

SERVICE MANUAL

Series PCA Ceiling Suspended R407C/R410A

**Indoor unit
[Model names]**

PCA-RP50GA
 PCA-RP60GA
 PCA-RP71GA
 PCA-RP100GA
 PCA-RP125GA
 PCA-RP140GA

[Service Ref.]

PCA-RP50GA
 PCA-RP60GA
 PCA-RP71GA
 PCA-RP100GA
 PCA-RP125GA
 PCA-RP140GA

NOTE:

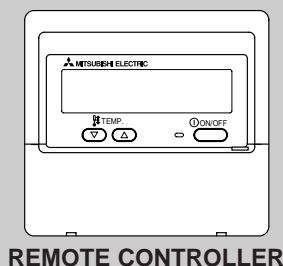
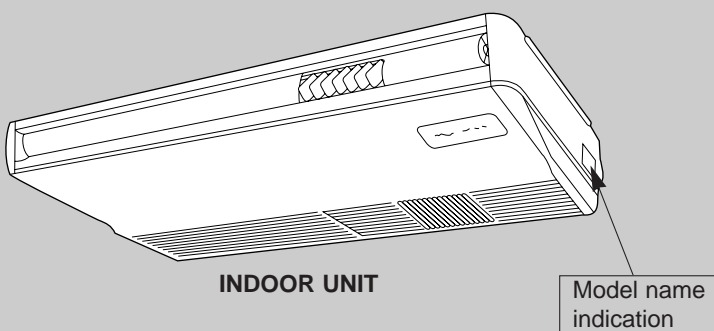
- This manual describes only service data of the indoor units.

Series PCH

PCH-P50GAH
 PCH-P60GAH
 PCH-P71GAH
 PCH-P100GAH
 PCH-P125GAH
 PCH-P140GAH

PCH-P50GAH
 PCH-P60GAH
 PCH-P71GAH
 PCH-P100GAH
 PCH-P125GAH
 PCH-P140GAH

R407C



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1-1. OUTDOOR UNIT'S SERVICE MANUAL

Service Ref.	Service Manual No.
PUHZ-RP35/50/60/71/100/125/140VHA PUHZ-RP100/125/140YHA	OC334
PUHZ-RP71/100/125/140VHA-A	OC337
PUHZ-RP200/250YHA	OC338
PUHZ-RP200/250YHA-A	OC339
PU(H)-P.VGAA.UK PU(H)-P.YGAA.UK	OC336
SUZ-KA.VA.TH	OC322

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

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

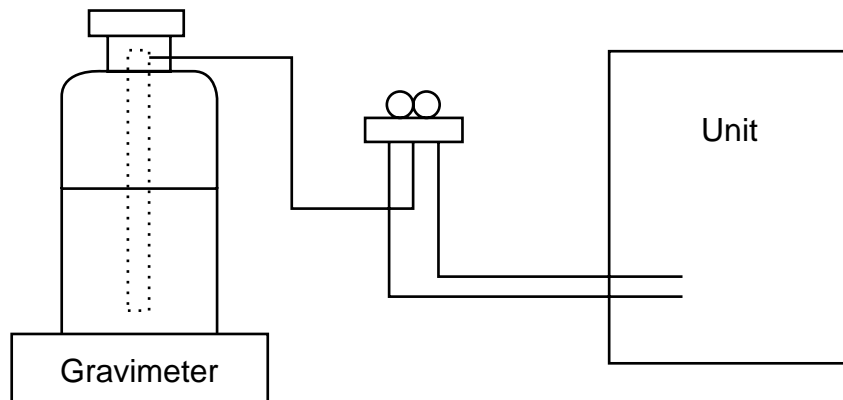
- After recovering the all refrigerant in the unit, proceed to working.
- Do not release refrigerant in the air.
- After completing the repair service, recharge the cycle with the specified amount of liquid refrigerant.

[2] Refrigerant recharging

(1) Refrigerant recharging process

①Direct 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 RP100, 125 and 140, 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.

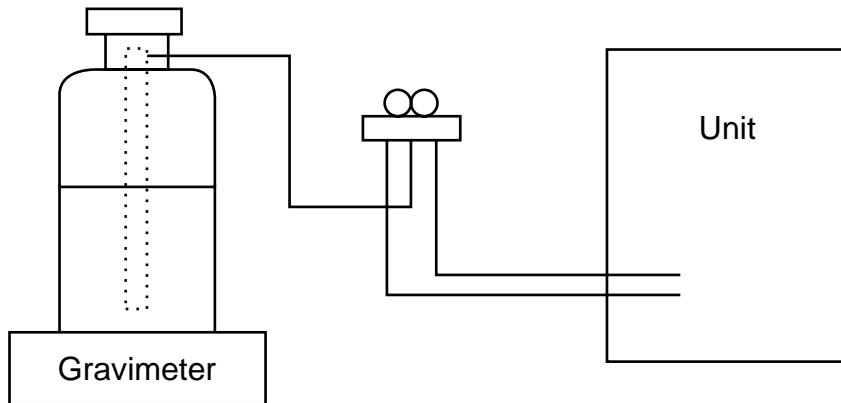
[1] Cautions for service

- (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

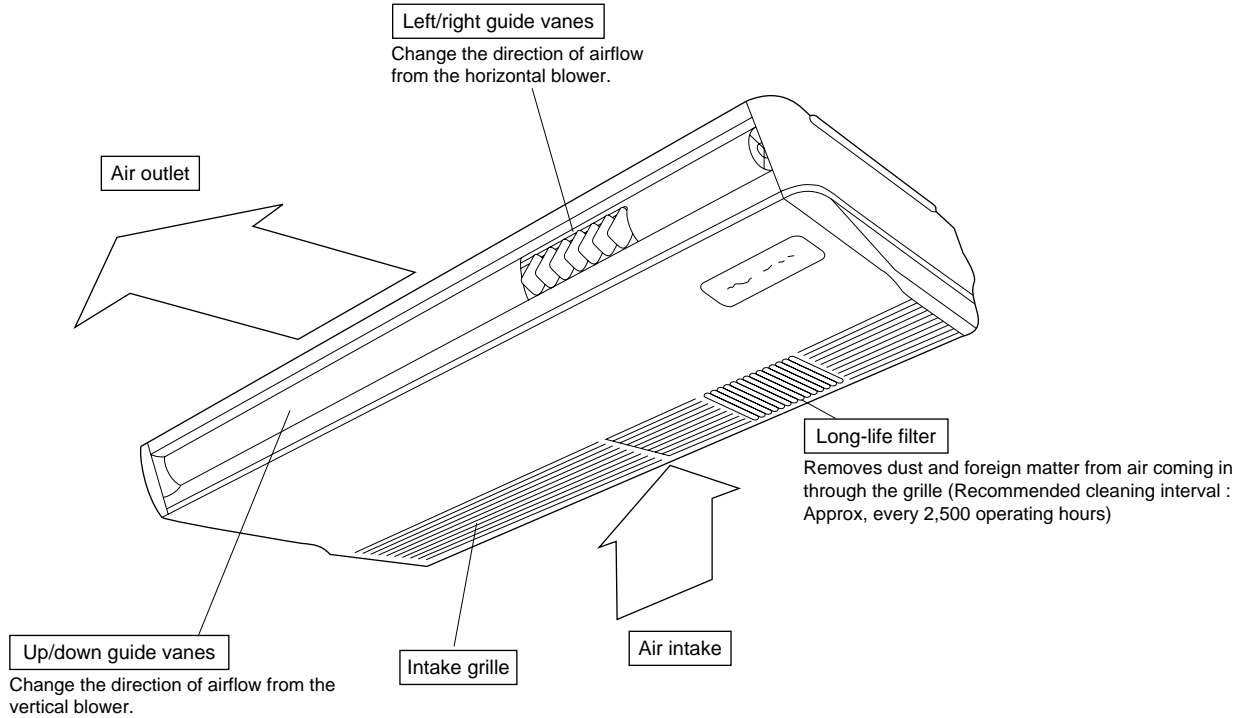
Use the below service tools as exclusive tools for R410A refrigerant.

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

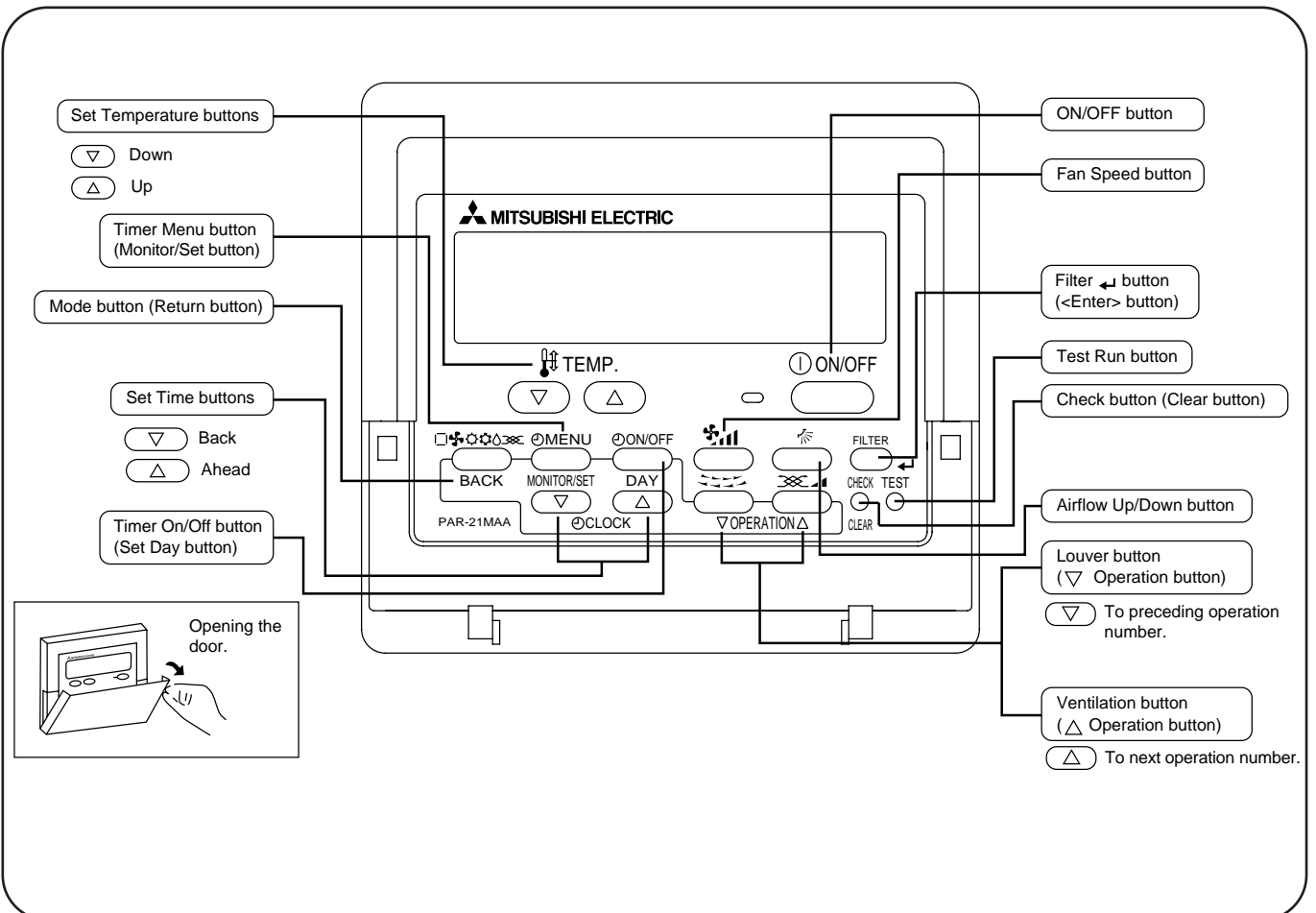
● Indoor Unit



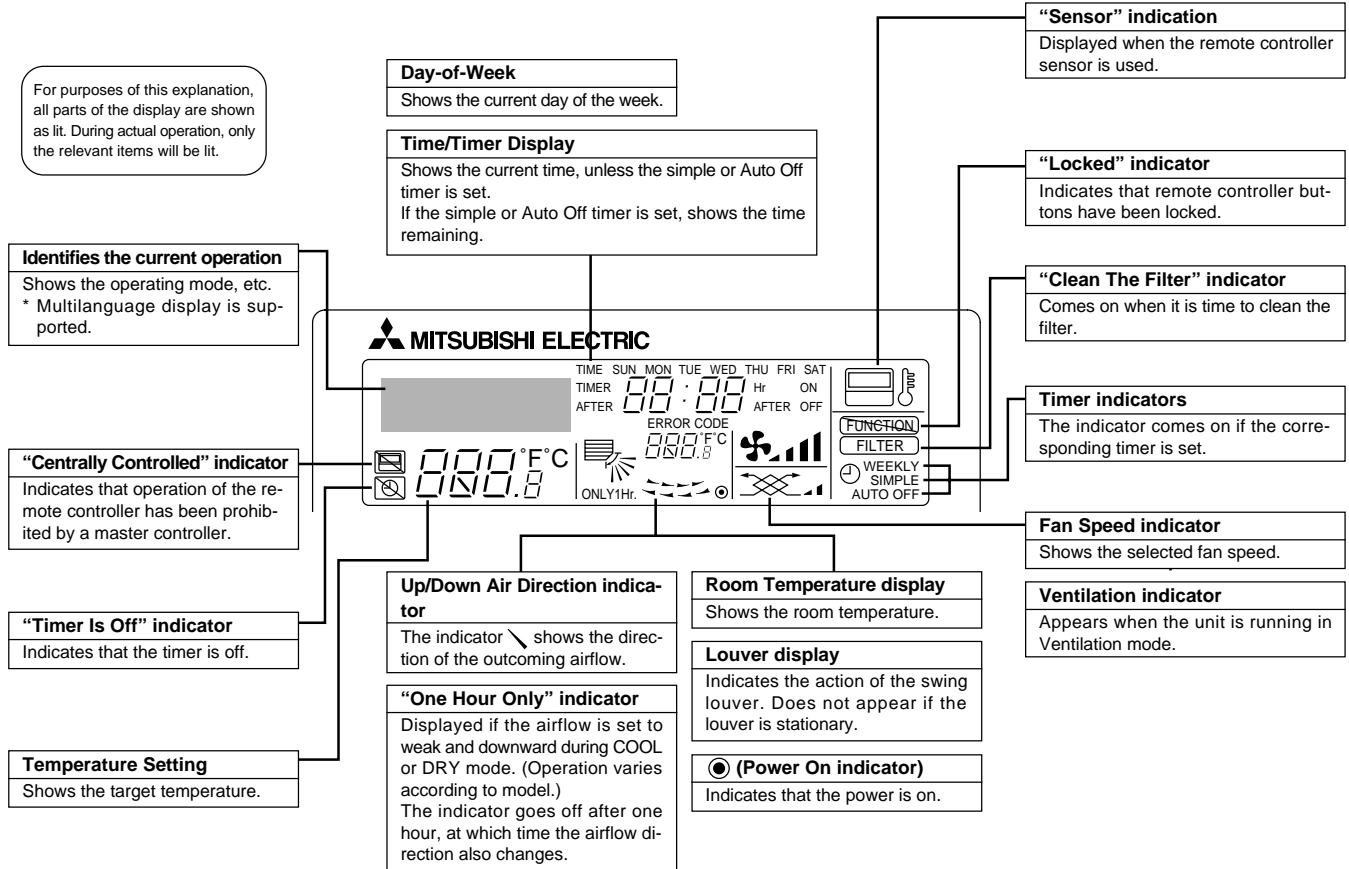
● Remote controller

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 the parent unit.
- 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.

