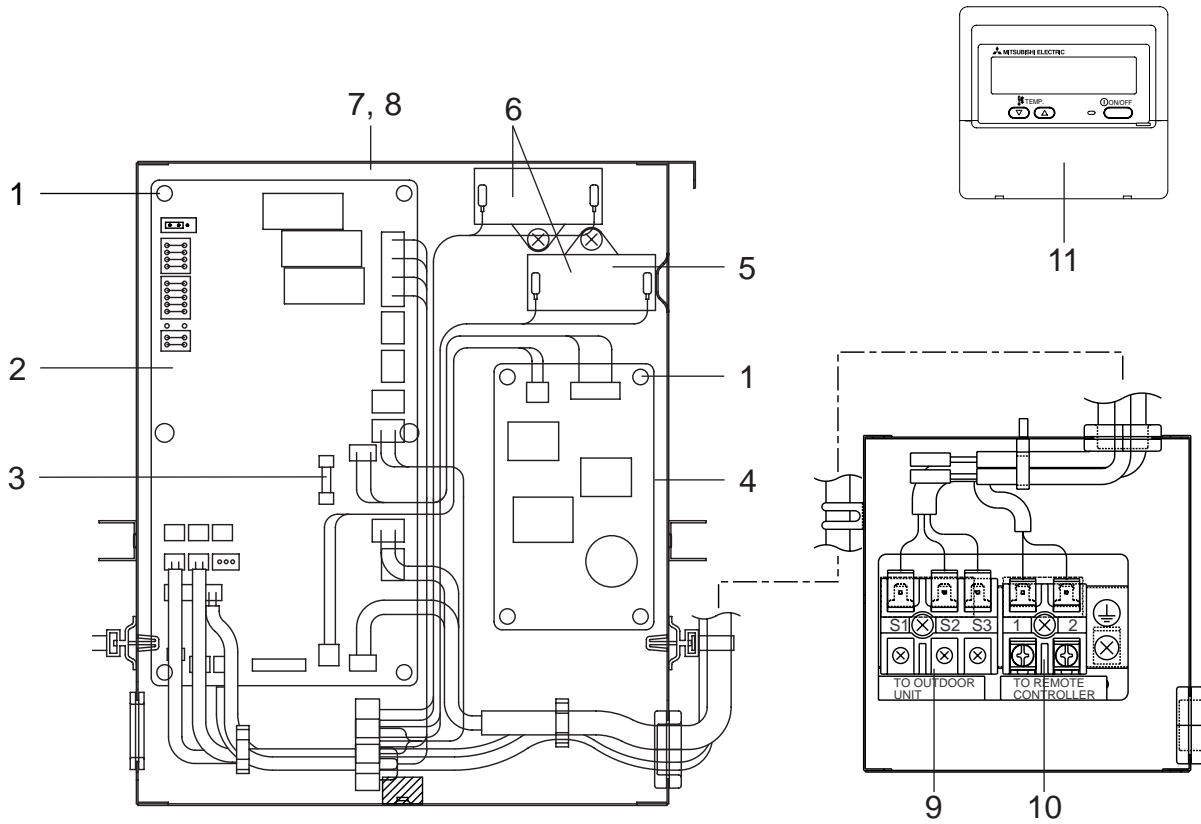
FAN PARTS
PCA-RP71HA
PCA-RP125HA



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

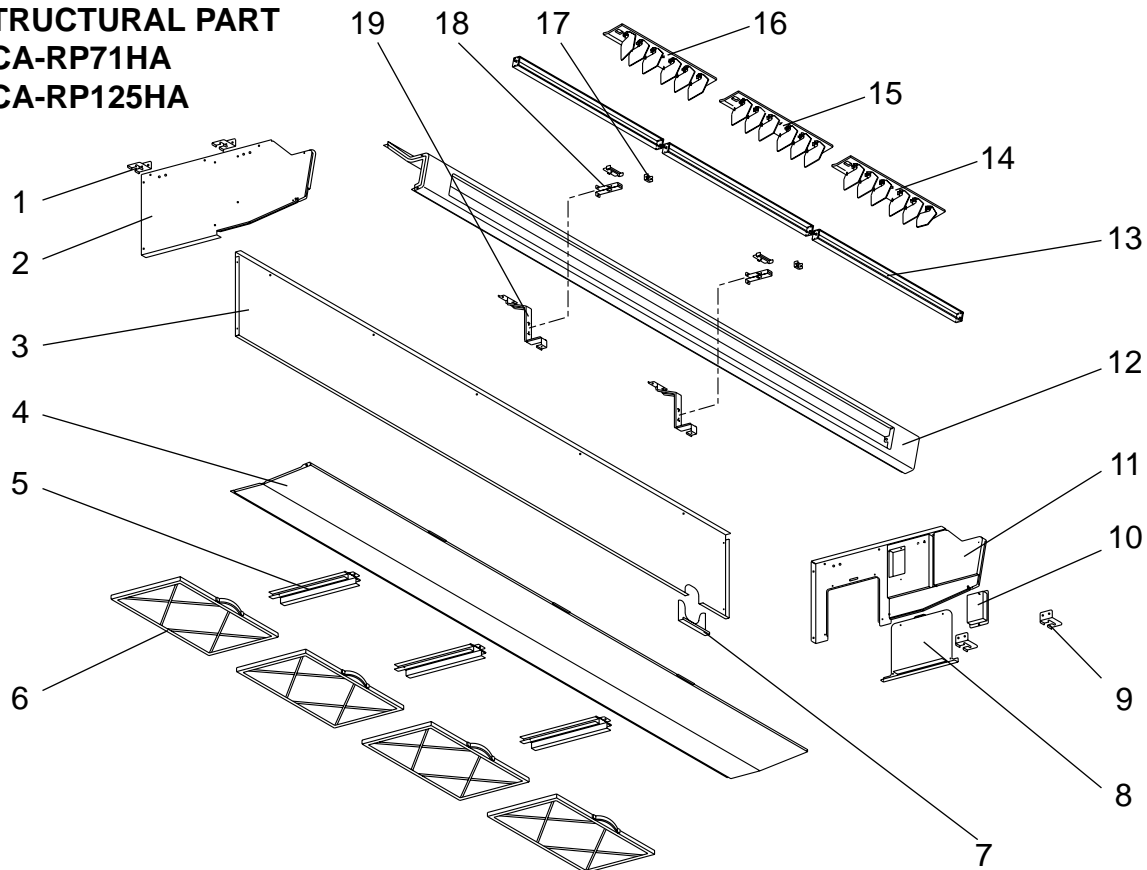
No.	Parts No.	Parts Name	Specifications	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PCA-RP					Unit	Amount
				71HA	125HA					
1	R01 12N 110	T. CASING ASSY		2						
	R01 13N 110	T. CASING ASSY			4					
2	R01 12N 114	SIROCO FAN		2						
	R01 13N 114	SIROCO FAN			4					
3	T7W E02 111	UNDER CASING-L		1						
	T7W E03 111	UNDER CASING-L			2					
4	T7W E12 675	FAN GUARD-S		1	2					
5	R01 E51 202	ROOM TEMPERATUR TERMISTOR		1	1		TH1			
6	T7W E14 675	FAN GUARD-L		1						
	T7W E13 675	FAN GUARD-L			2					
7	T7W E00 111	UNDER CASING-R		1						
	T7W E01 111	UNDER CASING-R			2					
8	T7W E11 675	FAN GUARD-S		1	2					
9	R01 12N 529	DRAINPAN ASSY		1						
	R01 13N 529	DRAINPAN ASSY			1					
10	—	FAN PLATE		1		(BG00N756G15)				
	—	FAN PLATE			2	(BG00N756G14)				
11	—	PIPE SUPPORT		1	1	(BG02T500H04)				
12	R01 13N 202	PIPE TEMPERATURE TERMISTOR		1	1		TH2			
13	R01 E63 202	CONDENSER / EVAPORATOR TEMPERATURE TERMISTOR		1	1		TH5			
14	R01 H04 480	HEAT EXCHANGER		1						
	T7W K07 480	HEAT EXCHANGER			1					
15	—	FAN PLATE SUPPORT-R		1	1	(BG00N893G15)				
16	—	FAN PLATE SUPPORT-C		1	1	(BG00N893G14)				
17	T7W E20 762	FAN MOTOR	PA6V40-CB	1			MF1			
	T7W E21 762	FAN MOTOR	PA4V80-CA		2		MF1,2			
18	R01 45K 130	MOTOR LEG		1	2					
19	R01 83E 126	PIECE FOR MOTOR		1	2					
20	—	FAN PLATE SUPPORT-L		1	1	(BG00N893G13)				
21	R01 13N 521	PIPE COVER		1	1					
22	R01 13N 072	DRAIN HOSE COVER		1	1					
23	R01 811 105	RUBBER MOUNT		2	4					