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SPECIFICATIONS

Service Ref.			PCA-RP50GA	
Mode			Cooling	Heating
Power supply(phase, cycle, voltage)			Single phase, 50Hz, 230V	
Input	kW		0.09	0.09
Running current	A		0.41	0.41
Starting current	A		1.20	1.20
External finish			Munsell 0.70Y 8.59/0.97	
Heat exchanger			Plate fin coil	
INDOOR UNIT	Fan		Sirocco fan (direct) x 2	
	Fan(drive) x No.			
	Fan motor output	kW	0.054	
	Airflow(Low-Medium2-Medium1-High)	m ³ /min(CFM)	10-11-12-13(355-390-425-460)	
External static pressure	Pa(mmAq)	0(direct blow)		
Operation control & Thermostat			Remote controller & built-in	
Noise level(Low-Medium2-Medium1-High)		dB	37-38-40-42	
Unit drain pipe I.D.		mm(in.)	26(1)	
Dimensions	W	mm(in.)	1,000(39-3/8)	
	D	mm(in.)	680(26-3/4)	
	H	mm(in.)	210(8-1/4)	
Weight		kg(lbs)	27(60)	

Service Ref.			PCA-RP60GA	
Mode			Cooling	Heating
Power supply(phase, cycle, voltage)			Single phase, 50Hz, 230V	
Input	kW		0.12	0.12
Running current	A		0.53	0.53
Starting current	A		1.27	1.27
External finish			Munsell 0.70Y 8.59/0.97	
Heat exchanger			Plate fin coil	
INDOOR UNIT	Fan		Sirocco fan (direct) x 3	
	Fan(drive) x No.			
	Fan motor output	kW	0.070	
	Airflow(Low-Medium2-Medium1-High)	m ³ /min(CFM)	14-15-16-18(495-530-565-635)	
External static pressure	Pa(mmAq)	0(direct blow)		
Operation control & Thermostat			Remote controller & built-in	
Noise level(Low-Medium2-Medium1-High)		dB	37-39-41-43	
Unit drain pipe I.D.		mm(in.)	26(1)	
Dimensions	W	mm(in.)	1,310(51-9/16)	
	D	mm(in.)	680(26-3/4)	
	H	mm(in.)	210(8-1/4)	
Weight		kg(lbs)	34(75)	

Service Ref.			PCA-RP71GA	
Mode			Cooling	Heating
Power supply(phase, cycle, voltage)			Single phase, 50Hz, 230V	
Input	kW		0.12	0.12
Running current	A		0.53	0.53
Starting current	A		1.27	1.27
External finish			Munsell 0.70Y 8.59/0.97	
Heat exchanger			Plate fin coil	
INDOOR UNIT	Fan		Sirocco fan (direct) x 3	
	Fan(drive) x No.			
	Fan motor output	kW	0.070	
	Airflow(Low-Medium2-Medium1-High)	m ³ /min(CFM)	14-15-16-18(495-530-565-635)	
External static pressure	Pa(mmAq)	0(direct blow)		
Operation control & Thermostat			Remote controller & built-in	
Noise level(Low-Medium2-Medium1-High)		dB	37-39-41-43	
Unit drain pipe I.D.		mm(in.)	26(1)	
Dimensions	W	mm(in.)	1,310(51-9/16)	
	D	mm(in.)	680(26-3/4)	
	H	mm(in.)	210(8-1/4)	
Weight		kg(lbs)	34(75)	

Service Ref.			PCA-RP100GA	
Mode			Cooling	Heating
Power supply(phase, cycle, voltage)			Single phase, 50Hz, 230V	
Input	kW		0.15	0.15
Running current	A		0.69	0.69
Starting current	A		1.48	1.48
External finish			Munsell 0.70Y 8.59/0.97	
Heat exchanger			Plate fin coil	
Fan	Fan(drive) x No.		Sirocco fan (direct) x 3	
	Fan motor output	kW	0.090	
	Airflow(Low-Medium2-Medium1-High)	m ³ /min(CFM)	20-21-23-25(705-740-810-885)	
	External static pressure	Pa(mmAq)	0(direct blow)	
Operation control & Thermostat			Remote controller & built-in	
Noise level(Low-Medium2-Medium1-High)		dB	40-41-43-45	
Unit drain pipe I.D.		mm(in.)	26(1)	
Dimensions	W	mm(in.)	1,310(51-9/16)	
	D	mm(in.)	680(26-3/4)	
	H	mm(in.)	270(10-5/8)	
Weight		kg(lbs)	37(82)	

Service Ref.			PCA-RP125GA	
Mode			Cooling	Heating
Power supply(phase, cycle, voltage)			Single phase, 50Hz, 230V	
Input	kW		0.22	0.22
Running current	A		1.01	1.01
Starting current	A		2.20	2.20
External finish			Munsell 0.70Y 8.59/0.97	
Heat exchanger			Plate fin coil	
Fan	Fan(drive) x No.		Sirocco fan (direct) x 4	
	Fan motor output	kW	0.150	
	Airflow(Low-Medium2-Medium1-High)	m ³ /min(CFM)	27-30-32-34(955-1,060-1,130-1,200)	
	External static pressure	Pa(mmAq)	0(direct blow)	
Operation control & Thermostat			Remote controller & built-in	
Noise level(Low-Medium2-Medium1-High)		dB	41-43-45-46	
Unit drain pipe I.D.		mm(in.)	26(1)	
Dimensions	W	mm(in.)	1,620(63-3/4)	
	D	mm(in.)	680(26-3/4)	
	H	mm(in.)	270(10-5/8)	
Weight		kg(lbs)	43(95)	

Service Ref.			PCA-RP140GA	
Mode			Cooling	Heating
Power supply(phase, cycle, voltage)			Single phase, 50Hz, 230V	
Input	kW		0.22	0.22
Running current	A		1.01	1.01
Starting current	A		2.20	2.20
External finish			Munsell 0.70Y 8.59/0.97	
Heat exchanger			Plate fin coil	
Fan	Fan(drive) x No.		Sirocco fan (direct) x 4	
	Fan motor output	kW	0.150	
	Airflow(Low-Medium2-Medium1-High)	m ³ /min(CFM)	27-30-32-34(955-1,060-1,130-1,200)	
	External static pressure	Pa(mmAq)	0(direct blow)	
Operation control & Thermostat			Remote controller & built-in	
Noise level(Low-Medium2-Medium1-High)		dB	42-44-46-48	
Unit drain pipe I.D.		mm(in.)	26(1)	
Dimensions	W	mm(in.)	1,620(63-3/4)	
	D	mm(in.)	680(26-3/4)	
	H	mm(in.)	270(10-5/8)	
Weight		kg(lbs)	45(99)	



Service Ref.			PCH-P50GAH		
Mode			Cooling	Heating	
Power supply(phase, cycle, voltage)			Single phase, 50Hz, 230V		
Input	*1	kW	0.09	0.09<1.29>	
Running current	*1	A	0.41	0.41<5.61>	
Starting current	*1	A	1.20	1.20<5.61>	
External finish			Munsell 0.70Y 8.59/0.97		
Heat exchanger			Plate fin coil		
INDOOR UNIT	Fan	Fan(drive) x No.			Sirocco fan (direct) x 2
		Fan motor output	kW	0.054	
		Airflow(Low-Medium2-Medium1-High)	m ³ /min(CFM)	10-11-12-13(355-390-425-460)	
		External static pressure	Pa(mmAq)	0(direct blow)	
Booster heater *1			kW	<1.29>	
Operation control & Thermostat			Remote controller & built-in		
Noise level(Low-Medium2-Medium1-High)			dB		37-38-40-42
Unit drain pipe I.D.			mm(in.)		26(1)
Dimensions	W	mm(in.)	1,000(39-3/8)		
	D	mm(in.)	680(26-3/4)		
	H	mm(in.)	210(8-1/4)		
Weight			kg(lbs)		28.5(63)

Service Ref.			PCH-P60GAH		
Mode			Cooling	Heating	
Power supply(phase, cycle, voltage)			Single phase, 50Hz, 230V		
Input	*1	kW	0.12	0.12<1.93>	
Running current	*1	A	0.53	0.53<8.39>	
Starting current	*1	A	1.27	1.27<8.39>	
External finish			Munsell 0.70Y 8.59/0.97		
Heat exchanger			Plate fin coil		
INDOOR UNIT	Fan	Fan(drive) x No.			Sirocco fan (direct) x 3
		Fan motor output	kW	0.070	
		Airflow(Low-Medium2-Medium1-High)	m ³ /min(CFM)	14-15-16-18(495-530-565-635)	
		External static pressure	Pa(mmAq)	0(direct blow)	
Booster heater *1			kW	<1.93>	
Operation control & Thermostat			Remote controller & built-in		
Noise level(Low-Medium2-Medium1-High)			dB		37-39-41-43
Unit drain pipe I.D.			mm(in.)		26(1)
Dimensions	W	mm(in.)	1,310(51-9/16)		
	D	mm(in.)	680(26-3/4)		
	H	mm(in.)	210(8-1/4)		
Weight			kg(lbs)		36(79)

Service Ref.			PCH-P71GAH		
Mode			Cooling	Heating	
Power supply(phase, cycle, voltage)			Single phase, 50Hz, 230V		
Input	*1	kW	0.12	0.12<1.93>	
Running current	*1	A	0.53	0.53<8.39>	
Starting current	*1	A	1.27	1.27<8.39>	
External finish			Munsell 0.70Y 8.59/0.97		
Heat exchanger			Plate fin coil		
INDOOR UNIT	Fan	Fan(drive) x No.			Sirocco fan (direct) x 3
		Fan motor output	kW	0.070	
		Airflow(Low-Medium2-Medium1-High)	m ³ /min(CFM)	14-15-16-18(495-530-565-635)	
		External static pressure	Pa(mmAq)	0(direct blow)	
Booster heater *1			kW	<1.93>	
Operation control & Thermostat			Remote controller & built-in		
Noise level(Low-Medium2-Medium1-High)			dB		37-39-41-43
Unit drain pipe I.D.			mm(in.)		26(1)
Dimensions	W	mm(in.)	1,310(51-9/16)		
	D	mm(in.)	680(26-3/4)		
	H	mm(in.)	210(8-1/4)		
Weight			kg(lbs)		36(79)

*1 : < > Shows the only booster heater rating.

Service Ref'			PCH-P100GAH		
Mode			Cooling	Heating	
Power supply(phase, cycle, voltage)			Single phase, 50Hz, 230V		
Input	*1	kW	0.15	0.15<2.48>	
Running current	*1	A	0.69	0.69<10.78>	
Starting current	*1	A	1.48	1.48<10.78>	
External finish			Munsell 0.70Y 8.59/0.97		
Heat exchanger			Plate fin coil		
Fan	Fan(drive) x No.		Sirocco fan (direct) x 3		
	Fan motor output		0.090		
	Airflow(Low-Medium2-Medium1-High)		20-21-23-25(705-740-810-885)		
	External static pressure		0(direct blow)		
Booster heater *1			kW <2.48>		
Operation control & Thermostat			Remote controller & built-in		
Noise level(Low-Medium2-Medium1-High)			dB 40-41-43-45		
Unit drain pipe I.D.			mm(in.) 26(1)		
Dimensions	W	mm(in.)	1,310(51-9/16)		
	D	mm(in.)	680(26-3/4)		
	H	mm(in.)	270(10-5/8)		
Weight			kg(lbs) 39.5(87)		

Service Ref.			PCH-P125GAH		
Mode			Cooling	Heating	
Power supply(phase, cycle, voltage)			Single phase, 50Hz, 230V		
Input	*1	kW	0.22	0.22<2.76>	
Running current	*1	A	1.01	1.01<12.00>	
Starting current	*1	A	2.20	2.20<12.00>	
External finish			Munsell 0.70Y 8.59/0.97		
Heat exchanger			Plate fin coil		
Fan	Fan(drive) x No.		Sirocco fan (direct) x 4		
	Fan motor output		0.150		
	Airflow(Low-Medium2-Medium1-High)		27-30-32-34(955-1,060-1,130-1,200)		
	External static pressure		0(direct blow)		
Booster heater *1			kW <2.76>		
Operation control & Thermostat			Remote controller & built-in		
Noise level(Low-Medium2-Medium1-High)			dB 41-43-45-46		
Unit drain pipe I.D.			mm(in.) 26(1)		
Dimensions	W	mm(in.)	1,620(63-3/4)		
	D	mm(in.)	680(26-3/4)		
	H	mm(in.)	270(10-5/8)		
Weight			kg(lbs) 46(101)		

Service Ref.			PCH-P140GAH		
Mode			Cooling	Heating	
Power supply(phase, cycle, voltage)			Single phase, 50Hz, 230V		
Input	*1	kW	0.22	0.22<2.76>	
Running current	*1	A	1.01	1.01<12.00>	
Starting current	*1	A	2.20	2.20<12.00>	
External finish			Munsell 0.70Y 8.59/0.97		
Heat exchanger			Plate fin coil		
Fan	Fan(drive) x No.		Sirocco fan (direct) x 4		
	Fan motor output		0.150		
	Airflow(Low-Medium2-Medium1-High)		27-30-32-34(955-1,060-1,130-1,200)		
	External static pressure		0(direct blow)		
Booster heater *1			kW <2.76>		
Operation control & Thermostat			Remote controller & built-in		
Noise level(Low-Medium2-Medium1-High)			dB 42-44-46-48		
Unit drain pipe I.D.			mm(in.) 26(1)		
Dimensions	W	mm(in.)	1,620(63-3/4)		
	D	mm(in.)	680(26-3/4)		
	H	mm(in.)	270(10-5/8)		
Weight			kg(lbs) 48(106)		

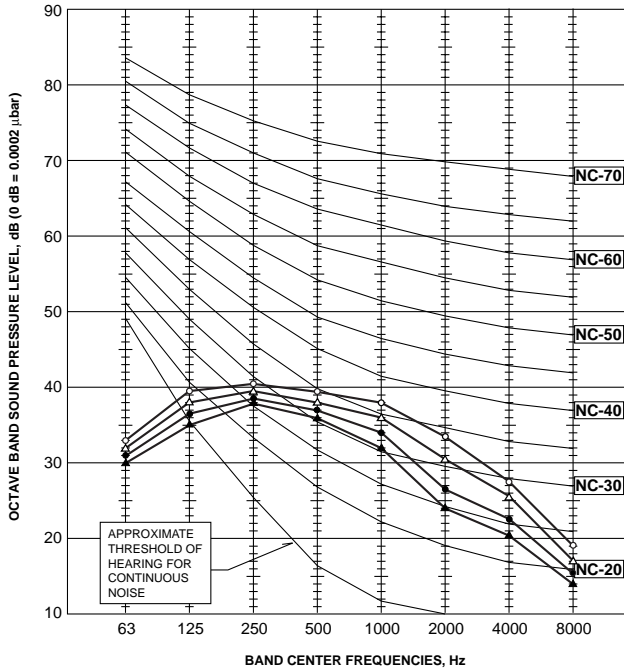
*1 : < > Shows the only booster heater rating.

5

NOISE CRITERION CURVES

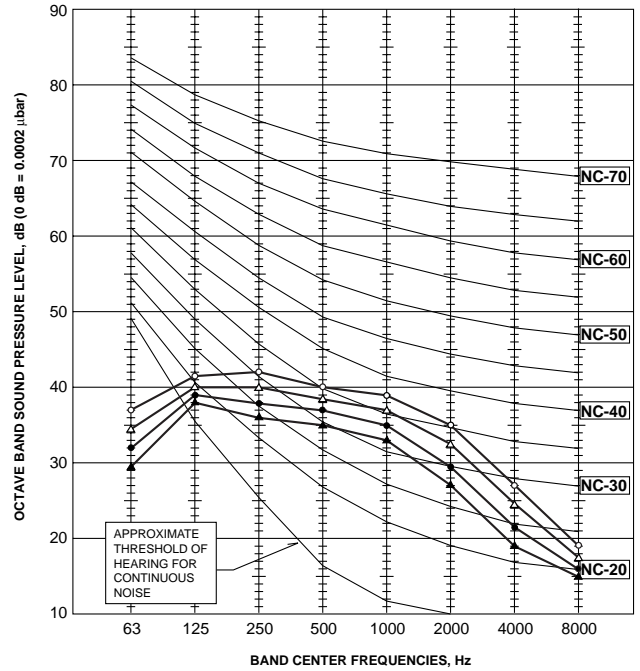
**PCA-RP50GA
PCH-P50GAH**

NOTCH	SPL(dB)	LINE
High	42	○—○
Medium1	40	△—△
Medium2	38	●—●
Low	37	▲—▲



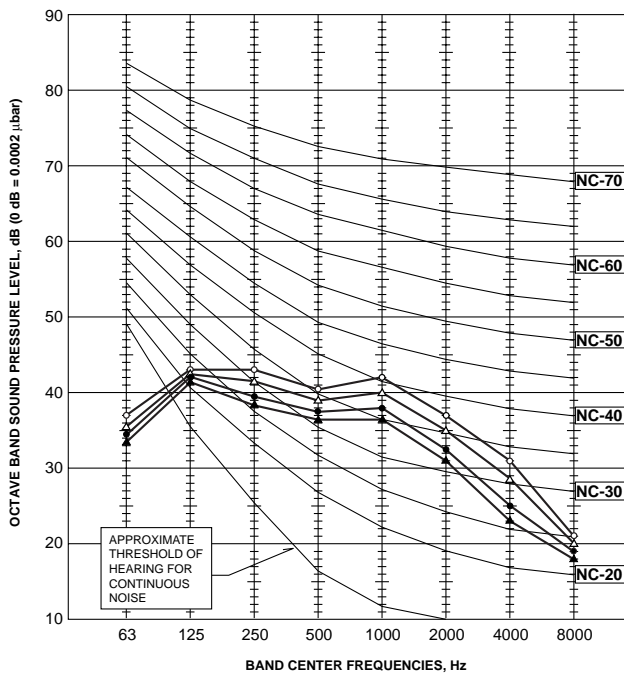
**PCA-RP60GA
PCA-RP71GA
PCH-P60GAH
PCH-P71GAH**

NOTCH	SPL(dB)	LINE
High	43	○—○
Medium1	41	△—△
Medium2	39	●—●
Low	37	▲—▲



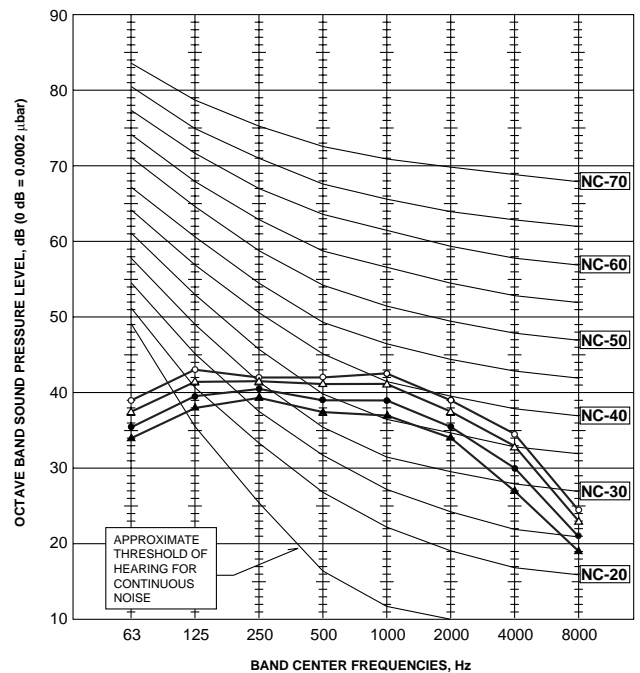
**PCA-RP100GA
PCH-P100GAH**

NOTCH	SPL(dB)	LINE
High	45	○—○
Medium1	43	△—△
Medium2	41	●—●
Low	40	▲—▲



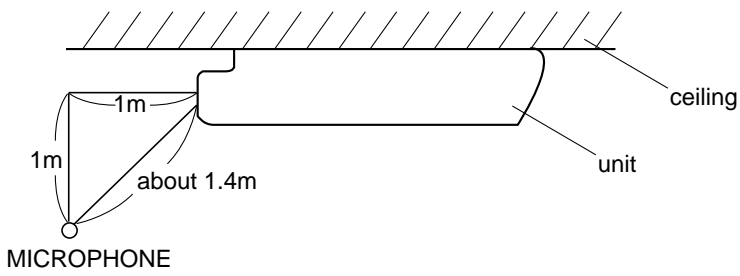
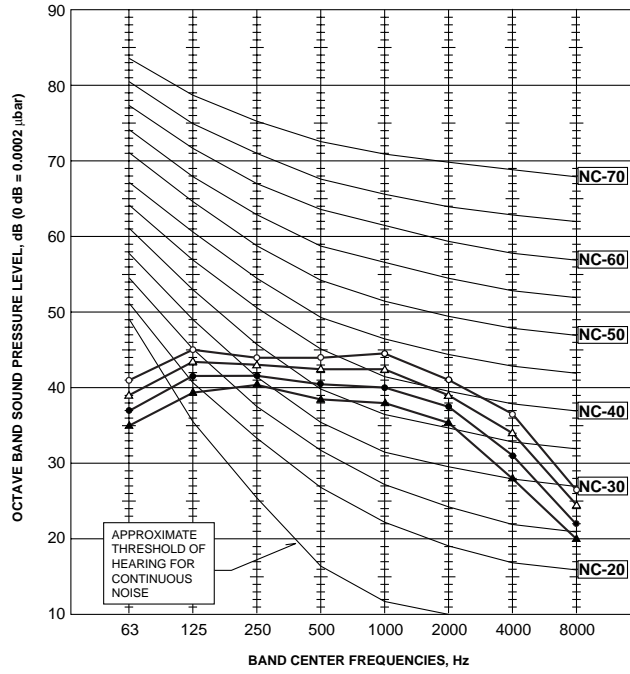
**PCA-RP125GA
PCH-P125GAH**

NOTCH	SPL(dB)	LINE
High	46	○—○
Medium1	45	△—△
Medium2	43	●—●
Low	41	▲—▲



PCA-RP140GA
PCH-P140GAH

NOTCH	SPL(dB)	LINE
High	48	○—○
Medium1	46	△—△
Medium2	44	●—●
Low	42	▲—▲



6

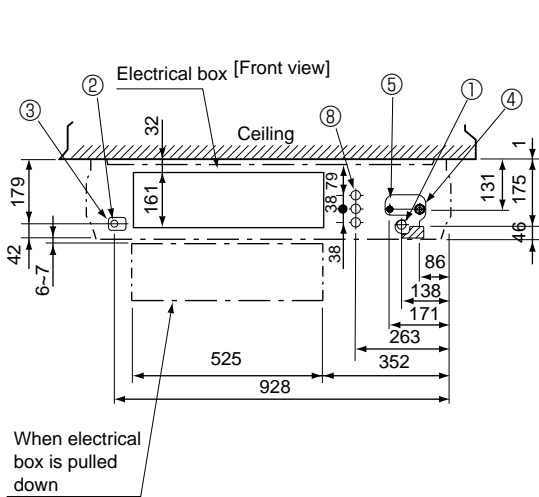
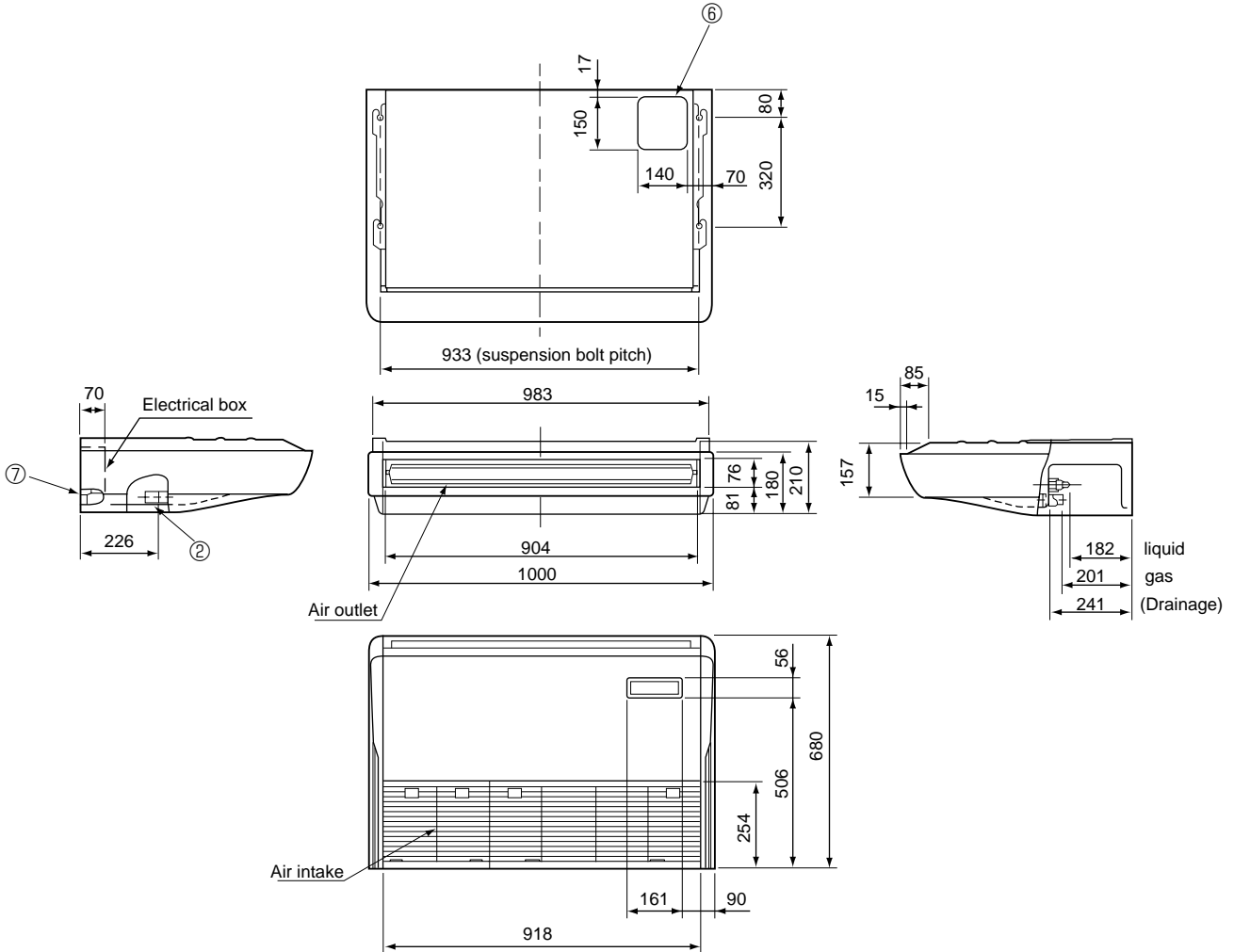
OUTLINES AND DIMENSIONS

INDOOR UNIT
PCA-RP50GA
PCH-P50GAH

Unit : mm

NOTES:

1. Use M10 or W3/8 screws for anchor bolt.
2. When optional drain lift-up mechanism is installed, always provide upward piping for refrigerant piping.



- ① Drainage pipe connection (26mm I.D.)
- ② Drainage pipe connection (for the left arrangement)
- ③ Knock out hole for left drain-piping arrangement
- ④ Refrigerant-pipe connection (gas pipe side/flared connection)
- ⑤ Refrigerant-pipe connection (liquid pipe side/flared connection)
- ⑥ Knock out hole for upper drain pipe arrangement
- ⑦ Knock out hole for left drain pipe arrangement
- ⑧ Knock out hole for wiring arrangement

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

Available pipe size

	RP50	P50
⑤ LIQUID SIDE	φ6.35 ○	—
	φ9.52	φ9.52 ○
④ GAS SIDE	φ12.7 ○	—
	φ15.88	φ15.88 ○

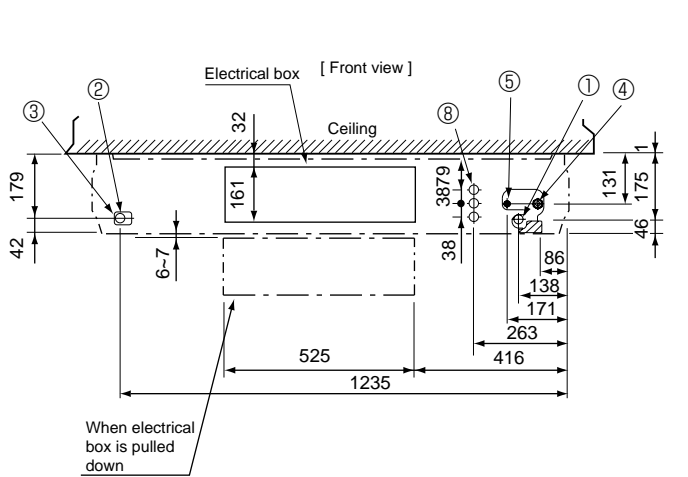
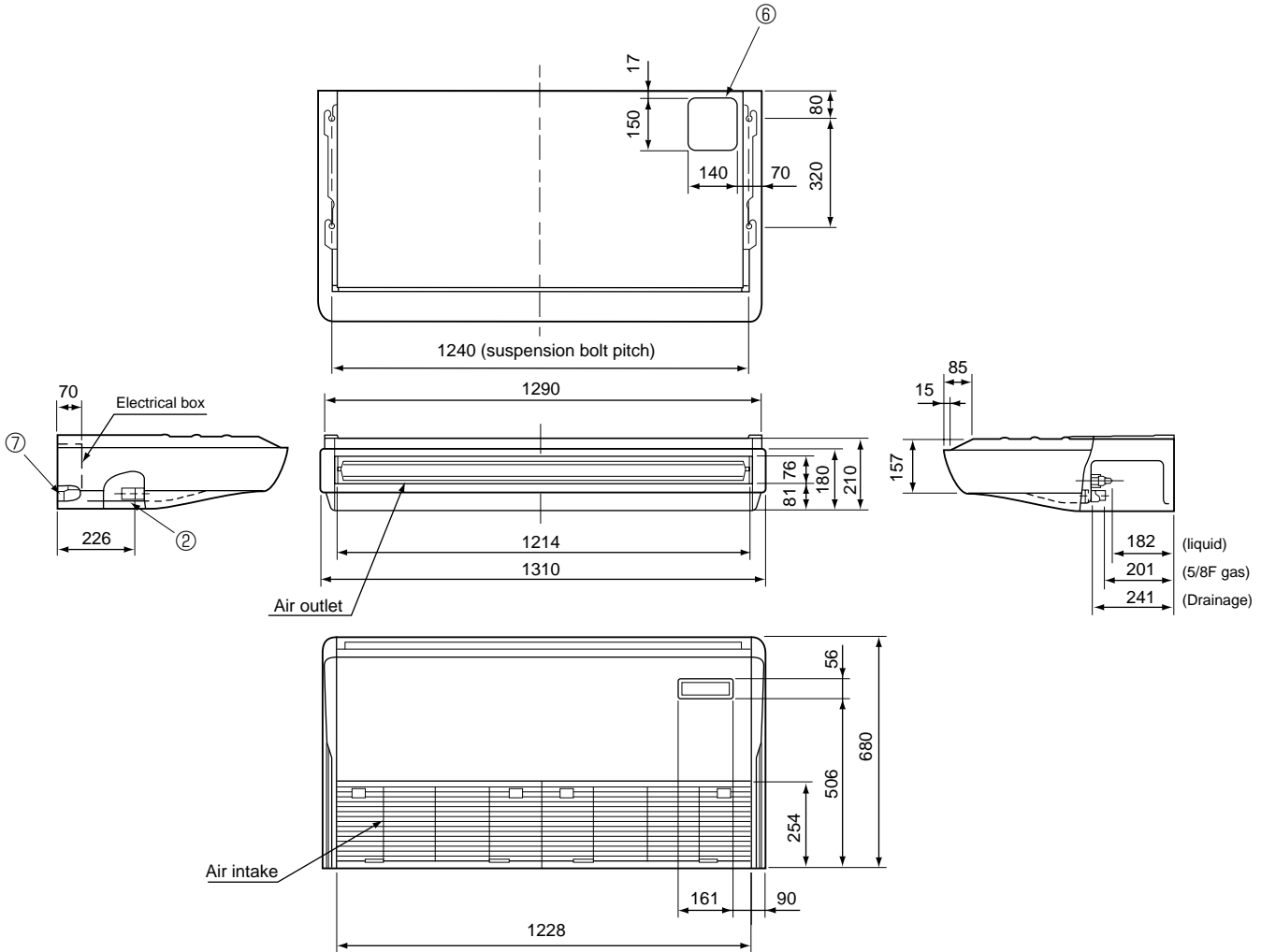
○ : Factory flare nut attachment to the heat-exchanger.

**PCA-RP60GA
PCA-RP71GA
PCH-P60GAH
PCH-P71GAH**

Unit : mm

NOTES:

1. Use M10 or W3/8 screws for anchor bolt.
2. When optional drain lift-up mechanism is installed, always provide upward piping for refrigerant piping.



- ① Drainage pipe connection (26mm I.D.)
- ② Drainage pipe connection (for the left arrangement)
- ③ Knock out hole for left drain-piping arrangement
- ④ Refrigerant-pipe connection (gas pipe side/flared connection)
- ⑤ Refrigerant-pipe connection (liquid pipe side/flared connection)
- ⑥ Knock out hole for upper drain pipe arrangement
- ⑦ Knock out hole for left drain pipe arrangement
- ⑧ Knock out hole for wiring arrangement

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

Available pipe size

	RP60	RP71,P60,P71
⑤ LIQUID SIDE	φ6.35	—
	φ9.52 ○	φ9.52 ○
④ GAS SIDE	—	—
	φ15.88 ○	φ15.88 ○

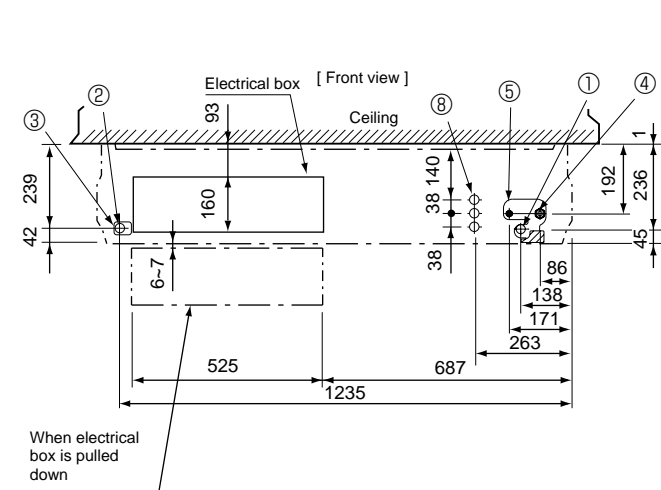
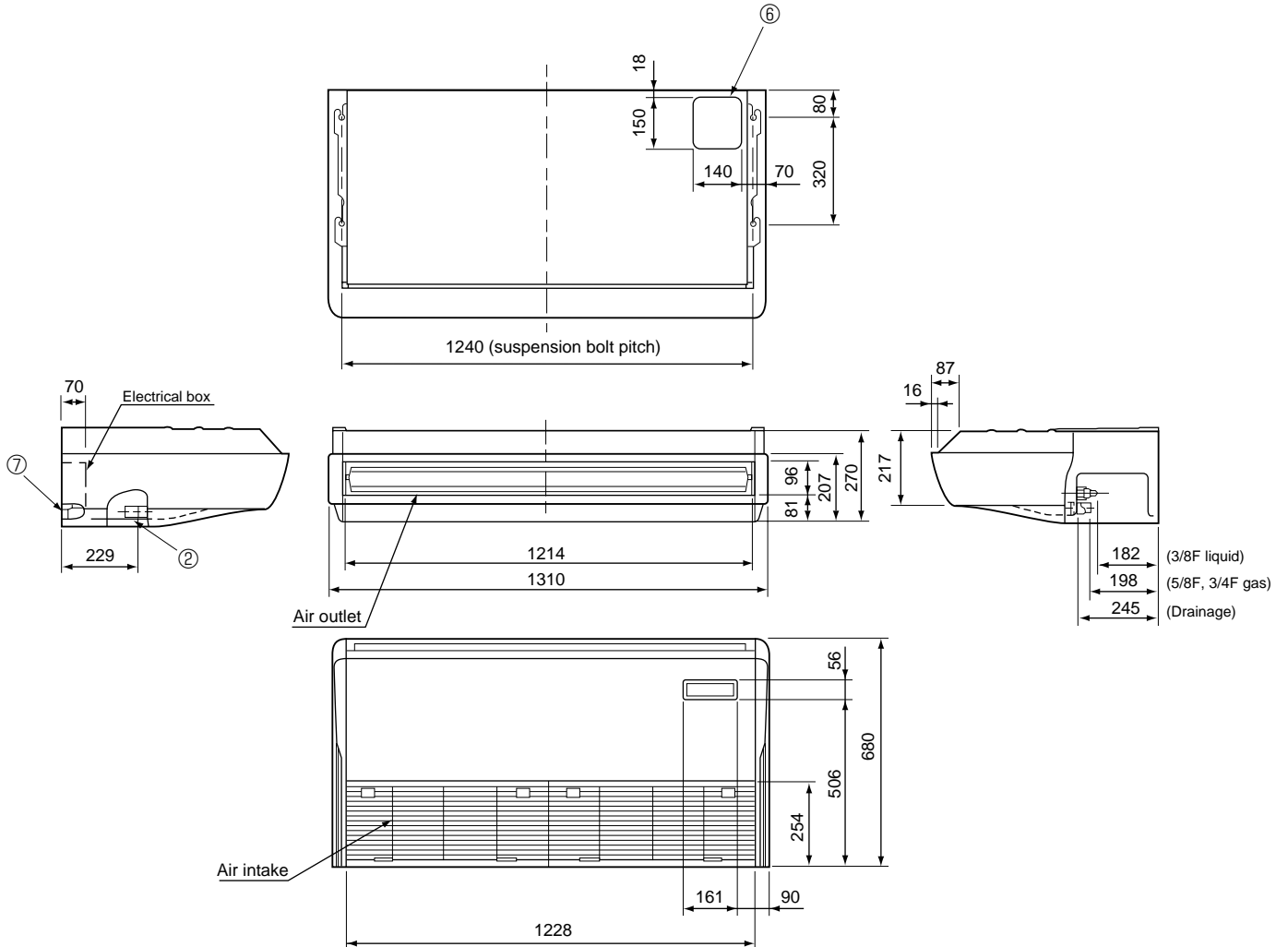
○ : Factory flare nut attachment to the heat-exchanger.

PCA-RP100GA
PCH-P100GAH

Unit : mm

NOTES:

1. Use M10 or W3/8 screws for anchor bolt.
2. When optional drain lift-up mechanism is installed, always provide upward piping for refrigerant piping.



- ① Drainage pipe connection (26mm I.D.)
- ② Drainage pipe connection (for the left arrangement)
- ③ Knock out hole for left drain-piping arrangement
- ④ Refrigerant-pipe connection (gas pipe side/flared connection)
- ⑤ Refrigerant-pipe connection (liquid pipe side/flared connection)
- ⑥ Knock out hole for upper drain pipe arrangement
- ⑦ Knock out hole for left drain pipe arrangement
- ⑧ Knock out hole for wiring arrangement

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

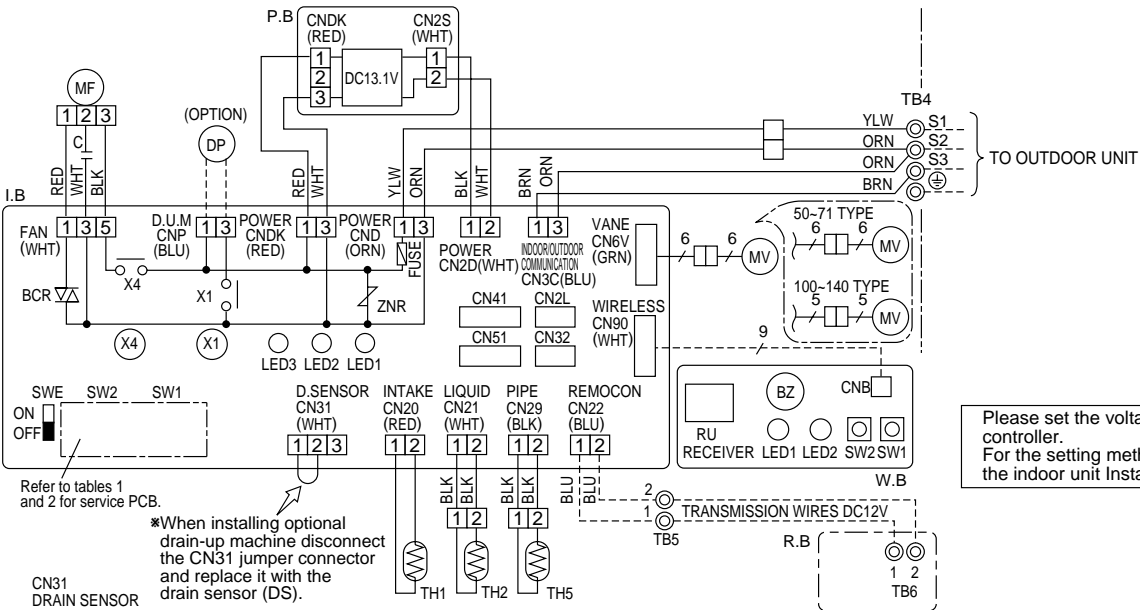
Available pipe size

	RP100	P100
⑤ LIQUID SIDE	—	—
	φ9.52 ○	φ9.52 ○
④ GAS SIDE	—	—
	φ15.88 ○	—
	φ19.05 ○	φ19.05 ○

○ :Factory flare nut attachment to the heat-exchanger.

PCA-RP50GA PCA-RP60GA PCA-RP71GA
 PCA-RP100GA PCA-RP125GA PCA-RP140GA
 PCH-P50GAH PCH-P60GAH PCH-P71GAH
 PCH-P100GAH PCH-P125GAH PCH-P140GAH

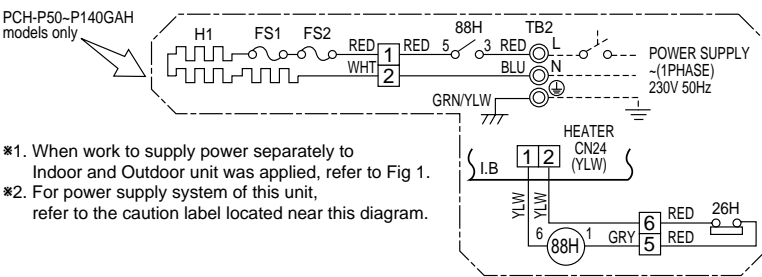
SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
P.B	INDOOR POWER BOARD	MF	FAN MOTOR	W.B	WIRELESS REMOTE CONTROLLER BOARD(OPTION)
I.B	INDOOR CONTROLLER BOARD	MV	VANE MOTOR	RU	RECEIVING UNIT
FUSE	FUSE (T6.3A/250V)	DP	DRAIN-UP MACHINE (OPTION)	BZ	BUZZER
ZNR	VARIABLE RESISTOR	DS	DRAIN SENSOR (OPTION)	LED1	LED(RUN INDICATOR)
CN2	CONNECTOR(LOSSNAY)	TB2	TERMINAL BLOCK (HEATER) *PCH-P-GAH models only or option for PCA-RP-GA models.	LED2	LED(HOT ADJUST)
CN32	CONNECTOR(REMOTE SWITCH)	TB4	TERMINAL BLOCK(INDOOR/OUTDOOR CONNECTING LINE)	SW1	SWITCH(HEATING ON/OFF)
CN41	CONNECTOR(HA TERMINAL-A)	TB5,TB6	TERMINAL BLOCK(REMOTE CONTROLLER TRANSMISSION LINE)	SW2	SWITCH(COOLING ON/OFF)
CN51	CONNECTOR(CENTRALLY CONTROL)	TH1	ROOM TEMP.THERMISTOR (0℃/15kΩ, 25℃/5.4kΩ DETECT)	FS1,2	THERMAL FUSE(98℃:10A/50GAH/117℃:16A:100GAH 110℃:16A/60,71,125,140GAH)
SW1	SWITCH (MODEL SELECTION) *See Table 1.	TH2	PIPE TEMP.THERMISTOR/LIQUID (0℃/15kΩ, 25℃/5.4kΩ DETECT)	H1	HEATER
SW2	SWITCH (CAPACITY CODE) *See Table 2.	TH5	COND.EVA.TEMP.THERMISTOR (0℃/15kΩ, 25℃/5.4kΩ DETECT)	26H	HEATER THERMAL SWITCH
SWE	SWITCH(EMERGENCY OPERATION)	R.B	WIRED REMOTE CONTROLLER BOARD	88H	HEATER CONTACTOR
X1	RELAY(DRAIN PUMP)				
X4	RELAY(FAN MOTOR)				
BCR	FAN CONTROL ELEMENT				
LED1	POWER SUPPLY(I.B)				
LED2	POWER SUPPLY(R.B)				
LED3	TRANSMISSION(INDOOR-OUTDOOR)				
C	CAPACITOR(FAN MOTOR)				



Please set the voltage using the remote controller. For the setting method, please refer to the indoor unit Installation Manual.

Refer to tables 1 and 2 for service PCB.
 *When installing optional drain-up machine disconnect the CN31 jumper connector and replace it with the drain sensor (DS).
 When installing drain-up machine (Optional part).

[Servicing]
 Fasten terminal of the terminal board "TB4" equips lock system. To remove the fastened terminal, pull it while pressing the protruding portion (locking lever) of the terminal. The fastened terminal protruding portion should face upward.



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

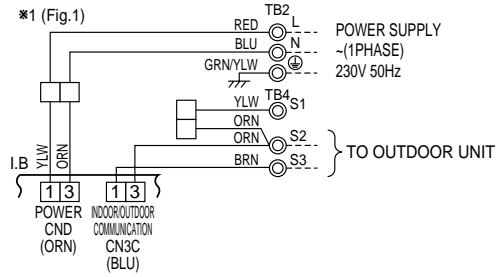


Table 1

MODELS	SW1				
	1	2	3	4	5
PCA-RP-GA	ON	ON	ON	ON	ON
PCH-P-GAH	OFF	OFF	OFF	OFF	OFF

Table 2

MODELS	Service board					MODELS	Service board				
	1	2	3	4	5		1	2	3	4	5
PCA-RP50GA	ON	ON	ON	ON	ON	PCA-RP100GA	ON	ON	ON	ON	ON
PCH-P50GAH	OFF	OFF	OFF	OFF	OFF	PCH-P100GAH	OFF	OFF	OFF	OFF	OFF
PCA-RP60GA	ON	ON	ON	ON	ON	PCA-RP125GA	ON	ON	ON	ON	ON
PCH-P60GAH	OFF	OFF	OFF	OFF	OFF	PCH-P125GAH	OFF	OFF	OFF	OFF	OFF
PCA-RP71GA	ON	ON	ON	ON	ON	PCA-RP140GA	ON	ON	ON	ON	ON
PCH-P71GAH	OFF	OFF	OFF	OFF	OFF	PCH-P140GAH	OFF	OFF	OFF	OFF	OFF

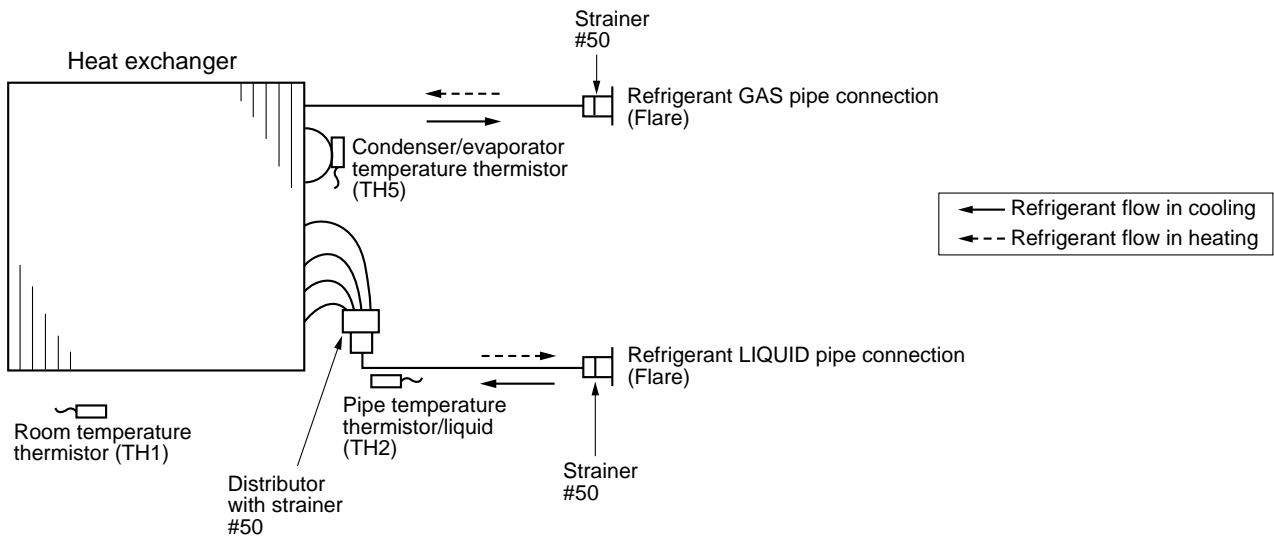
- NOTES:
- Since the outdoor side electric wiring may change be sure to check the outdoor unit electric wiring for servicing.
 - Indoor and outdoor connecting wires are made with polarities, make wiring matching terminal numbers (S1, S2, S3).
 - Make sure that the main power supply of the booster heater is independent.
 - Symbols used in wiring diagram above are, □ : Connector, ⊙ : Terminal (block).

8

REFRIGERANT SYSTEM DIAGRAM

PCA-RP50GA PCA-RP60GA PCA-RP71GA
 PCA-RP100GA PCA-RP125GA PCA-RP140GA
 PCH-P50GAH PCH-P60GAH PCH-P71GAH
 PCH-P100GAH PCH-P125GAH PCH-P140GAH

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.

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"> ① Consider 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. ② Reset error code logs and restart the unit after finishing service. ③ There is no abnormality in electrical components, controller boards, and remote controller.
	Not logged	<ul style="list-style-type: none"> ① Recheck the abnormal symptom. ② Identify the cause of the inferior phenomenon and take a corrective action according to "TROUBLESHOOTING BY INFERIOR PHENOMENA" (9-3). ③ Continue to operate unit for the time being if the cause is not ascertained. ④ There 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 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 <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 cablex 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,</p> <p>[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>

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 9-7-2. <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 • When LED1 is lit. <ul style="list-style-type: none"> 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 	<p>Check indoor/outdoor unit connecting wire for connection failure.</p> <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.
(3)Upward/downward vane performance failure	<ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> • Defective vane motor • Breaking of wire or connection failure of connector • Up/down vane setting is "No vanes". ③ Upward/downward vane does not work. <ul style="list-style-type: none"> • The vane is set to fixed position. 	<ul style="list-style-type: none"> ① Normal operation (The vane is set to horizontal regardless of remote control.) ② Check ② (left). <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> ① Replace batteries of wireless remote controller. ②~④ Check contact failure of each connector. If no problems are found of connector, replace indoor controller board. When the same trouble occurs even if indoor controller board is replaced, replace wireless remote controller board.

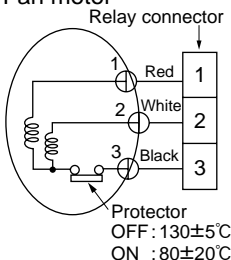
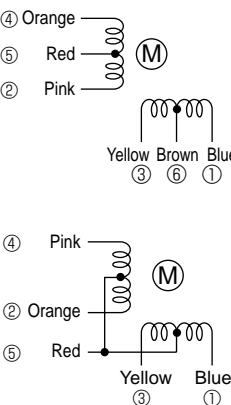
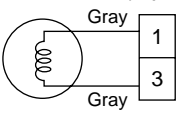
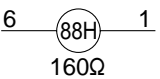
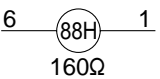
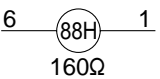
9-4. When wired remote controller or indoor unit micro computer troubles

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) in 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 at most. It may cause heat exchanger frosting in the indoor unit.
 - (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 manually and slowly.

9-5. HOW TO CHECK THE PARTS

PCH-P50 / 60 / 71 / 100 / 125 / 140GAH

PCA-RP50 / 60 / 71 / 100 / 125 / 140GA

Parts name	Check points																							
Room temperature thermistor (TH1) Pipe temperature thermistor (TH2) Condenser/evaporator temperature thermistor (TH5)	<p>Disconnect the connector then measure the resistance using a tester. (Surrounding temperature 10°C~30°C)</p> <table border="1"> <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> <p>(Refer to the next page for a detail.)</p>	Normal	Abnormal	4.3kΩ~9.6kΩ	Open or short																			
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4.3kΩ~9.6kΩ	Open or short																							
<p>Fan motor</p> 	<p>Measure the resistance between the terminals using a tester. (Winding temperature 20°C)</p> <table border="1"> <thead> <tr> <th rowspan="2">Motor terminal or Relay connector</th> <th colspan="4">Normal</th> <th rowspan="2">Abnormal</th> </tr> <tr> <th>50</th> <th>60, 71</th> <th>100</th> <th>125, 140</th> </tr> </thead> <tbody> <tr> <td>Red-Black</td> <td>70.6Ω</td> <td>45.0Ω</td> <td>43.7Ω</td> <td>20.4Ω</td> <td rowspan="2">Open or short</td> </tr> <tr> <td>White-Black</td> <td>69.6Ω</td> <td>44.8Ω</td> <td>55.3Ω</td> <td>20.7Ω</td> </tr> </tbody> </table>	Motor terminal or Relay connector	Normal				Abnormal	50	60, 71	100	125, 140	Red-Black	70.6Ω	45.0Ω	43.7Ω	20.4Ω	Open or short	White-Black	69.6Ω	44.8Ω	55.3Ω	20.7Ω		
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<p>Vane motor</p> 	<table border="1"> <thead> <tr> <th rowspan="2">Connector</th> <th colspan="2">Normal</th> <th rowspan="2">Abnormal</th> </tr> <tr> <th>50</th> <th>60, 71</th> </tr> </thead> <tbody> <tr> <td>Brown-Yellow</td> <td rowspan="4">186~214Ω</td> <td rowspan="4">140~160Ω</td> <td rowspan="4">Open or short</td> </tr> <tr> <td>Brown-Blue</td> </tr> <tr> <td>Red-Orange</td> </tr> <tr> <td>Red-Pink</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th rowspan="2">Connector</th> <th>Normal</th> <th rowspan="2">Abnormal</th> </tr> <tr> <th>100, 125, 140</th> </tr> </thead> <tbody> <tr> <td>Brown-Yellow</td> <td rowspan="4">140~160Ω</td> <td rowspan="4">Open or short</td> </tr> <tr> <td>Brown-Blue</td> </tr> <tr> <td>Red-Orange</td> </tr> <tr> <td>Red-Pink</td> </tr> </tbody> </table>	Connector	Normal		Abnormal	50	60, 71	Brown-Yellow	186~214Ω	140~160Ω	Open or short	Brown-Blue	Red-Orange	Red-Pink	Connector	Normal	Abnormal	100, 125, 140	Brown-Yellow	140~160Ω	Open or short	Brown-Blue	Red-Orange	Red-Pink
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Heater (Only PCH)	<p>Measure the resistance of each heater element by using a tester. (Surrounding temperature 20°C)</p> <table border="1"> <thead> <tr> <th colspan="4">Normal</th> <th rowspan="2">Abnormal</th> </tr> <tr> <th>50</th> <th>60, 71</th> <th>100</th> <th>125,140</th> </tr> </thead> <tbody> <tr> <td>13.7Ω</td> <td>9.1Ω</td> <td>7.1Ω</td> <td>6.4Ω</td> <td rowspan="2">Open or short</td> </tr> <tr> <td>0.467kW 80V</td> <td>0.7kW 80V</td> <td>0.9kW 80V</td> <td>1.0kW 80V</td> </tr> </tbody> </table>	Normal				Abnormal	50	60, 71	100	125,140	13.7Ω	9.1Ω	7.1Ω	6.4Ω	Open or short	0.467kW 80V	0.7kW 80V	0.9kW 80V	1.0kW 80V					
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<p>Drain-up mechanism (Option)</p> 	<p>Measure the resistance between the terminals using a tester. (Winding temperature 20°C)</p> <table border="1"> <thead> <tr> <th>Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>195Ω</td> <td>Open or short</td> </tr> </tbody> </table>	Normal	Abnormal	195Ω	Open or short																			
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Contactor (Only PCH)	<p>Measure the resistance between the terminals using a tester.</p> <table border="1"> <thead> <tr> <th>Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>50~140</td> <td rowspan="2">Open or short</td> </tr> <tr> <td>  </td> </tr> </tbody> </table>	Normal	Abnormal	50~140	Open or short																			
Normal	Abnormal																							
50~140	Open or short																							
																								

<Thermistor Characteristic graph>

Thermistor for lower temperature

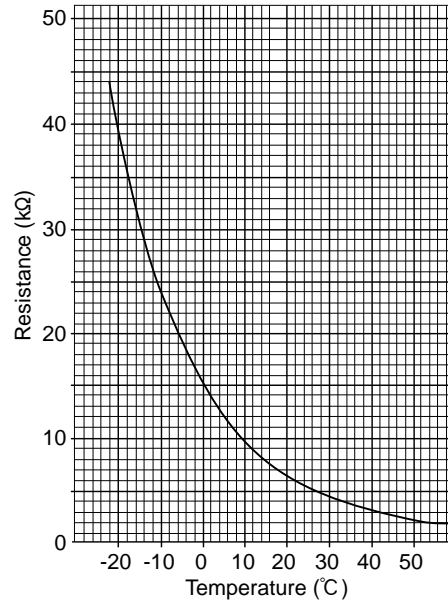
Room temperature thermistor (TH1)
 Pipe temperature thermistor (TH2)
 Condenser/evaporator temperature thermistor (TH5)

Thermistor $R_0 = 15k\Omega \pm 3\%$
 Fixed number of $B = 3480 \pm 2\%$

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

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

< Thermistor for lower temperature >

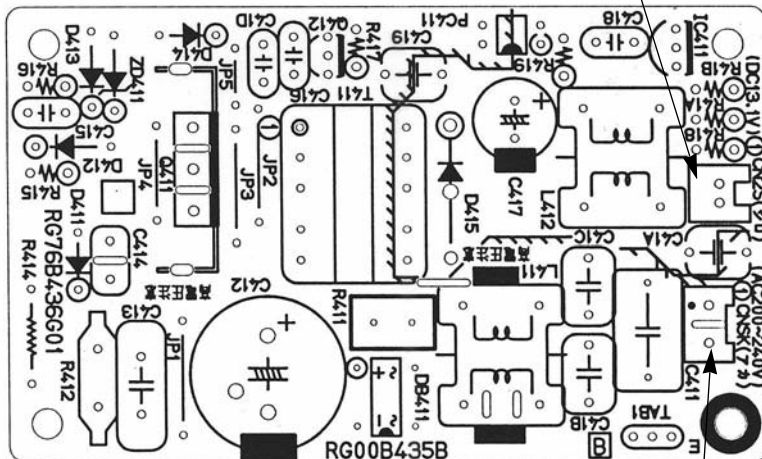


9-6. TEST POINT DIAGRAM

9-6-1. Power board

- PCA-RP50GA PCH-P50GAH
- PCA-RP60GA PCH-P60GAH
- PCA-RP71GA PCH-P71GAH
- PCA-RP100GA PCH-P100GAH
- PCA-RP125GA PCH-P125GAH
- PCA-RP140GA PCH-P140GAH

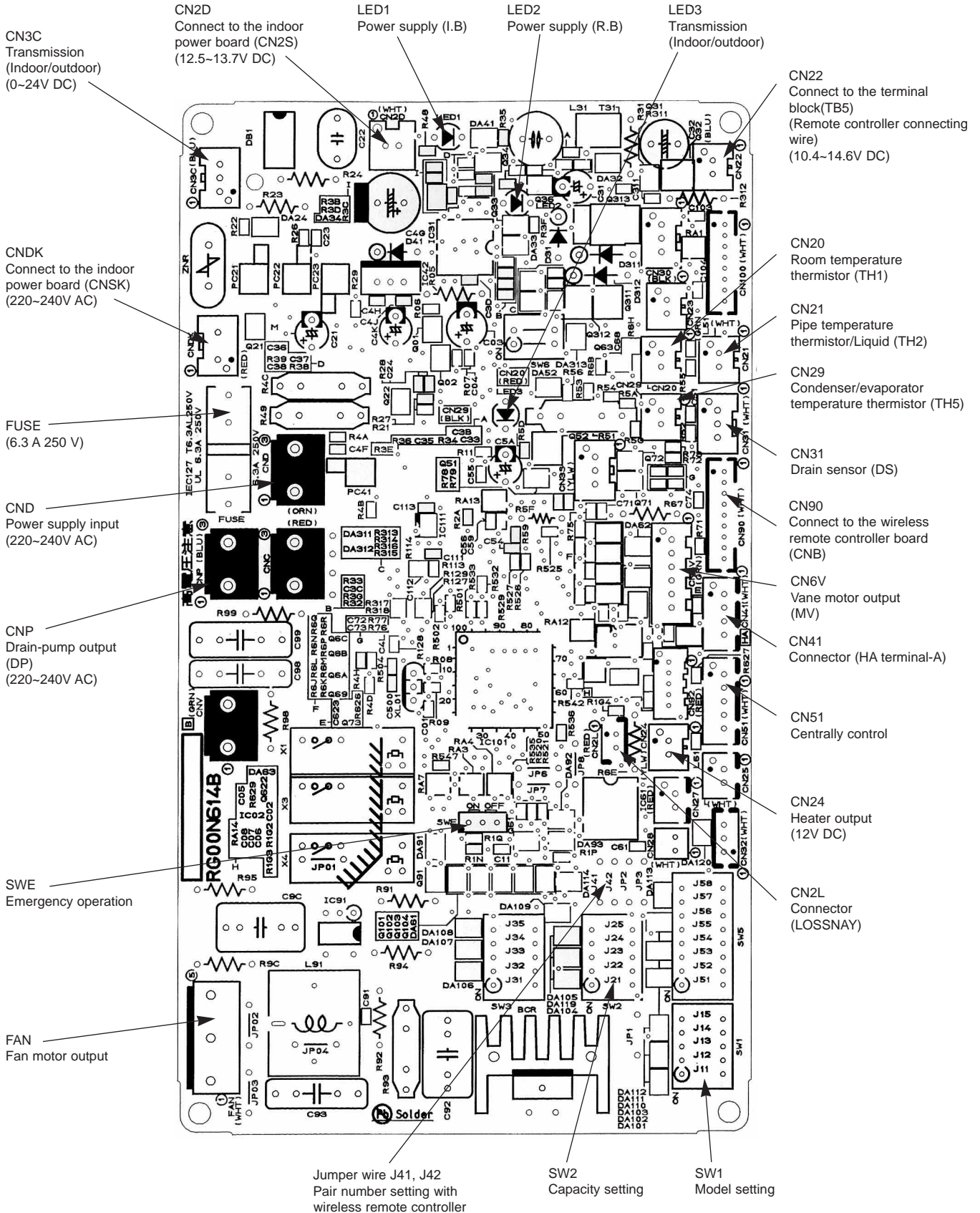
CN2S
 Connect to the indoor controller board (CN2D)
 Between ① to ③ 12.6-13.7V DC (Pin① (+))



CNSK
 Connect to the indoor controller board (CNDK)
 Between ① to ③ 220-240V AC

9-6-2. Indoor controller board

PCA-RP50GA PCA-RP60GA PCA-RP71GA PCA-RP100GA PCA-RP125GA PCA-RP140GA
 PCH-P50GAH PCH-P60GAH PCH-P71GAH PCH-P100GAH PCH-P125GAH PCH-P140GAH



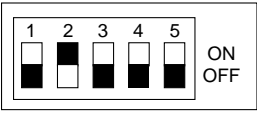


















9-7. FUNCTIONS OF DIP SWITCH AND JUMPER WIRE

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

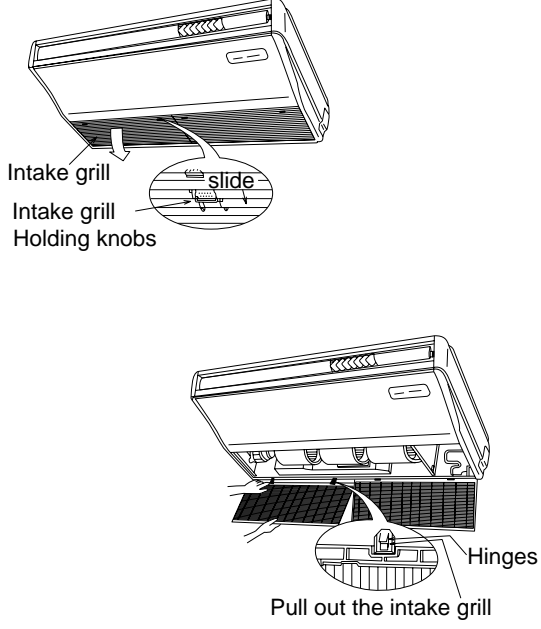
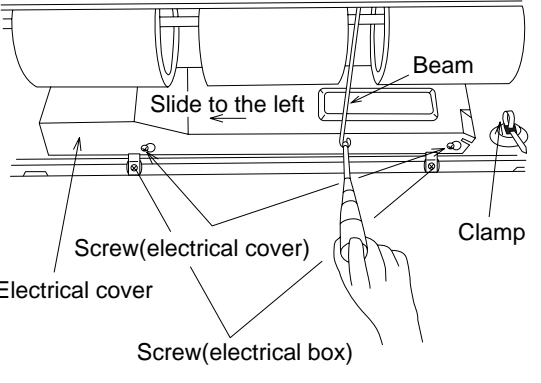
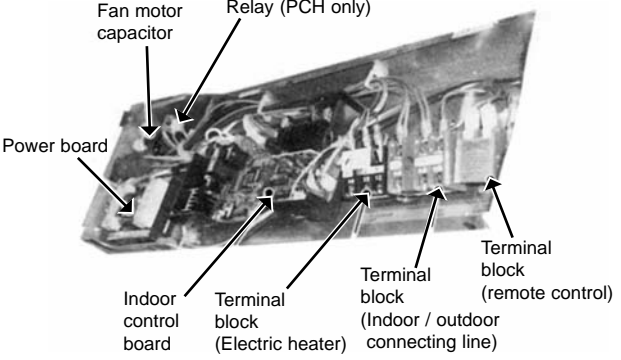
SW1 and SW2 are equipped only for service parts.

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-RP50GA PCH-P50GAH</td> <td>  </td> </tr> <tr> <td>PCA-RP60GA PCH-P60GAH</td> <td>  </td> </tr> <tr> <td>PCA-RP71GA PCH-P71GAH</td> <td>  </td> </tr> <tr> <td>PCA-RP100GA PCH-P100GAH</td> <td>  </td> </tr> <tr> <td>PCA-RP125GA PCH-P125GAH</td> <td>  </td> </tr> <tr> <td>PCA-RP140GA PCH-P140GAH</td> <td>  </td> </tr> </tbody> </table>	MODELS	Service board	PCA-RP50GA PCH-P50GAH		PCA-RP60GA PCH-P60GAH		PCA-RP71GA PCH-P71GAH		PCA-RP100GA PCH-P100GAH		PCA-RP125GA PCH-P125GAH		PCA-RP140GA PCH-P140GAH					
MODELS	Service board																			
PCA-RP50GA PCH-P50GAH																				
PCA-RP60GA PCH-P60GAH																				
PCA-RP71GA PCH-P71GAH																				
PCA-RP100GA PCH-P100GAH																				
PCA-RP125GA PCH-P125GAH																				
PCA-RP140GA PCH-P140GAH																				
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	○																			

PCH-P71GAH, PCA-RP71GA

OPERATING PROCEDURE	PHOTOS&ILLUSTRATIONS
<p>1. Removing the air intake grille</p> <ol style="list-style-type: none"> (1) Slide the intake grille holding 2 knobs backward to open the intake grille. (2) When the intake grille left open, push the stoppers on the rear 2 hinges to pull out the intake grille. 	<p>Figure 1</p> 
<p>2. Removing the electrical box</p> <ol style="list-style-type: none"> (1) Remove the air intake grille. (See the figure 1) (2) Remove the screw from the beam and remove the beam. (3) Remove the screws from the electrical cover, and remove the electrical cover. (4) Disconnect CN6V, CN21 and CN29. (5) Remove the screws from the electrical box and pull out the electrical box. <p><Electrical parts in the electrical box> Terminal block (for indoor / outdoor connecting line) Terminal block (for electric heater : PCH only) Terminal block (for remote controller) Fan motor capacitor Indoor control board Relay (PCH only) Power board</p>	<p>Figure 2</p>  <p>Photo 1</p> 

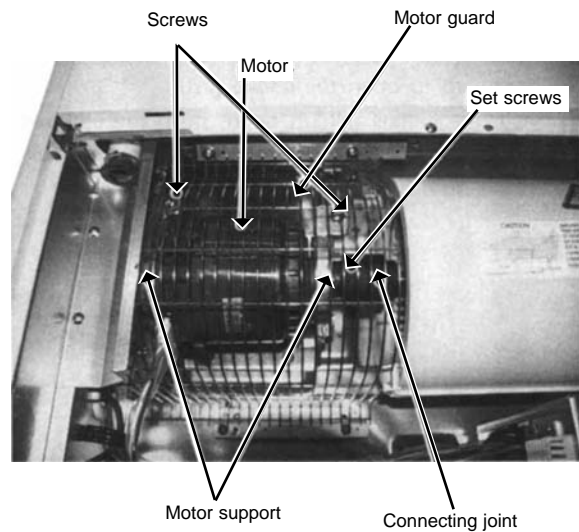
OPERATING PROCEDURE

3. Removing the fan motor

- (1) Remove the intake grille. (See the figure 1)
- (2) Disconnect the fan motor connector.
- (3) Remove screws for removing the motor guard.
- (4) Remove screws for removing the fan guard.
- (5) Remove the screw for removing the motor support at both left and right side.
- (6) Loosen the set screws at the fan motor side of the connecting joint.
- (7) Slide the fan motor to the left side and pull it out.

PHOTOS&ILLUSTRATIONS

Photo 2



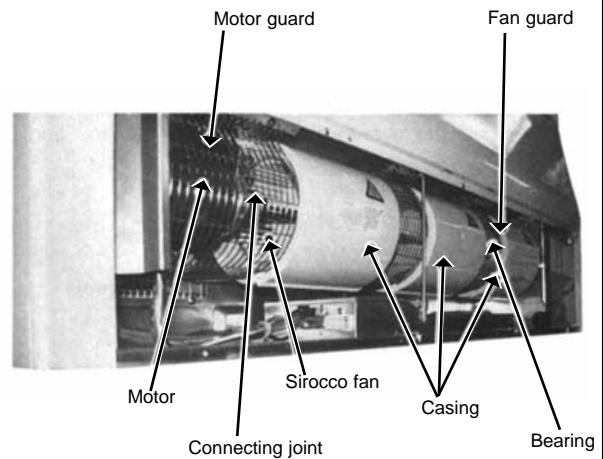
4. Removing the sirocco fan

- (1) Remove the air intake grille. (See the figure 1)
- (2) Remove 1 beam.
- (3) Remove screws for removing the motor guard.
- (4) Remove screws for removing the fan guard.
- (5) Remove the lower casing while pressing the stoppers at upper side of the casing.
- (6) Loosen the set screws at the connecting joint.
- (7) Remove the sirocco fan and shaft together by sliding the shaft to the left.

(Note)

Make sure that the upper side casing is snapped to the fan plate securely with catch.

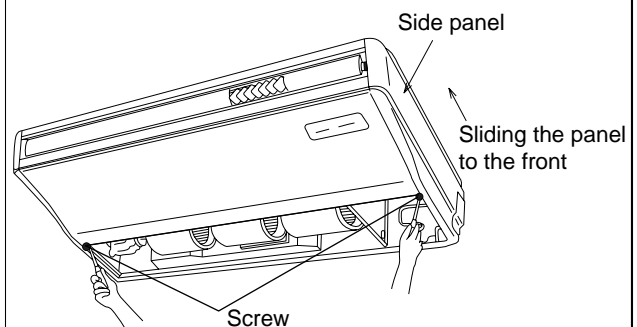
Photo 3



5. Removing the side panel

- (1) Remove the air intake grille. (See the figure 1)
- (2) Remove the screw from the side panel, and remove the side panel by sliding the panel to the front.

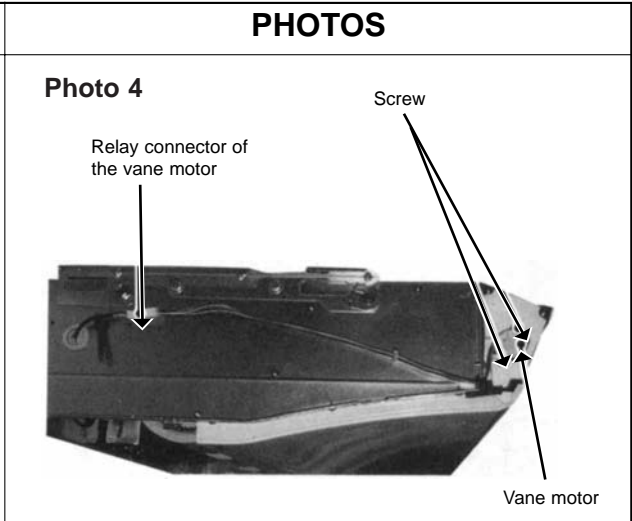
Figure 3



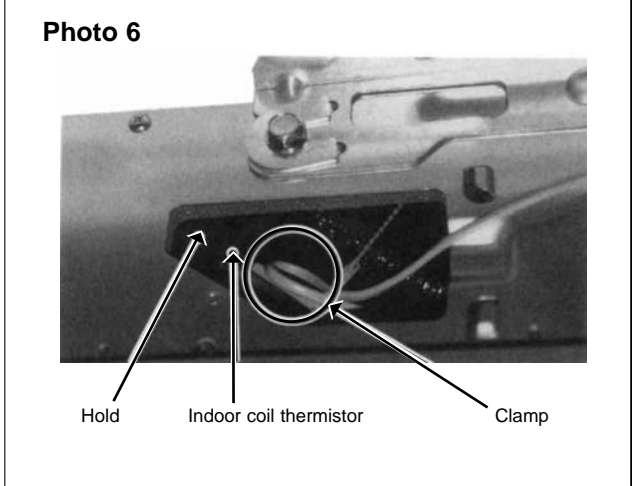
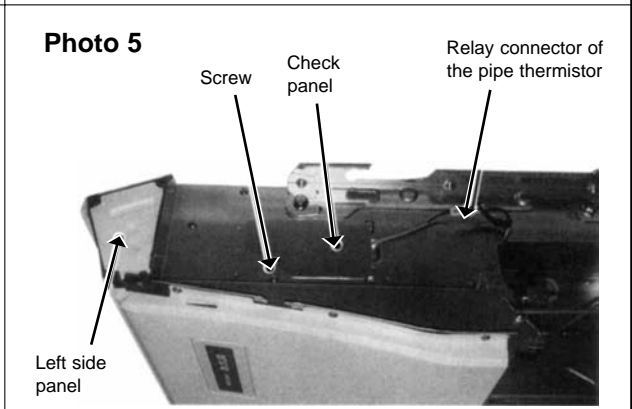


OPERATING PROCEDURE

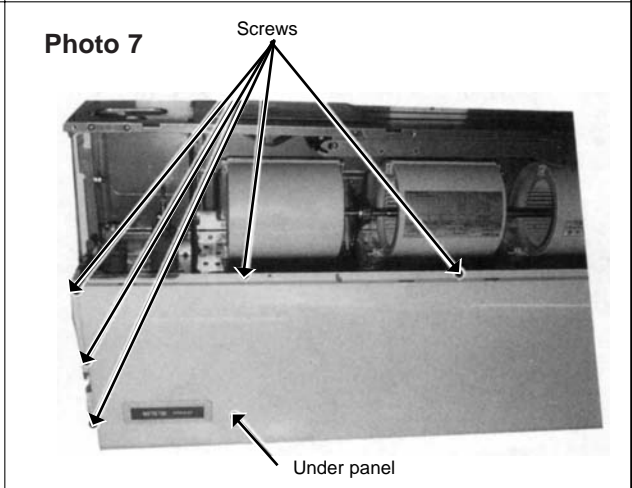
6. Removing the vane motor
(1) Remove the air intake grille. (See the figure 1)
(2) Remove the left side panel. (See the figure 3)
(3) Remove the relay connector of vane motor.
(4) Remove the electrical box.
(5) Remove the screws of vane motor, then remove vane motor.
(Note)
Connect the lead wires and connectors properly and place them in the proper position so that the wires are not pinched by other parts.



7. Removing the Indoor coil thermistor
(1) Remove the air intake grille. (See the figure 1)
(2) Remove the right side panel. (See the figure 3)
(3) Remove the relay connector of the pipe thermistor.
(4) Remove the screw, and remove the check panel.
(5) Extract the indoor coil thermistor from the holder.
<Caution for the installation>
There is a possibility for the short circuit when connector gets wet by water through the thermistor lead wire. Therefore, lead wire of the indoor coil thermistor should be tied as shown in the photo 6.



8. Removing the Under panel
(1) Remove the air intake grille. (See the figure 1)
(2) Remove the beam.
(3) Remove the side panel (right and left). (See the figure 3)
(4) Remove the 9 screws of the under panel, then remove the under panel.
* Weight of the under panel : approx. 2kg.



OPERATING PROCEDURE

9. Removing the drain pan

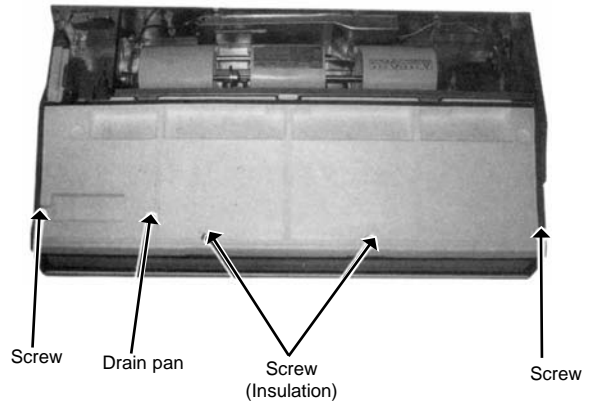
- (1) Remove the air intake grille. (See the figure 1)
- (2) Remove the beam.
- (3) Remove the side panels of right and left. (See the figure 3)
- (4) Remove the under panel. Remove the screws of the right and left side drain pan.
- (5) Remove the 2 insulations in centre of the drain pan, and after removing the 2 screws, remove the drain pan.

(Note)

Please aware that there might be drain left in the drain pan when you remove the drain pump (option).

PHOTOS

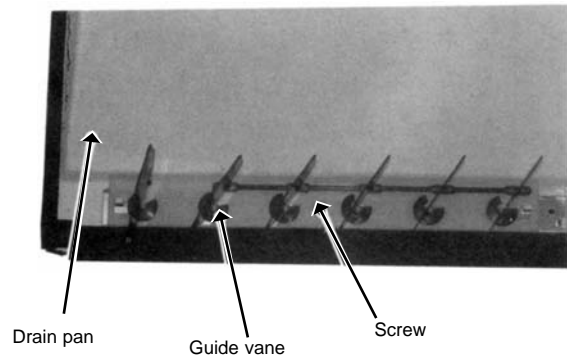
Photo 8



10. Removing the guide vane

- (1) Remove the intake grille. (See the figure 1)
- (2) Remove the beam.
- (3) Remove the side panels on right and left. (See the figure 3)
- (4) Remove the under panel. (See the photo 7)
- (5) Remove the drain pan. (See the photo 8)
- (6) Remove the screw from the guide vane, then remove the guide vane.

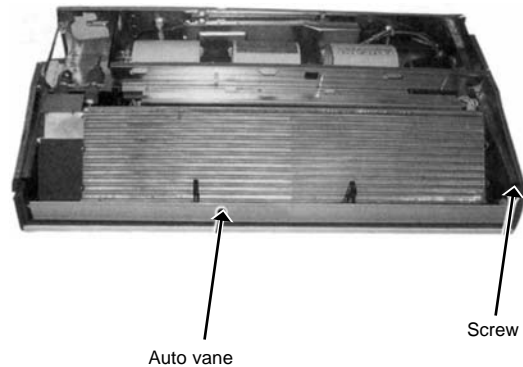
Photo 9



11. Removing the Auto vane

- (1) Remove the intake grille. (See the figure 1)
- (2) Remove the left side panel. (See the figure 3)
- (3) Remove the left side box.
- (4) Remove the under panel.
- (5) Remove the screw from the auto vane.
- (6) Slide the auto vane to the right side and pull the auto vane out.

Photo 10



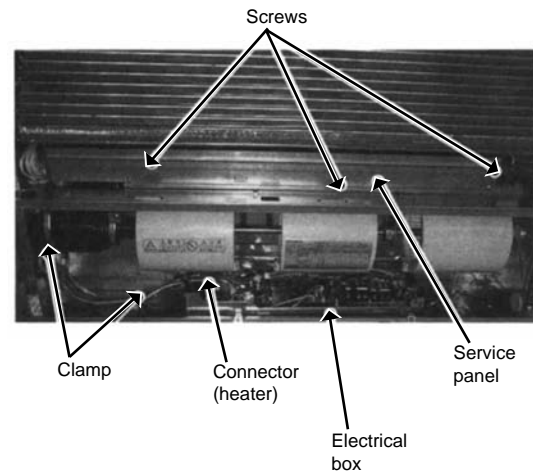
OPERATING PROCEDURE

12. Removing the electric heater. (PCH only)

- (1) Remove the air intake grille. (See the figure 1)
- (2) Remove the beam.
- (3) Remove the electrical box cover and disconnect the connector (6P red) of the heater.
- (4) Loosen 2 clamps for the heater lead wires.
- (5) Remove the side panel (right and left). (See the figure 3)
- (6) Remove the under panel. (See the photo 7)
- (7) Remove the drain pan. (See the photo 8)
- (8) Remove the 3 screws from the service panel.
- (9) Pull out the heater with the service panel.

PHOTOS

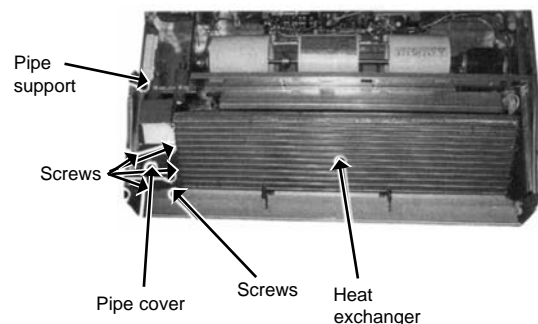
Photo 11



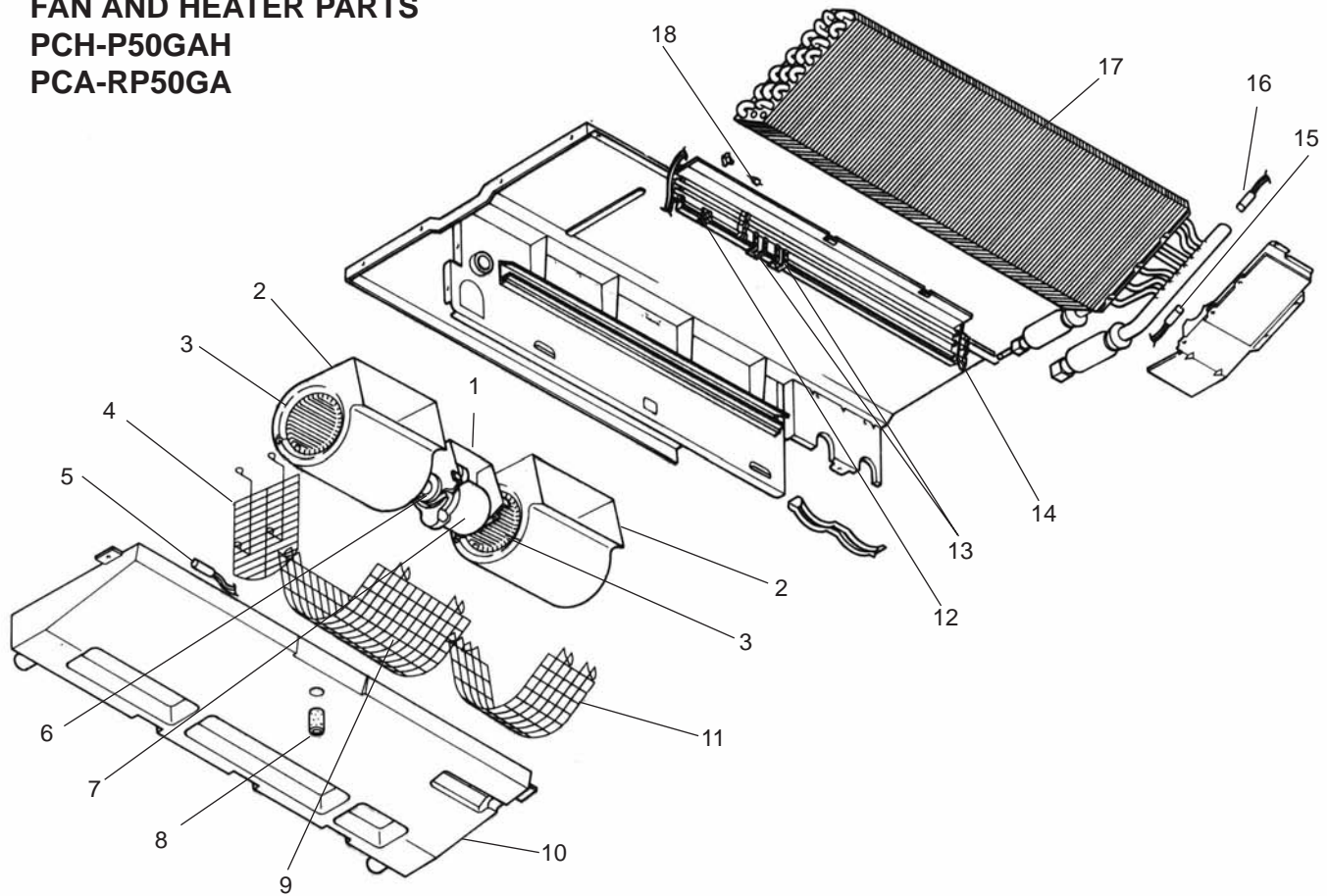
13. Removing the heat exchanger.

- (1) Remove the air intake grille. (See the figure 1)
 - (2) Remove the beam.
 - (3) Remove the side panel (right and left). (See the figure 3)
 - (4) Disconnect the relay connector of the pipe thermistor.
 - (5) Remove the under panel. (See the photo 7)
 - (6) Remove the drain pan. (See the photo 8)
 - (7) Unscrew the screw of the pipe cover, and remove the pipe cover.
 - (8) Unscrew the screw of the pipe support, and remove the pipe support.
 - (9) Unscrew the screw of the heat exchanger, and remove the heat exchanger.
- Remove the heat exchanger with care. Since this is quite heavy, removing work should be done with more than 2 people.
- *Weight of heat exchanger : approx. 5.3kg

Photo 12

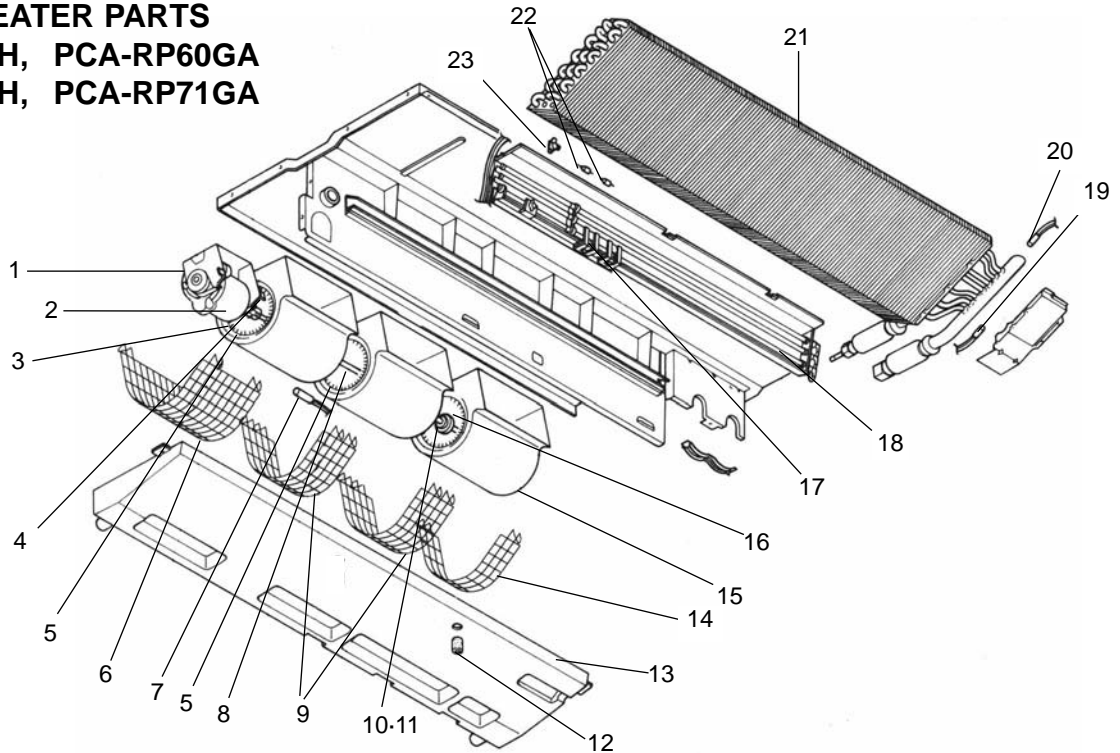


FAN AND HEATER PARTS
PCH-P50GAH
PCA-RP50GA



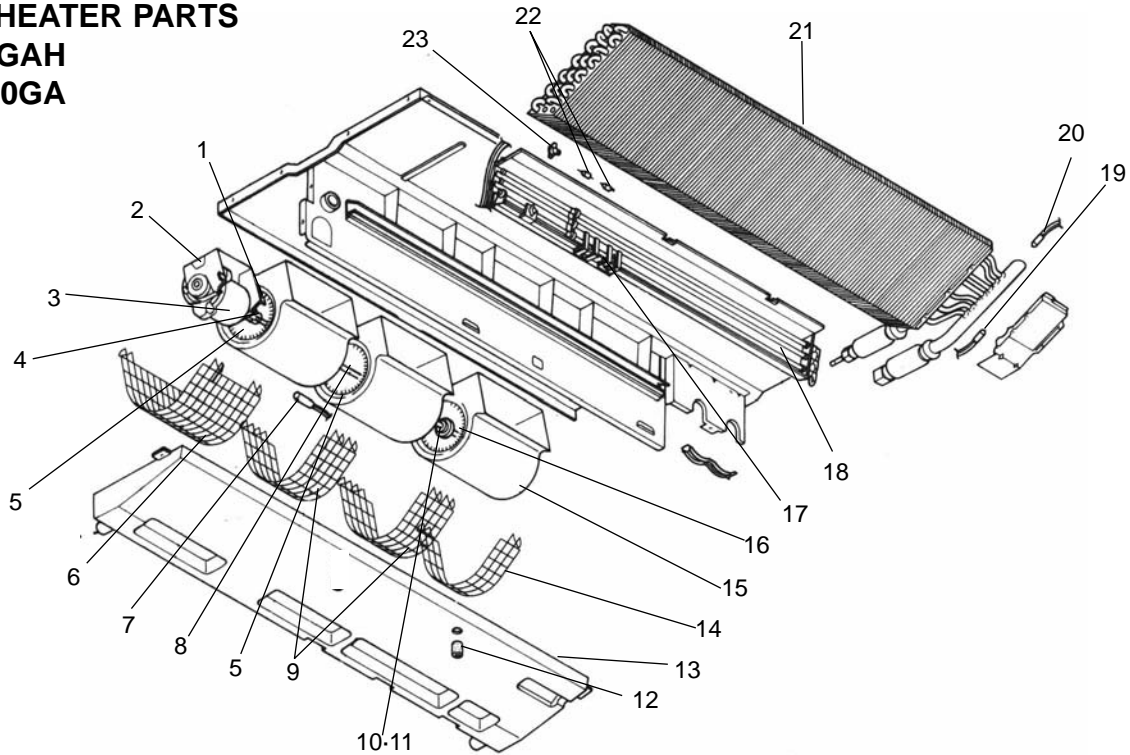
No.	Parts No.	Parts Name	Specifications	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Unit	Amount
				PCH- P50GAH	PCA- RP50GA					
1	R01 17J 130	MOTOR LEG		1	1					
2	R01 17J 110	CASING		2	2					
3	R01 17J 114	SIROCCO FAN		2	2					
4	T7W 19J 675	FAN GUARD		1	1					
5	R01 E26 202	ROOM TEMPERATURE THERMISTOR		1	1		TH1			
6	R01 43E 126	PIECE (MOTOR)		1	1					
7	R01 17J 220	FAN MOTOR	D09B4P54MS	1	1		MF			
8	R01 17J 524	DRAIN PLUG		1	1					
9	T7W 17J 675	FAN GUARD		1	1					
10	R01 A14 529	DRAIN PAN ASSY		1	1					
11	T7W 18J 675	FAN GUARD		1	1					
12	R01 46K 700	THERMAL SWITCH	OFF:50°C ON:35°C	1			26H			
13	R01 18J 303	INSULATOR		3						
	R01 20J 303	INSULATOR		1						
14	T7W 23J 300	HEATER ELEMENT	80V 466W	3			H1			
15	R01 17J 202	PIPE TEMPERATURE THERMISTOR		1	1		TH2			
16	R01 E27 202	CONDENSER / EVAPORATOR TEMPERATURE THERMISTOR		1	1		TH5			
17	R01 E38 480	HEAT EXCHANGER		1						
	T7W K00 480	HEAT EXCHANGER			1					
18	R01 P02 706	THERMAL FUSE	250V 98°C 10A	1			FS1,2			

FAN AND HEATER PARTS
PCH-P60GAH, PCA-RP60GA
PCH-P71GAH, PCA-RP71GA



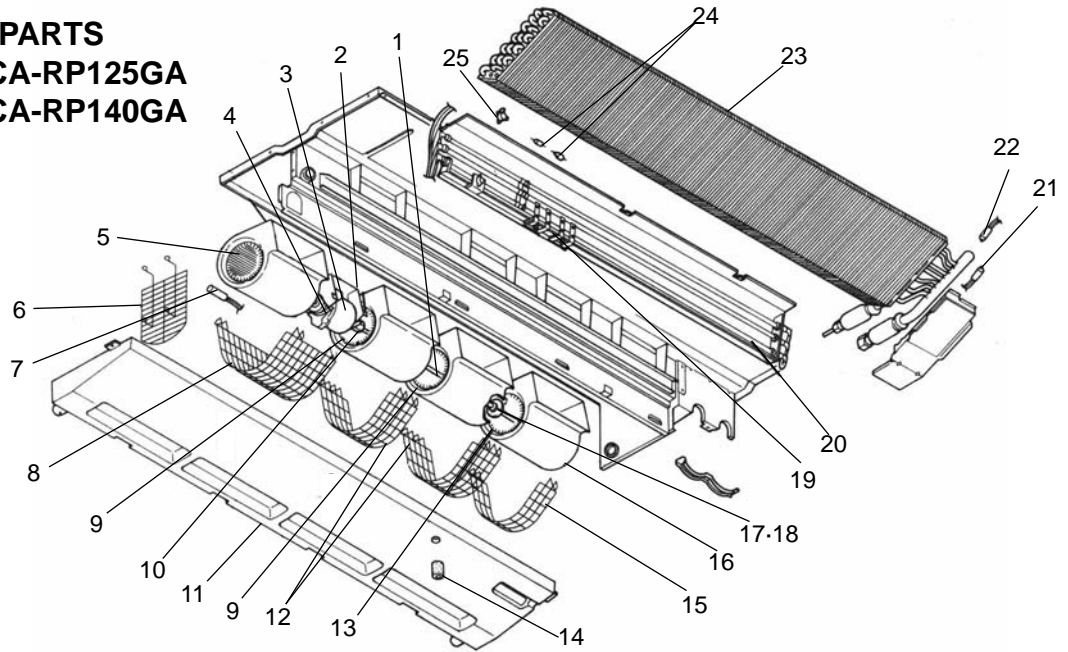
No.	Parts No.	Parts Name	Specifications	Q'ty / set				Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PCH- P60 GAH	P71 GAH	PCA- RP60 GA	RP71 GA				Unit	Amount
1	R01 29J 130	MOTOR LEG		1	1	1	1					
2	T7W 30J 762	FAN MOTOR	DO9C4P70MS	1	1	1	1	MF				
3	R01 700 116	SHAFT JOINT		1	1	1	1					
4	R01 43E 126	PIECE (MOTOR)		1	1	1	1					
5	R01 29J 114	SIROCCO FAN		2	2	2	2					
6	T7W 20J 675	FAN GUARD		1	1	1	1					
7	R01 E26 202	ROOM TEMPERATURE THERMISTOR		1	1	1	1	TH1				
8	R01 29J 100	SHAFT (FAN)		1	1	1	1					
9	T7W 21J 675	FAN GUARD		2	2	2	2					
10	R01 E00 103	SLEEVE BEARING		1	1	1	1					
11	R01 29J 145	BEARING SUPPORT		1	1	1	1					
12	R01 17J 524	DRAIN PLUG		1	1	1	1					
13	R01 A15 529	DRAIN PAN ASSY		1	1	1	1					
14	T7W 18J 675	FAN GUARD		1	1	1	1					
15	R01 17J 110	CASING		3	3	3	3					
17	R01 33J 114	SIROCCO FAN		1	1	1	1					
	R01 20J 303	INSULATOR		1	1							
	R01 30J 303	INSULATOR		3	3							
18	T7W 30J 300	HEATER ELEMENT	80V 700W	3	3			H1				
19	R01 17J 202	PIPE TEMPERATURE THERMISTOR		1	1	1	1	TH2				
21	R01 E27 202	CONDENSER / EVAPORATOR TEMPERATURE THERMISTOR		1	1	1	1	TH5				
	R01 H00 480	HEAT EXCHANGER		1	1		1					
	T7W K01 480	HEAT EXCHANGER				1						
22	T7W 23J 706	THERMAL FUSE	110°C 16A 250V	1	1			FS1,2				
23	R01 46K 700	THERMAL SWITCH	OFF:50°C ON:35°C	1	1			26H				

FAN AND HEATER PARTS
PCH-P100GAH
PCA-RP100GA



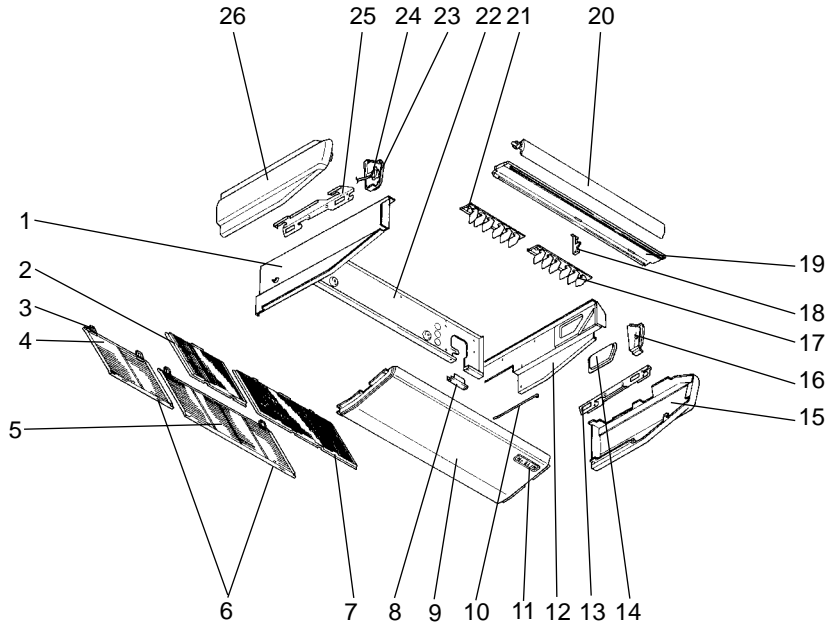
No.	Parts No.	Parts Name	Specifications	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PCH-	PCA-				Unit	Amount
				P100GAH	RP100GA					
1	R01 43E 126	PIECE (MOTOR)		1	1					
2	R01 35J 130	MOTOR LEG		1	1					
3	R01 35J 220	FAN MOTOR	D10B4P90MS	1	1		MF			
4	R01 700 116	SHAFT JOINT		1	1					
5	R01 35J 114	SIROCCO FAN		2	2					
6	T7W 22J 675	FAN GUARD		1	1					
7	R01 E26 202	ROOM TEMPERATURE THERMISTOR		1	1		TH1			
8	R01 29J 100	SHAFT		1	1					
9	T7W 23J 675	FAN GUARD		2	2					
10	R01 E00 103	SLEEVE BEARING		1	1					
11	R01 35J 145	BEARING SUPPORT		1	1					
12	R01 17J 524	DRAIN PLUG		1	1					
13	R01 A16 529	DRAIN PAN ASSY		1	1					
14	T7W 24J 675	FAN GUARD		1	1					
15	R01 35J 110	CASING		3	3					
16	R01 39J 114	SIROCCO FAN		1	1					
	R01 20J 303	INSULATOR		1						
17	R01 36J 303	INSULATOR		3						
18	T7W 39J 300	HEATER ELEMENT	80V 900W	3			H1			
19	R01 17J 202	PIPE TEMPERATURE THERMISTOR		1	1		TH2			
20	R01 E27 202	CONDENSER / EVAPORATOR TEMPERATURE THERMISTOR		1	1		TH5			
21	R01 E33 480	HEAT EXCHANGER		1						
	T7W K02 480	HEAT EXCHANGER			1					
22	T7W 589 706	THERMAL FUSE	117°C 16A 250V	1			FS1,2			
23	R01 46K 700	THERMAL SWITCH	OFF:50°C ON:35°C	1			26H			

FAN AND HEATER PARTS
PCH-P125GAH, PCA-RP125GA
PCH-P140GAH, PCA-RP140GA



No.	Parts No.	Parts Name	Specifications	Q'ty / set				Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PCH- P125 GAH	P140 GAH	PCA- RP125 GA	RP140 GA				Unit	Amount
1	R01 29J 100	SHAFT		1	1	1	1					
2	R01 41J 130	MOTOR LEG		1	1	1	1					
3	R01 41J 220	FAN MOTOR	D10B4P150MS	1	1	1	1	MF				
4	R01 43E 126	PIECE (MOTOR)		1	1	1	1					
5	R01 41J 114	SIROCCO FAN		1	1	1	1					
6	T7W 26J 675	FAN GUARD		1	1	1	1					
7	R01 E26 202	ROOM TEMPERATURE THERMISTOR		1	1	1	1	TH1				
8	T7W 25J 675	FAN GUARD		1	1	1	1					
9	R01 35J 114	SIROCCO FAN		2	2	2	2					
10	R01 700 116	SHAFT JOINT		1	1	1	1					
11	R01 A17 529	DRAIN PAN ASSY		1	1	1	1					
12	T7W 23J 675	FAN GUARD		2	2	2	2					
13	R01 39J 114	SIROCCO FAN		1	1	1	1					
14	R01 17J 524	DRAIN PLUG		1	1	1	1					
15	T7W 24J 675	FAN GUARD		1	1	1	1					
16	R01 35J 110	CASING		4	4	4	4					
17	R01 E00 103	SLEEVE BEARING		1	1	1	1					
18	R01 35J 145	BEARING SUPPORT		1	1	1	1					
19	R01 20J 303	INSULATOR		1	1							
	R01 36J 303	INSULATOR		6	6							
20	T7W 43J 300	HEATER ELEMENT	80V 1000W	3	3			H1				
21	R01 17J 202	PIPE TEMPERATURE THERMISTOR		1	1	1	1	TH2				
22	R01 E27 202	CONDENSER / EVAPORATOR TEMPERATURE THERMISTOR		1	1	1	1	TH5				
23	T7W K03 480	HEAT EXCHANGER				1						
	T7W K04 480	HEAT EXCHANGER					1					
	T7W K05 480	HEAT EXCHANGER		1								
	T7W K06 480	HEAT EXCHANGER			1							
24	T7W 23J 706	THERMAL FUSE	110°C 16A 250V	1	1			FS1,2				
25	R01 46K 700	THERMAL SWITCH	OFF:50°C ON:35°C	1	1			26H				

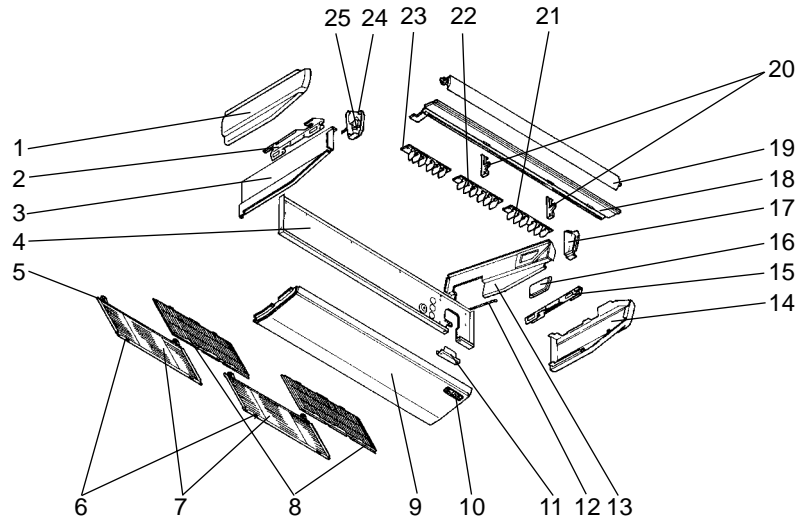
STRUCTURAL PART
PCA-RP50GA
PCH-P50GAH



Part number that is circled is 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-RP50GA PCH-P50GAH				Unit	Amount
1	R01 57N 666	S.PLATE-L		1					
2	R01 A15 500	L.L FILTER		1					
3	R01 17J 061	GRILLE HINGE		4					
4	R01 18J 691	GRILLE ASSY		1					
5	R01 17J 691	GRILLE ASSY		1					
6	R01 17J 054	GRILLE CATCH		4					
7	R01 A14 500	L.L FILTER		1					
8	—	REAR SUPPORT		1	(BG02H454K01)				
9	R01 17J 669	UNDER PANEL		1					
10	—	BEAM(GA)		2	(BG17H464H08)				
11	T7W E01 070	W.BOARD CASE		1					
12	R01 18J 665	S.PLATE-R		1					
13	R01 17J 808	RIGHT LEG (R)		1					
14	R01 17J 668	SERVICE PANEL		1					
15	R01 17J 661	RIGHT SIDE PANEL		1					
16	R01 17J 067	RIGHT SIDE BOX		1					
17	R01 37J 085	G.V ASSY-6R		1					
18	R01 E00 033	VANE SUPPORT		1					
19	R01 17J 651	FRONT PANEL		1					
20	R01 17J 002	AUTO VANE		1					
21	R01 37J 086	G.V ASSY-6L		1					
22	R01 A14 676	REAR PANEL		1					
23	R01 17J 068	LEFT SIDE BOX		1					
24	R01 E03 223	VANE MOTOR		1		MV			
25	R01 17J 809	LEFT LEG (L)		1					
26	R01 17J 662	LEFT SIDE PANEL		1					
27	R01 17J 523	JOINT SOCKET		1					
28	T7W E00 072	DRAIN HOSE COVER		1					

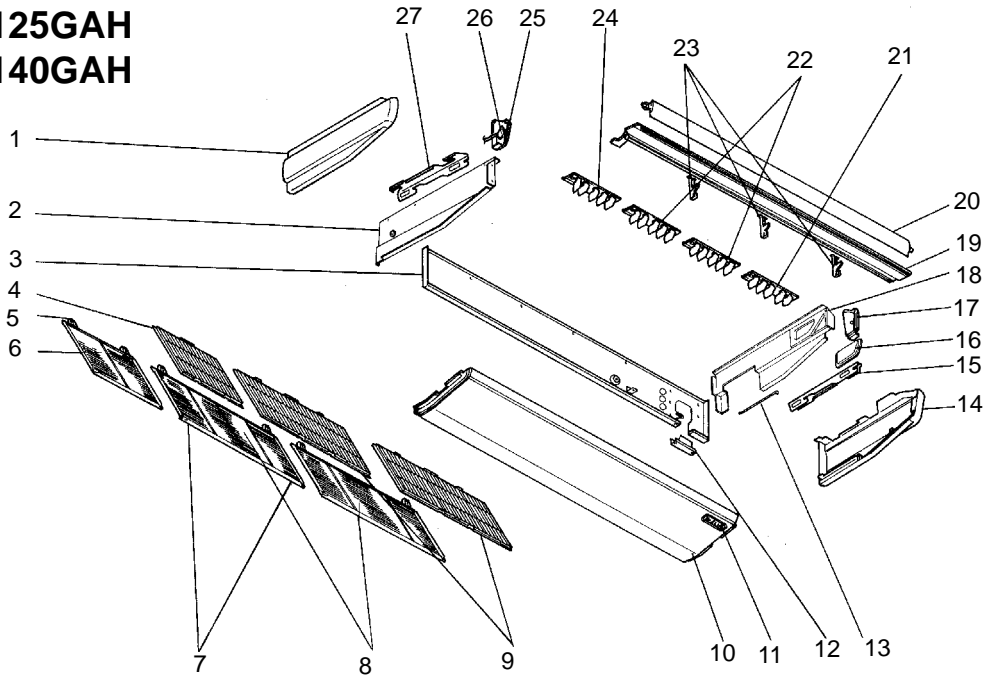
STRUCTURAL PART
PCA-RP60GA
PCA-RP71GA
PCA-RP100GA
PCH-P60GAH
PCH-P71GAH
PCH-P100GAH



Part number that is circled is not show 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/ 60/71 GA/GAH	PCH-P 100				Unit	Amount
1	R01 17J 662	LEFT SIDE PANEL		1						
	R01 35J 662	LEFT SIDE PANEL			1					
2	R01 17J 809	LEFT LEG		1	1					
3	R01 57N 666	S.PLATE-L		1						
	R01 35J 666	S.PLATE-L			1					
4	R01 A15 676	REAR PANEL		1						
	R01 A16 676	REAR PANEL			1					
5	R01 17J 061	GRILLE HINGE		4	4					
6	R01 17J 054	GRILLE CATCH		4	4					
7	R01 17J 691	GRILLE ASSY		2	2					
8	R01 A14 500	L.L FILTER		2	2					
9	R01 29J 669	UNDER PANEL		1	1					
10	T7W E01 070	W.BOARD CASE		1	1					
11	—	REAR SUPPORT		1	1	(BG02H454K01)				
12	—	BEAM (GA)		2	2	(BG17H464H08)				
13	R01 18J 665	S.PLATE-R		1						
	R01 E00 665	S.PLATE-R			1					
14	R01 17J 661	RIGHT SIDE PANEL		1						
	R01 35J 661	RIGHT SIDE PANEL			1					
15	R01 17J 808	RIGHT LEG		1	1					
16	R01 17J 668	SERVICE PANEL		1						
	R01 18J 668	SERVICE PANEL			1					
17	R01 17J 067	RIGHT SIDE BOX		1						
	R01 35J 067	RIGHT SIDE BOX			1					
18	R01 29J 651	FRONT PANEL		1						
	R01 36J 651	FRONT PANEL			1					
19	R01 29J 002	AUTO VANE		1						
	R01 E03 002	AUTO VANE			1					
20	R01 E00 033	VANE SUPPORT		2						
	R01 E01 033	VANE SUPPORT			2					
21	R01 37J 085	G.V ASSY-6R		1	1					
22	R01 37J 087	G.V ASSY-6C		1	1					
23	R01 37J 086	G.V ASSY-6L		1	1					
24	R01 17J 068	LEFT SIDE BOX		1						
	R01 E00 068	LEFT SIDE BOX			1					
25	R01 29J 223	VANE MOTOR		1			MV			
	R01 35J 223	VANE MOTOR			1		MV			
26	R01 17J 523	JOINT SOCKET		1	1					
27	T7W E00 072	DRAIN HOSE COVER		1	1					

STRUCTURAL PART
PCA-RP125GA
PCA-RP140GA
PCH-P125GAH
PCH-P140GAH



Part number that is circled is 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-RP125/140GA	PCH-P125/140GAH				Unit	Amount
1	R01 35J 662	LEFT SIDE PANEL		1						
2	R01 35J 666	S.PLATE-L		1						
3	R01 A17 676	REAR PANEL		1						
4	R01 A15 500	L.L FILTER		1						
5	R01 17J 061	GRILLE HINGE		6						
6	R01 18J 691	GRILLE ASSY		1						
7	R01 17J 054	GRILLE CATCH		6						
8	R01 17J 691	GRILLE ASSY		2						
9	R01 A14 500	L.L FILTER		2						
10	R01 41J 669	UNDER PANEL		1						
11	T7W E01 070	W.BOARD CASE		1						
12	—	REAR SUPPORT		1		(BG02H454K01)				
13	—	BEAM(GA)		3		(BG17H464H08)				
14	R01 35J 661	RIGHT SIDE PANEL		1						
15	R01 17J 808	RIGHT LEG		1						
16	R01 18J 668	SERVICE PANEL		1						
17	R01 35J 067	RIGHT SIDE BOX		1						
18	R01 E00 665	S.PLATE-R		1						
19	R01 41J 651	FRONT PANEL		1						
20	R01 E04 002	AUTO VANE		1						
21	R01 41J 085	G.V ASSY-5R		1						
22	R01 43J 087	G.V ASSY-5C		2						
23	R01 E01 033	VANE SUPPORT		3						
24	R01 42J 086	G.V ASSY-5L		1						
25	R01 E00 068	LEFT SIDE BOX		1						
26	R01 35J 223	VANE MOTOR		1			MV			
27	R01 17J 809	LEFT LEG		1						
28	R01 17J 523	JOINT SOCKET		1						
29	T7W E00 072	DRAIN HOSE COVER		1						

ELECTRICAL PARTS

PCA-RP50GA

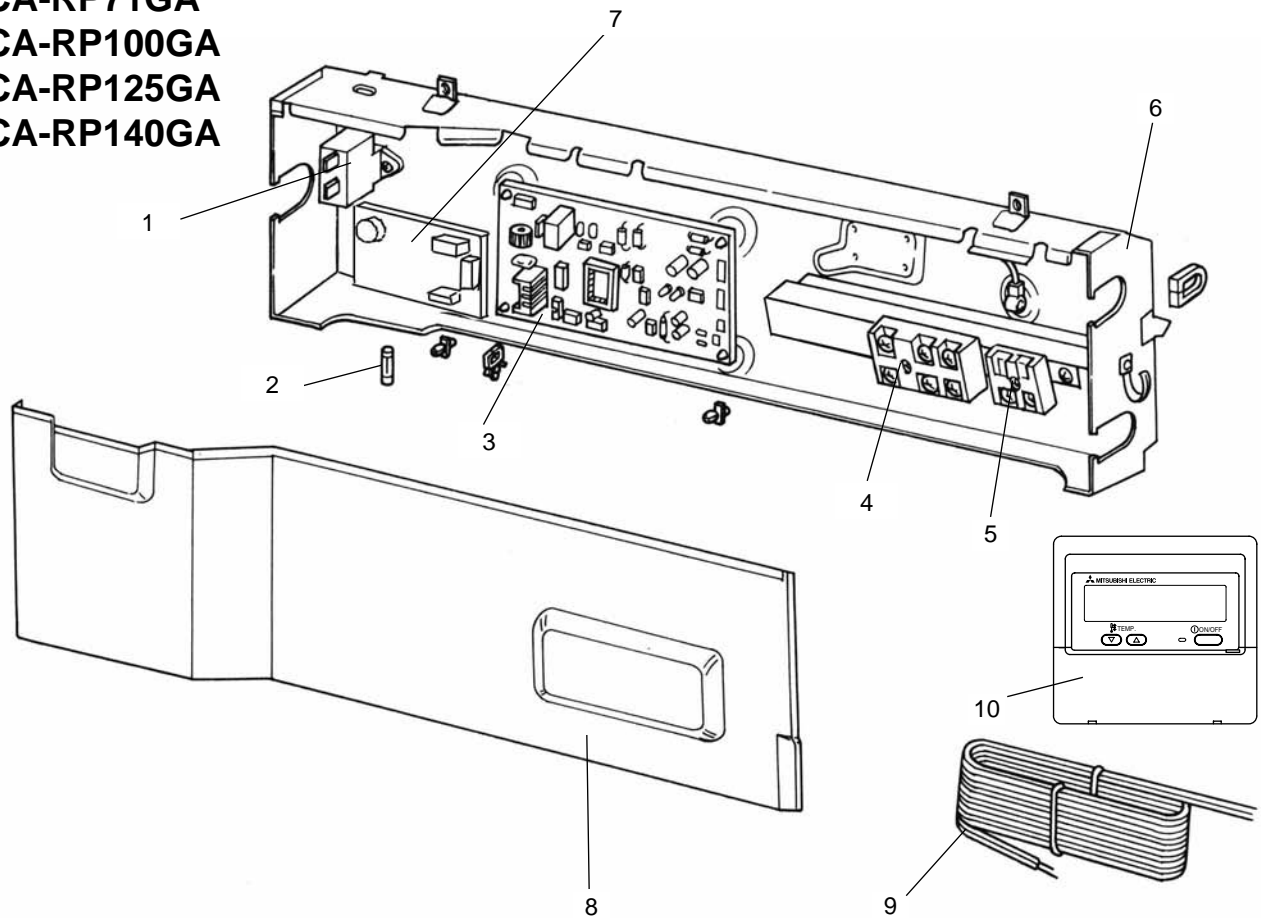
PCA-RP60GA

PCA-RP71GA

PCA-RP100GA

PCA-RP125GA

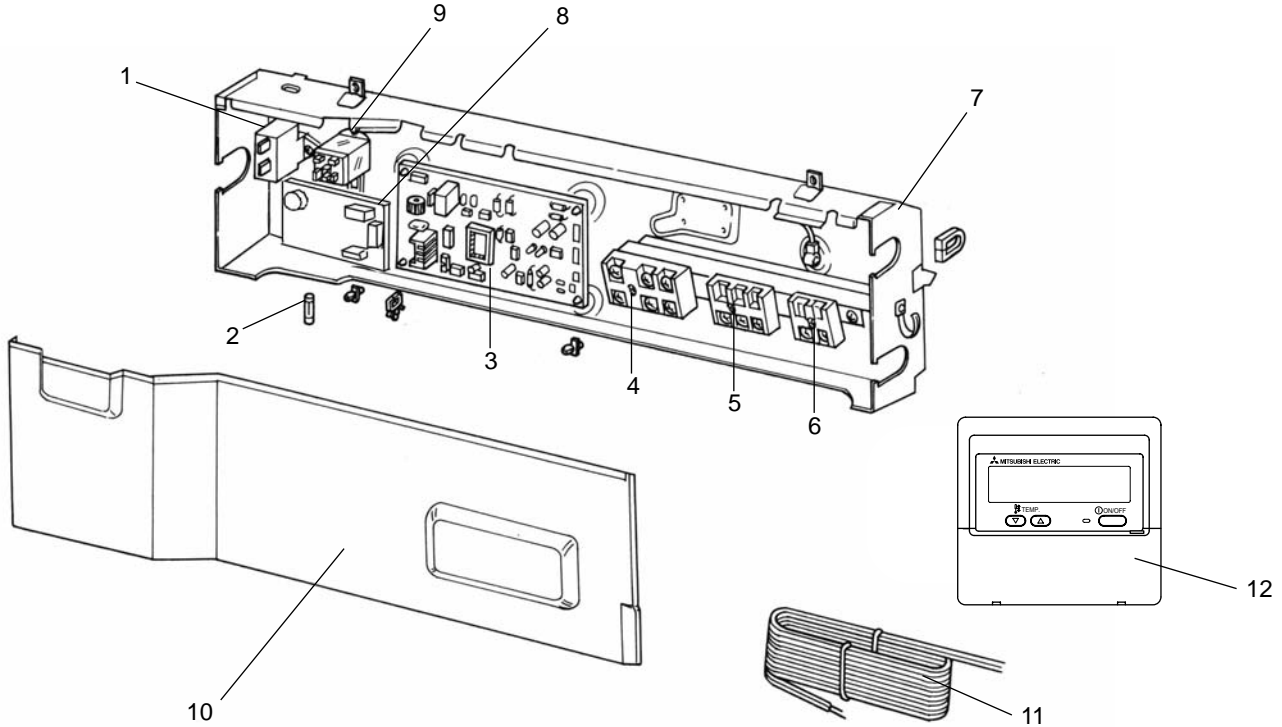
PCA-RP140GA



No.	Parts No.	Parts Name	Specifications	Q'ty				Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PCA-RP							Unit	Amount
				50	60/71	100	125/140					
				GA								
1	R01 30L 255	CAPACITOR	3 μ F 440V	1					C			
	T7W 39J 255	CAPACITOR	4 μ F 440V		1	1			C			
	R01 A13 255	CAPACITOR	6 μ F 440V				1		C			
2	R01 E02 239	FUSE	250V 6.3A	1	1	1	1		FUSE			
3	T7W E40 310	INDOOR CONTROLLER BOARD		1	1	1	1		I.B			
4	T7W E23 716	TERMINAL BLOCK	3P(S1,S2,S3)	1	1	1	1		TB4			
5	T7W 512 716	TERMINAL BLOCK	2P(1,2)	1	1	1	1		TB5			
6	—	CONTROL BOX		1	1	1	1	(BG00N015G31)				
7	R01 E02 313	POWER BOARD		1	1	1	1		P.B			
8	—	CONTROL COVER		1				(BG02A804G27)				
	—	CONTROL COVER			1		1	(BG02A804G28)				
	—	CONTROL COVER				1		(BG02A804G29)				
9	T7W A00 305	REMOTE CONTROLLER CORD		1	1	1	1					
10	T7W E08 713	REMOTE CONTROLLER	PAR-21MAA	1	1	1	1		R.B			

ELECTRICAL PARTS

PCH-P50GAH, PCH-P100GAH
 PCH-P60GAH, PCH-P125GAH
 PCH-P71GAH, PCH-P140GAH



No.	Parts No.	Parts Name	Specifications	Q'ty / set				Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PCH-P							Unit	Amount
				50	60/71	100	125/140					
1	R01 30L 255	CAPACITOR	3 μ F 440V	1					C			
	T7W 39J 255	CAPACITOR	4 μ F 440V		1	1			C			
	R01 A13 255	CAPACITOR	6 μ F 440V				1		C			
2	R01 E02 239	FUSE	250V 6.3A	1	1	1	1		FUSE			
3	T7W E40 310	INDOOR CONTROLLER BOARD		1	1	1	1		I.B			
4	T7W A14 716	TERMINAL BLOCK	3P (L,N, \ominus)	1	1	1	1		TB2			
5	T7W E23 716	TERMINAL BLOCK	3P (S1,S2,S3)	1	1	1	1		TB4			
6	T7W 512 716	TERMINAL BLOCK	2P (1,2)	1	1	1	1		TB5			
7	—	CONTROL BOX		1	1	1	1	(BG00N015G32)				
8	R01 E02 313	POWER BOARD		1	1	1	1		P.B			
9	R01 71G 215	RELAY	JC-1A DC12V	1	1	1	1		88H			
10	—	CONTROL COVER		1				(BG02A804G27)				
	—	CONTROL COVER			1		1	(BG02A804G28)				
	—	CONTROL COVER				1		(BG02A804G29)				
11	T7W A00 305	REMOTE CONTROLLER CORD	10m	1	1	1	1					
12	T7W E08 713	REMOTE CONTROLLER	PAR-21MAA	1	1	1	1		R.B			

Mr. SLIM™

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