ELECTRICAL PARTS
PCA-RP71HA
PCA-RP125HA



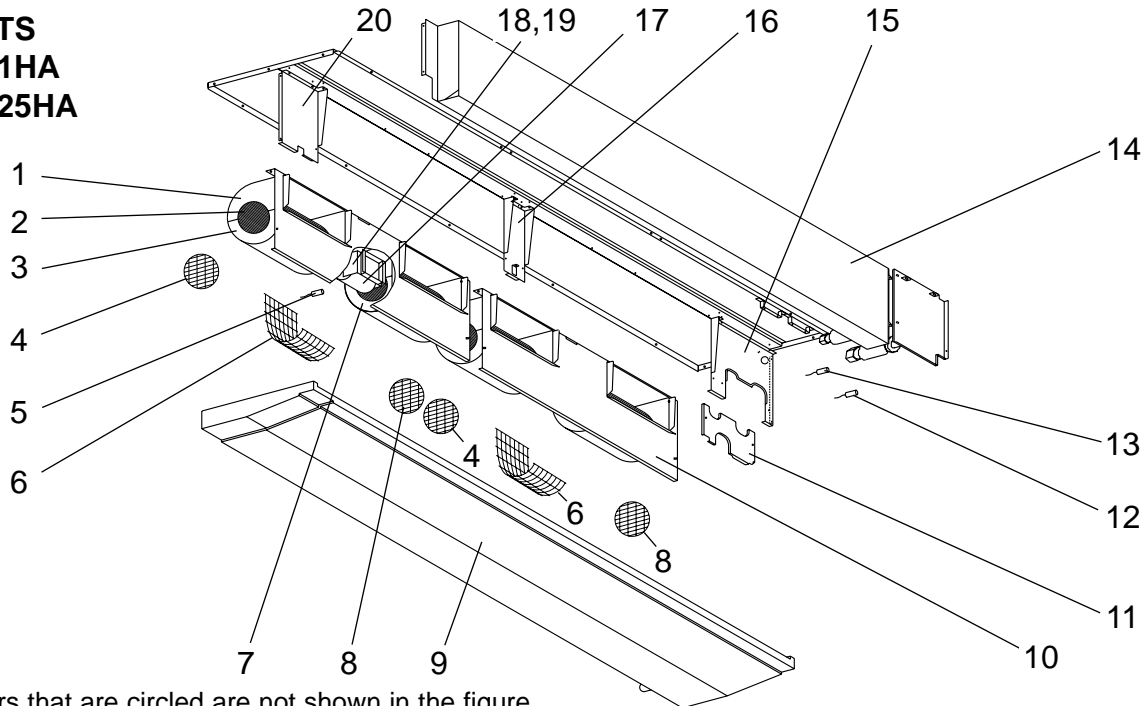
No.	Parts No.	Parts Name	Specifications	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PCA-RP					Unit	Amount
				71HA	125HA					
1	R01 18J 054	SUPPORT		9	9					
2	T7W E41 310	CONTROLLER BOARD		1	1		I.B			
3	R01 E02 239	FUSE	250V 6.3A	1	1		FUSE			
4	R01 E02 313	POWER BOARD		1	1		P.B			
5	R01 A00 255	RUN CAPACITOR	2.5 μ F, 440V	1			C1			
6	R01 576 255	RUN CAPACITOR	3 μ F, 440V		2		C1,C2			
7	—	CONTROL BOX COVER		1	1	(BG02N713H05)				
8	—	CONTROL BOX		1	1	(BG00T759G13)				
9	T7W E23 716	TERMINAL BLOCK	3P(S1, S2, S3)	1	1		TB4			
10	R01 556 246	TERMINAL BLOCK	2P(1, 2)	1	1		TB5			
11	T7W E08 713	REMOTE CONTROLLER	PAR-21MAA	1	1		R.B			

STRUCTURAL PART
PCA-RP71HA
PCA-RP125HA



No.	ROHS	Parts No.	Parts Name	Specifications	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PCA-RP					Unit	Amount
					71HA	125HA					
1	G	R01 14N 809	LEG-L		2	2					
2	G	R01 14N 662	SIDE PLATE-L		1	1					
3	G	T7W 14N 676	REAR PANEL		1						
	G	T7W 15N 676	REAR PANEL			1					
4	G	R01 14N 669	UNDER PANEL		1						
	G	R01 15N 669	UNDER PANEL			1					
5	G	R01 14N 503	FILTER RAIL		2	3					
	G	R01 14N 500	OIL FILTER		3	4					
7	G	—	DRAIN HOSE SUPPORT		1	1	(BG00K145G02)				
8	G	R01 14N 667	SIDE COVER		1	1					
9	G	R01 14N 808	LEG-R		2	2					
10	G	R01 14N 668	SERVICE PANEL		1	1					
11	G	R01 14N 661	SIDE PLATE-R		1	1					
	G	T7W 14N 651	FRONT PANEL		1						
12	G	T7W 15N 651	FRONT PANEL			1					
	G	R01 15N 002	VANE ASSY		2						
13	G	R01 16N 002	VANE ASSY			3					
	G	R01 14N 086	GUIDE VANE ASSY-6L		1	1					
15	G	R01 14N 087	GUIDE VANE ASSY-6C			1					
16	G	R01 14N 085	GUIDE VANE ASSY-6R		1	1					
17	G	R01 14N 533	VANE HOLDER		1	2					
18	G	—	VANE SUPPORT		1	2	(BG00K146G02)				
19	G	—	FRONT SUPPORT		1	2	(BG00T773G01)				

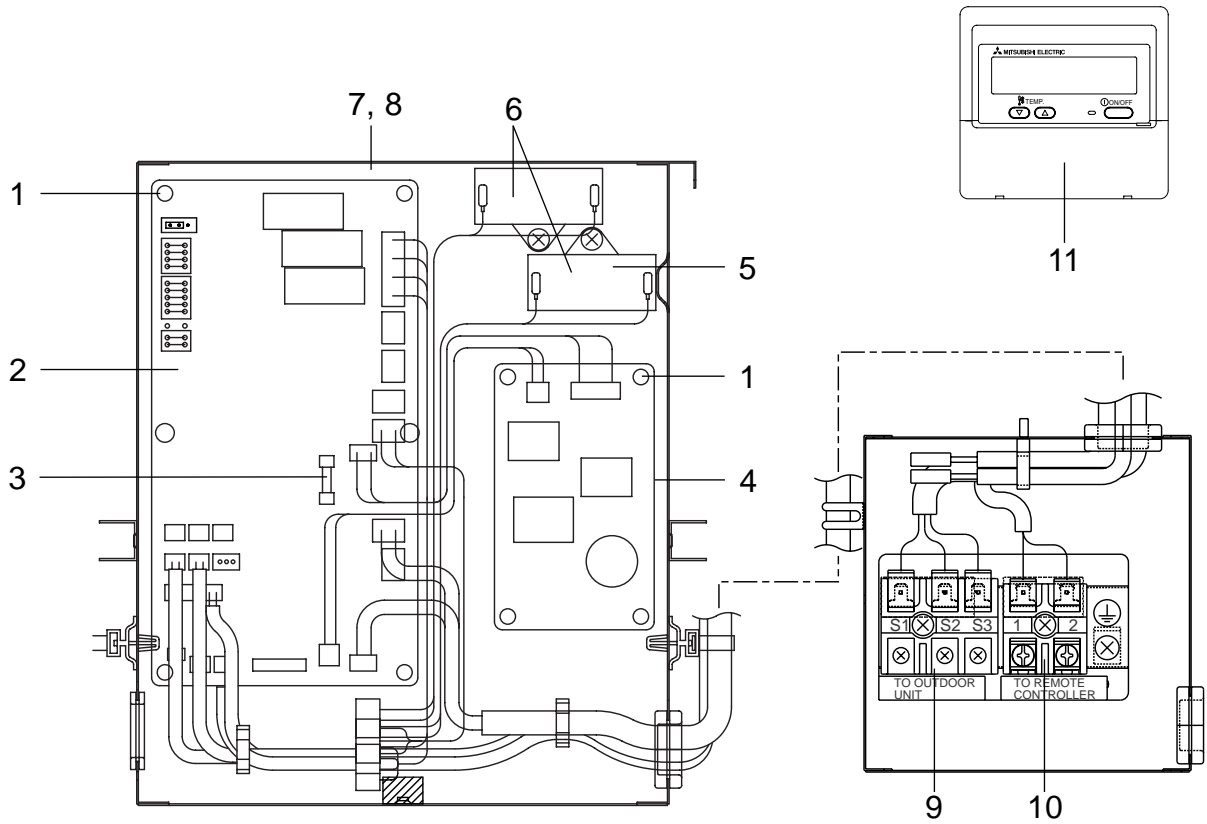
**FAN PARTS
PCA-RP71HA
PCA-RP125HA**



Part numbers that are circled are 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	Price	
					PCA-RP 71HA	125HA				Unit	Amount
1	G	R01 14N 110	T. CASING ASSY		2						
	G	R01 15N 110	T. CASING ASSY			4					
2	G	R01 14N 114	SIROCO FAN		2						
	G	R01 15N 114	SIROCO FAN			4					
3	G	T7W 16N 111	UNDER CASING-L		1						
	G	T7W 17N 111	UNDER CASING-L			2					
4	G	T7W 18N 675	FAN GUARD-S(L)		1	2					
5	G	R01 15N 202	ROOM TEMPERATUR TERMISTOR		1	1		TH1			
6	G	T7W 15N 675	FAN GUARD-L		1						
	G	T7W 16N 675	FAN GUARD-L			2					
7	G	T7W 14N 111	UNDER CASING-R		1						
	G	T7W 15N 111	UNDER CASING-R			2					
8	G	T7W 17N 675	FAN GUARD-S(R)		1	2					
9	G	R01 15N 529	DRAINPAN ASSY		1						
	G	R01 16N 529	DRAINPAN ASSY			1					
10	G	—	FAN PLATE		1		(BG00N756G15)				
	G	—	FAN PLATE			2	(BG00N756G14)				
11	G	—	PIPE SUPPORT		1	1	(BG02T500H04)				
12	G	R01 16N 202	PIPE TEMPERATURE TERMISTOR		1	1		TH2			
13	G	R01 17N 202	CONDENSER/ EVAPORATOR TEMPERATURE TERMISTOR		1	1		TH5			
14	G	R01 J68 480	HEAT EXCHANGER		1						
	G	T7W H55 480	HEAT EXCHANGER			1					
15	G	—	FAN PLATE SUPPORT-R		1	1	(BG00N893G15)				
16	G	—	FAN PLATE SUPPORT-C		1	1	(BG00N893G14)				
17	G	T7W 14N 762	FAN MOTOR	PA6V40-CB	1			MF1			
	G	T7W 15N 762	FAN MOTOR	PA4V80-CA		2		MF1,2			
18	G	R01 14N 130	MOTOR LEG		1	2					
19	G	R01 14N 126	PIECE FOR MOTOR		1	2					
20	G	—	FAN PLATE SUPPORT-L		1	1	(BG00N893G13)				
21	G	R01 14N 521	PIPE COVER		1	1					
22	G	R01 14N 072	DRAIN HOSE COVER		1	1					
23	G	R01 14N 105	RUBBER MOUNT		2	4					

ELECTRICAL PARTS
PCA-RP71HA
PCA-RP125HA



No.	RoHS	Parts No.	Parts Name	Specifications	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PCA-RP					Unit	Amount
					71HA	125HA					
1	G	R01 20J 054	SUPPORT		9	9					
2	G	T7W E51 310	CONTROLLER BOARD		1	1		I.B			
3	G	R01 E06 239	FUSE	250V 6.3A	1	1		FUSE			
4	G	R01 E38 313	POWER BOARD		1	1		P.B			
5	G	R01 14N 255	RUN CAPACITOR	2.5 μ F, 440V	1			C1			
6	G	R01 E12 255	RUN CAPACITOR	3 μ F, 440V		2		C1,C2			
7	G	—	CONTROL BOX COVER		1	1	(BG02N713H05)				
8	G	—	CONTROL BOX		1	1	(BG00T759G13)				
9	G	R01 E20 246	TERMINAL BLOCK	3P(S1, S2, S3)	1	1		TB4			
10	G	R01 E21 246	TERMINAL BLOCK	2P(1, 2)	1	1		TB5			
11	G	T7W E11 713	REMOTE CONTROLLER	PAR-21MAA	1	1		R.B			

Mr. SLIM™

 **mitsubishi electric corporation**

HEAD OFFICE : TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN