

May 2009

No. OC342

REVISED EDITION-C

# TECHNICAL & SERVICE MANUAL

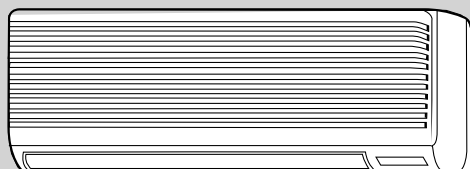
## CITY MULTI Series Wall Mounted Type R410A / R22

[Models] **PKFY-P06NAMU-E**  
**PKFY-P08NAMU-E**  
**PKFY-P12NGMU-E**  
**PKFY-P15NGMU-E**  
**PKFY-P18NFMU-E**  
**PKFY-P24NFMU-E**  
**PKFY-P30NFMU-E**

Revision:  
 • "12. RoHS PARTS LIST" has been modified.

• Please void OC342  
 REVISED EDITION-B.

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



PKFY-P12NGMU-E

### CONTENTS

1. DIFFERENCES.....	2
2. FEATURES.....	3
3. PART NAMES AND FUNCTIONS.....	6
4. SPECIFICATION.....	9
5. OUTLINES AND DIMENSIONS.....	16
6. WIRING DIAGRAM.....	20
7. REFRIGERANT SYSTEM DIAGRAM.....	22
8. MICROPROCESSOR CONTROL.....	23
9. TROUBLESHOOTING.....	30
10. DISASSEMBLY PROCEDURE.....	39
11. PARTS LIST.....	48
12. RoHS PARTS LIST.....	56



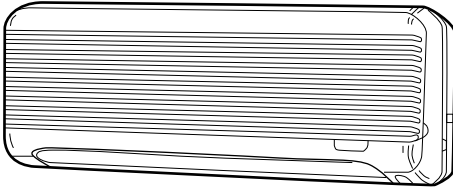
**CITY MULTI**

Revision :

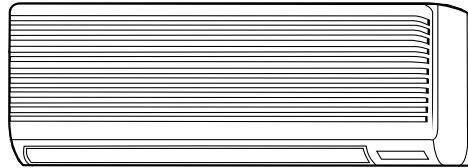
"12. RoHS PARTS LIST" has been modified on page 61.

Page	Revise point	Service Ref.
61	All parts No. 1~9	PKFY-P18/24/30NFMU-E

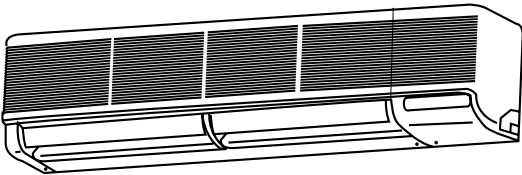
# 1 DIFFERENCES



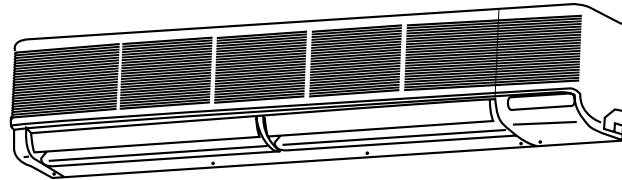
**PKFY-P06NAMU-E  
PKFY-P08NAMU-E  
Indoor Unit**



**PKFY-P12NGMU-E  
PKFY-P15NGMU-E  
Indoor Unit**



**PKFY-P18NFMU-E  
PKFY-P24NFMU-E  
Indoor Unit**



**PKFY-P30NFMU-E  
Indoor Unit**

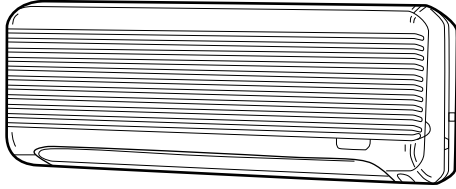
## Differences among the models of PKFY series.

Item		Model	PKFY-																
			P06		P08		P12		P15		P18		P24		P30				
			NAMU-E				NGMU-E				NFMU-E								
Fan		—	Lineflow fan × 1				Lineflow fan × 1				Lineflow fan × 2								
Fan speed		—	4 speeds type				4 speeds type				2 speeds type		2 speeds type						
Air flow	High	CFM	D R Y	210	W E T	190	D R Y	410	W E T	370	D R Y	640	W E T	570	D R Y	990	W E T	890	
	Medium 1	CFM		200		180		370		330		—		—		—		—	
	Medium 2	CFM		180		170		340		300		—		—		—		—	
	Low	CFM		170		160		280		250		490		440		780		700	
Noise level	High	dB	36				42				45		49						
	Medium 1	dB	35				40				—		—						
	Medium 2	dB	33				36				—		—						
	Low	dB	32				32				39		46						
Out dimension	Height	in.	11-5/8				13-3/8				13-3/8								
	Width	in.	32-1/8				39				55-1/8		66-1/8						
	Depth	in.	6-1/4				9-1/4				9-1/4								
Controller board	SW2	1	—	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
		2	—	OFF	OFF	ON	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
		3	—	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	
		4	—	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
		5	—	—	—	—	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON
		6	—	—	—	—	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Pipe dimension	Gas side	in.	1/2"				1/2"				1/2" / 5/8" (Compatible)		5/8"						
	Liquid side	in.	1/4"				1/4"				1/4" / 3/8" (Compatible)		3/8"						
	Drain(unit side)	in.	O.D. 5/8"				O.D. 13/16"				O.D. 13/16"								

## 2

## FEATURES

PKFY-P06NAMU-E  
PKFY-P08NAMU-E



Indoor Unit

Model	Cooling capacity / Heating capacity
PKFY-P06NAMU-E	6,000 / 6,700 Btu/h
PKFY-P08NAMU-E	8,000 / 9,000 Btu/h

### 1. Compact Design

- Compact 11-5/8 inch (29.5cm) high body fits snugly in even limited spaces.
- Light weight 19lbs (8.5kg) unit easy to transport and install.

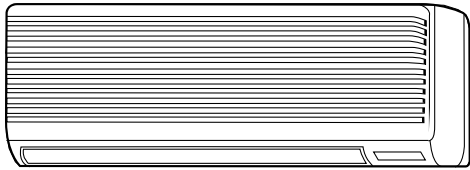
### 2. Auto-flap shutter enhances good looks

With a simple flick of the OFF switch, the air outlet can be closed off with a shutter. The shutter also functions as a flap during operation to adjust the air flow angle, with “Auto Angle” securing a comfortable air flow.

### 3. Quiet operation

### 4. The intake grille filter can be completely removed allowing easy cleaning

**PKFY-P12NGMU-E**  
**PKFY-P15NGMU-E**



Indoor Unit

Model	Cooling capacity / Heating capacity
PKFY-P12NGMU-E	12,000 / 13,500 Btu/h
PKFY-P15NGMU-E	15,000 / 17,000 Btu/h

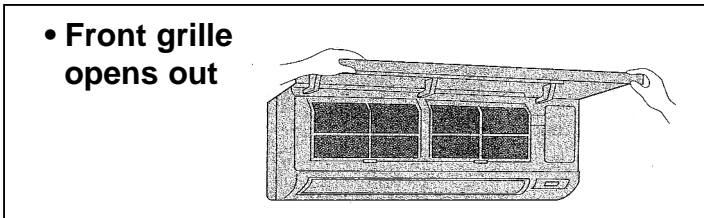
**1. Compact Design**

Units have now been downsized to require minimal wall space.  
A 20% reduction in width 39 inch (990mm) compared to previous models means that installation is possible in very narrow spaces.

**2. Auto-flap shutter enhances good looks**

With a simple flick of the OFF switch, the air outlet can be closed off with a shutter. The shutter also functions as a flap during operation to adjust the air flow angle, with "Auto Angle" securing a comfortable air flow.

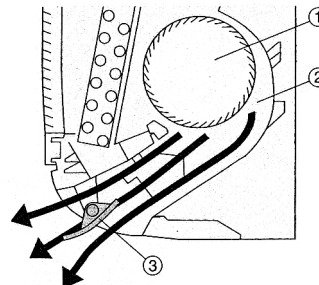
**3. The intake grille filter can be completely removed allowing easy cleaning  
(Can be washed in water)**



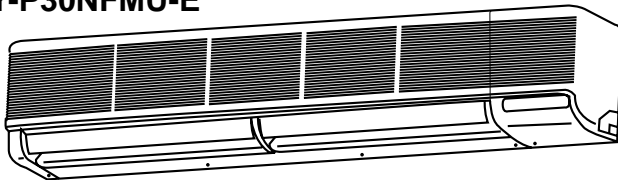
**4. Quiet operation**

• Airflow passage configuration that assures quiet operation

- ① The unit incorporates a random pitch cycling fan. By changing fan intervals, quiet operation is achieved without reduction in airflow. Optimal design of the airflow passage gives a shortened fan diameter and allows a highly compact installation.
- ② Thanks to a highly practical casing configuration, airflow generated by the fan is distributed uniformly.
- ③ Due to careful positioning of the vertical vane axis, air is blown evenly from the outlet. This prevents mixing with secondary air and also suppresses condensation.



**PKFY-P18NFMU-E**  
**PKFY-P24NFMU-E**  
**PKFY-P30NFMU-E**



**PKFY-P30NFMU-E**  
Indoor Unit

**Models**

PKFY-P18NFMU-E  
PKFY-P24NFMU-E  
PKFY-P30NFMU-E

**Cooling capacity / Heating capacity**

18,000 / 20,000 Btu/h  
24,000 / 27,000 Btu/h  
30,000 / 34,000 Btu/h

**1. A further refinement of comfort with noise suppression**

Remarkably low-noise operation has been achieved through the development of a “near -silent” fan and the design which minimizes air flow resistance.

**2. Auto flap shutter**

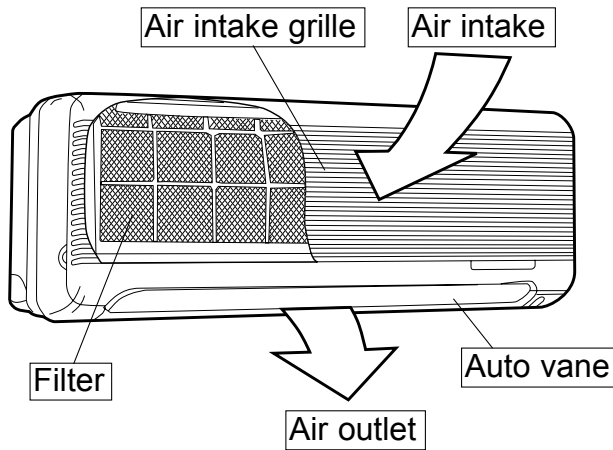
With a simple flick of the OFF switch, the air outlet can be closed off with a shutter. The shutter also functions as a flap during operation to adjust the air flow angle, with “Auto Angle” securing a comfortable air flow.

**3. Easily removable filter**

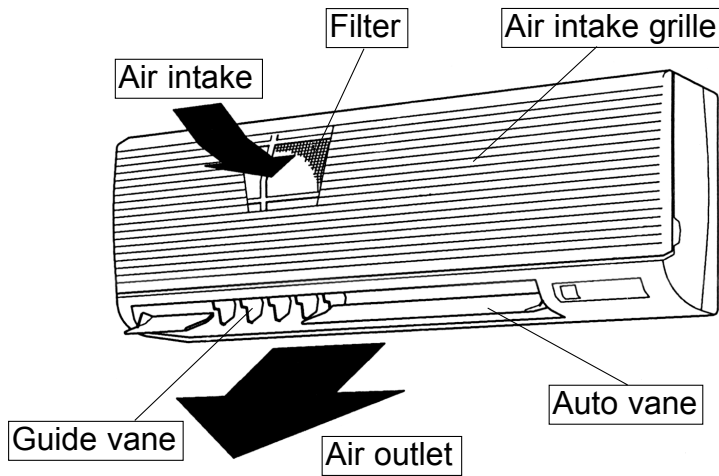
The presence of thumbscrews on the filters means that the filters can be quickly and smoothly removed.

# PART NAMES AND FUNCTIONS

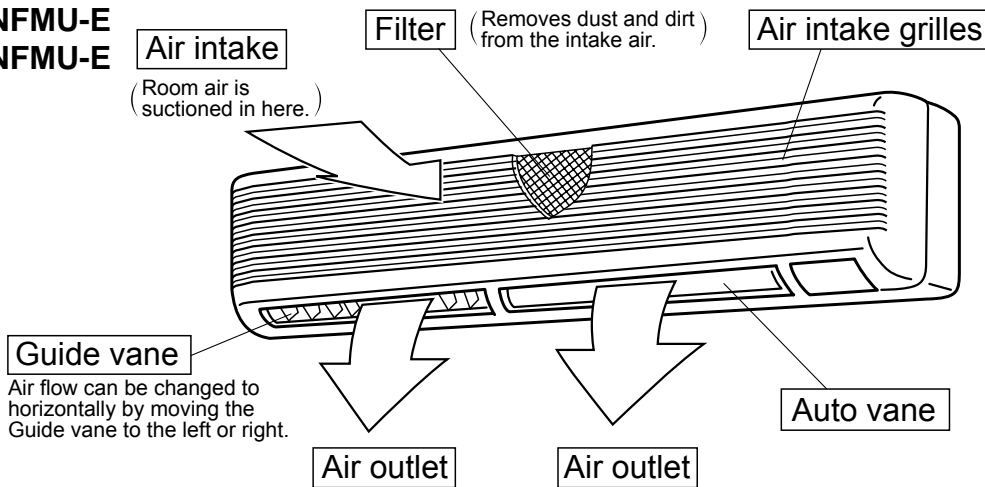
● Indoor Unit  
 PKFY-P06NAMU-E  
 PKFY-P08NAMU-E



PKFY-P12NGMU-E  
 PKFY-P15NGMU-E



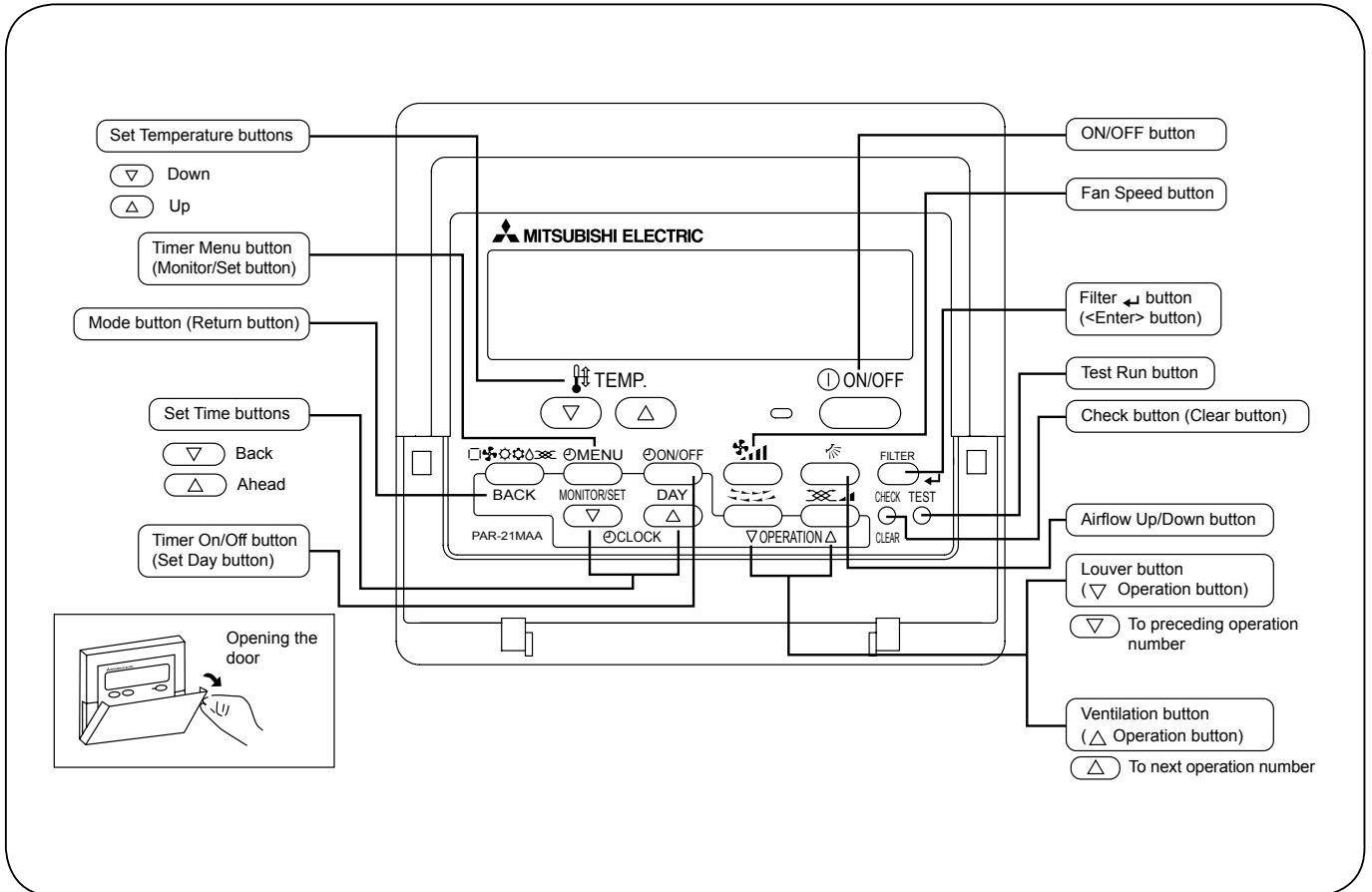
PKFY-P18NFMU-E  
 PKFY-P24NFMU-E  
 PKFY-P30NFMU-E



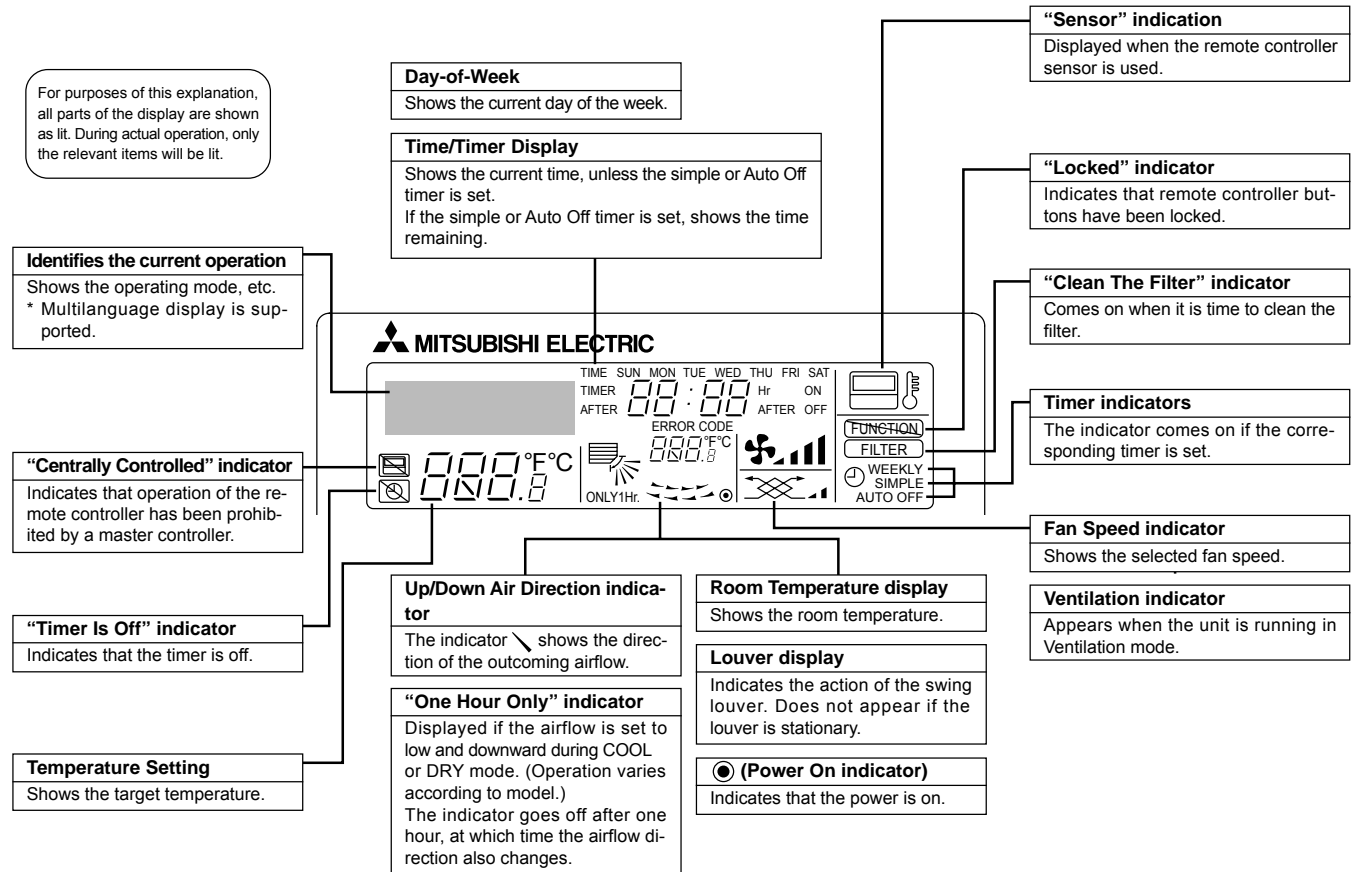
## ● Remote controller

- Once the operation of the unit is set, subsequent operations can only be performed by pressing the ON/OFF button repeatedly.

## ● 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 in the indoor unit, the remote controller will display the “Not Available” message.  
If you are using the remote controller to operate multiple indoor units, this message will appear only if the feature is not present at every unit connected.
- When power is turned ON for the first time, it is normal that “PLEASE WAIT” is displayed on the room temperature indication (For max. 2minutes). Please wait until this “PLEASE WAIT” indication disappears then start the operation.

## 4

## SPECIFICATIONS

**4-1. SPECIFICATIONS**  
**PKFY-P06NAMU-E**  
**PKFY-P08NAMU-E**

Item		Unit	PKFY-P06NAMU-E	PKFY-P08NAMU-E
Power source		$\phi$ ,V,Hz	Single phase, 208/230V, 60Hz	
Cooling capacity		Btu/h	6,000	8,000
Heating capacity		Btu/h	6,700	9,000
Electric characteristic	Power Supply	Cooling	kW	0.03
		Heating	kW	0.03
	Starting Current	Cooling	A	0.15
		Heating	A	0.15
Exterior <munsell symbol>		—	Plastic , white : <2.60Y 8.66/0.69>	
Out dimensions	Height	in.	11-5/8	
	Width	in.	32-1/8	
	Depth	in.	6-1/4	
Heat exchanger		—	Cross fin (Aluminum plate fin and copper tube)	
Fan	Fan × No.		—	Lineflow fan × 1
	Air flow ※ 2	DRY	CFM	170-180-200-210
		WET	CFM	160-170-180-190
	External static pressure		Pa	0
Fan motor output		kW	0.017	
Insulator		—	Polyethylene sheet	
Air filter		—	PP honey comb	
Pipe dimensions	Gas side	in.	1/2"	
	Liquid side	in.	1/4"	
Unit drain pipe size		in.	PVC pipe with O.D. 5/8"	
Noise level ※ 2		dB	32-33-35-36	
Product weight		lbs	19	

**Note 1.** Rating conditions

Cooling : Indoor	D.B. 80°F	W.B. 67°F
Outdoor	D.B. 95°F	W.B. 75°F
Heating : Indoor	D.B. 70°F	
Outdoor	D.B. 47°F	W.B. 43°F

※ 2. Air flow and the noise level are indicated as Low - Medium2 - Medium1 - High.

**PKFY-P12NGMU-E**  
**PKFY-P15NGMU-E**

Item			Unit	PKFY-P12NGMU-E	PKFY-P15NGMU-E
Power source			φ,V,Hz	Single phase, 208/230V, 60Hz	
Cooling capacity			Btu/h	12,000	15,000
Heating capacity			Btu/h	13,500	17,000
Electric characteristic	Input	Cooling	kW	0.07	
		Heating	kW	0.07	
	Current	Cooling	A	0.34	
		Heating	A	0.34	
Exterior <munsell symbol>			—	Plastic , white : <0.70Y 8.59/0.97>	
Out dimensions		Height	in.	13-3/8	
		Width	in.	39	
		Depth	in.	9-1/4	
Heat exchanger			—	Cross fin (Aluminum plate fin and copper tube)	
Fan	Fan × No.		—	Lineflow fan × 1	
	Air flow ※ 2	DRY	CFM	280-340-370-410	
		WET	CFM	250-300-330-370	
	External static pressure		Pa	0	
	Fan motor output		kW	0.03	
Insulator			—	Polyethylene sheet	
Air filter			—	PP honey comb	
Pipe dimensions		Gas side	in.	1/2"	
		Liquid side	in.	1/4"	
Unit drain pipe size			in.	PVC pipe with O.D. 13/16"	
Noise level ※ 2			dB	32-36-40-42	
Product weight			lbs	35	

Note 1. Rating conditions

Cooling : Indoor : D.B. 80°F W.B. 67°F  
 outdoor :D.B. 95°F W.B. 75°F  
 Heating : Indoor : D.B. 70°F  
 outdoor :D.B. 47°F W.B. 43°F

※ 2. Air flow and the noise level are indicated as Low - Medium2 - Medium1 - High.

**PKFY-P18NFMU-E**  
**PKFY-P24NFMU-E**  
**PKFY-P30NFMU-E**

Item			Unit	PKFY-P18NFMU-E	PKFY-P24NFMU-E	PKFY-P30NFMU-E
Power source			$\phi$ ,V,Hz	Single phase, 208V-230V, 60Hz		
Cooling capacity			Btu/h	18,000	24,000	30,000
Heating capacity			Btu/h	20,000	27,000	34,000
Electric characteristic	Input	Cooling	kW	0.09		0.12
		Heating	kW	0.09		0.12
	Current	Cooling	A	0.44		0.58
		Heating	A	0.44		0.58
Exterior <munsell symbol>			—	Plastic , white : <3.4Y 7.7/0.8>		
Dimensions			Height	in. 13-3/8		
			Width	in. 55-1/8		in. 66-1/8
			Depth	in. 9-1/4		
Heat exchanger			—	Cross fin(Aluminum plate fin and copper tube)		
Type × No.			—	Lineflow fan × 2		
Fan	Air flow Low - High	DRY	CFM	490 - 640		780 - 990
		WET	CFM	440 - 570		700 - 890
	External static pressure		Pa	0		
	Fan motor output		kW	0.045		0.070
Insulator			—	Polyethylene sheet		
Air filter			—	PP honey comb		
Pipe dimensions			Gas side	in. 1/2" / 5/8" (compatible)		in. 5/8"
			Liquid side	in. 1/4" / 3/8" (compatible)		in. 3/8"
Unit drain pipe dimension			in.	PVC pipe with O.D. 13/16"		
Noise level Low - High			dB	39 - 45		46 - 49
Product weight			lbs	53		62

Note 1. Rating conditions

Cooling : Indoor : D.B. 80°F W.B. 67°F  
 outdoor :D.B. 95°F W.B. 75°F  
 Heating : Indoor : D.B. 70°F  
 outdoor :D.B. 47°F W.B. 43°F

## 4-2. ELECTRICAL PARTS SPECIFICATIONS

PKFY-P06NAMU-E

PKFY-P08NAMU-E

Model	Symbol	PKFY-P06/P08NAMU-E
Parts name		
Room temperature thermistor	TH21	Resistance 30°F/15.8kΩ, 50°F/9.6kΩ, 70°F/6.0kΩ, 80°F/4.8kΩ, 90°F/3.9kΩ, 100°F/3.2kΩ
Liquid pipe temperature thermistor	TH22	Resistance 30°F/15.8kΩ, 50°F/9.6kΩ, 70°F/6.0kΩ, 80°F/4.8kΩ, 90°F/3.9kΩ, 100°F/3.2kΩ
Gas pipe temperature thermistor	TH23	Resistance 30°F/15.8kΩ, 50°F/9.6kΩ, 70°F/6.0kΩ, 80°F/4.8kΩ, 90°F/3.9kΩ, 100°F/3.2kΩ
Fuse (Indoor power board)	FUSE	250V 6A
Fan motor (with thermal fuse)	MF	4-Pole Output 8W / PS4N8-KA
Fan motor capacitor	C	1.2μF × 440V
Vane motor (with limit switch)	MV	MSFBC20A03 DC12V
Linear expansion valve	LEV	DC12V Stepping motor drive Port dimension $\phi$ 3.2 (0~2000pulse) EDM-40YGME
Power supply terminal block	TB2	(L1, L2,GR) 250V 20A
Transmission terminal block	TB5	(M1, M2) 250V 10A

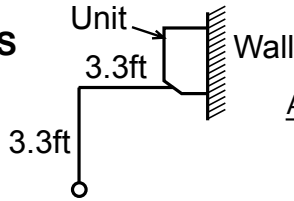
**PKFY-P12NGMU-E**  
**PKFY-P15NGMU-E**

Parts name	Model	Symbol	PKFY-P12/P15NGMU-E
Room temperature thermistor		TH21	Resistance 30°F/15.8kΩ, 50°F/9.6kΩ, 70°F/6.0kΩ, 80°F/4.8kΩ, 90°F/3.9kΩ, 100°F/3.2kΩ
Liquid pipe temperature thermistor		TH22	Resistance 30°F/15.8kΩ, 50°F/9.6kΩ, 70°F/6.0kΩ, 80°F/4.8kΩ, 90°F/3.9kΩ, 100°F/3.2kΩ
Gas pipe temperature thermistor		TH23	Resistance 30°F/15.8kΩ, 50°F/9.6kΩ, 70°F/6.0kΩ, 80°F/4.8kΩ, 90°F/3.9kΩ, 100°F/3.2kΩ
Fuse (Indoor controller board)		FUSE	250V 6A
Fan motor (with inner-thermostat)		MF	PM4N30-KA 208V/230V 60Hz 4 pole Output 30W
			Inner-thermostat OPEN 25 ± 9 °F
Fan motor capacitor		C	2.0 μF 440V
Vane motor		MV	MP 35 EA DC12V
Linear expansion valve		LEV	DC12V Stepping motor drive Port dimension ϕ3.2 (0 ~ 2000pulse) EDM-40YGME
Power supply terminal block		TB2	(L1, L2, GR) 330V 30A
Transmission terminal block		TB5	(M1, M2, S) 250V 20A
MA remote controller terminal block		TB15	(1,2) 250V 10A

**PKFY-P18NFMU-E**  
**PKFY-P24NFMU-E**  
**PKFY-P30NFMU-E**

Parts name	Model	Symbol	PKFY-P18/P24NFMU-E	PKFY-P30NFMU-E
Room temperature thermistor		TH21	Resistance 30°F/15.8kΩ, 50°F/9.6kΩ, 70°F/6.0kΩ, 80°F/4.8kΩ, 90°F/3.9kΩ, 100°F/3.2kΩ	
Liquid pipe temperature thermistor		TH22	Resistance 30°F/15.8kΩ, 50°F/9.6kΩ, 70°F/6.0kΩ, 80°F/4.8kΩ, 90°F/3.9kΩ, 100°F/3.2kΩ	
Gas pipe temperature thermistor		TH23	Resistance 30°F/15.8kΩ, 50°F/9.6kΩ, 70°F/6.0kΩ, 80°F/4.8kΩ, 90°F/3.9kΩ, 100°F/3.2kΩ	
Fuse (Indoor controller board)		FUSE	250V 6A	
Fan motor (with inner-thermostat)		MF	PN4N45-K 208-230V 60Hz 4pole Output 45w	PN4N70-K 208-230V 60Hz 4pole Output 70w
			Inner-thermostat	OPEN 266 ± 9 °F
Fan motor capacitor		C	2.5μF 440V	
Vane motor		MV	MP 35 EA DC12V	
Linear expansion valve		LEV	DC12V Stepping motor drive Port dimension ϕ3.2 (0 ~ 2,000pulse) EDM-40YGME	DC12V Stepping motor drive Port dimension ϕ5.2 (0 ~ 2,000pulse) EDM-80YGME
Power supply terminal block		TB2	(L1, L2, GR) 330V 30A	
Transmission terminal block		TB5	(M1, M2, S) 250V 20A	
MA remote controller terminal block		TB15	(1,2) 250V 10A	

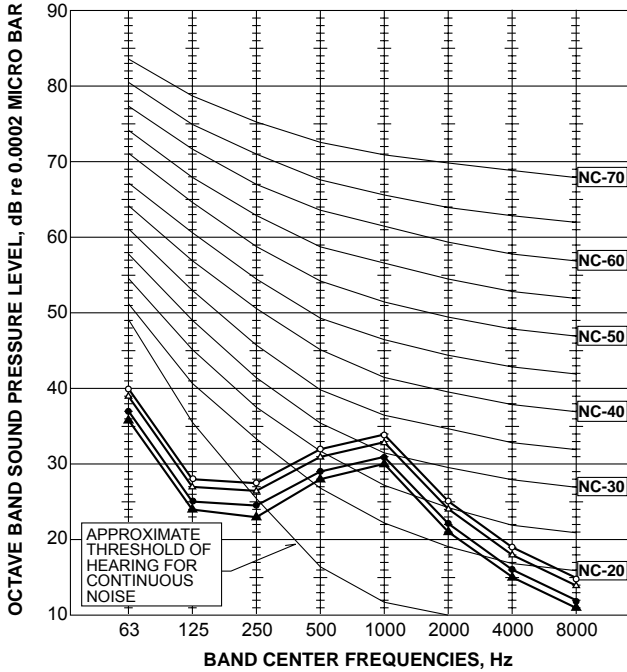
### 4-3. NOISE CRITERION CURVES



Ambient temperature 80°F

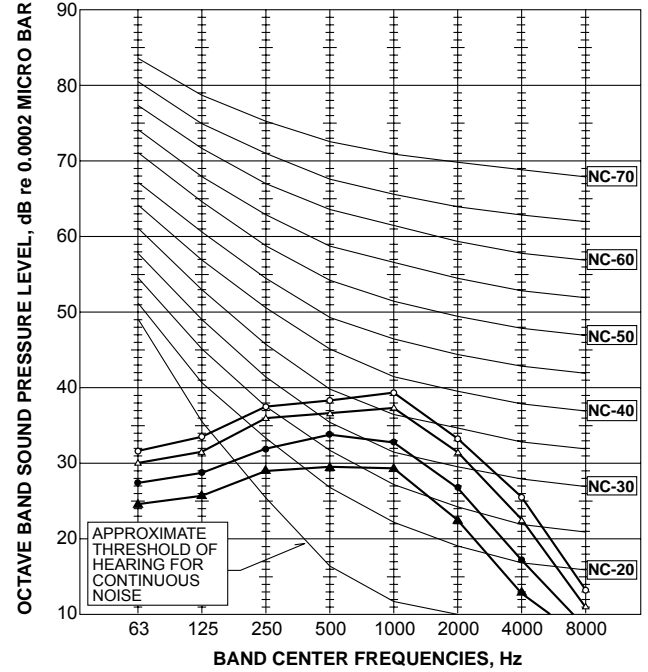
**PKFY-P06NAMU-E**  
**PKFY-P08NAMU-E**

NOTCH	SPL(dB)	LINE
High	36	○—○
Medium1	35	△—△
Medium2	33	●—●
Low	32	▲—▲



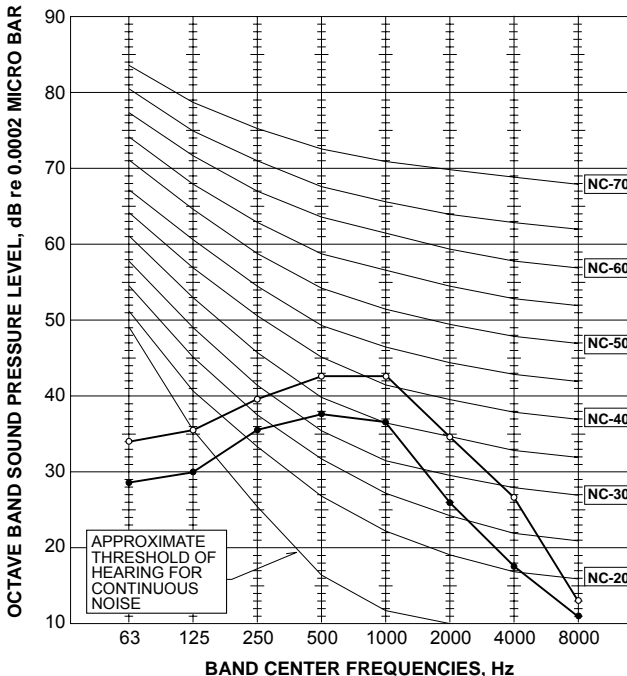
**PKFY-P12NGMU-E**  
**PKFY-P15NGMU-E**

NOTCH	SPL(dB)	LINE
High	42	○—○
Medium1	40	△—△
Medium2	36	●—●
Low	32	▲—▲



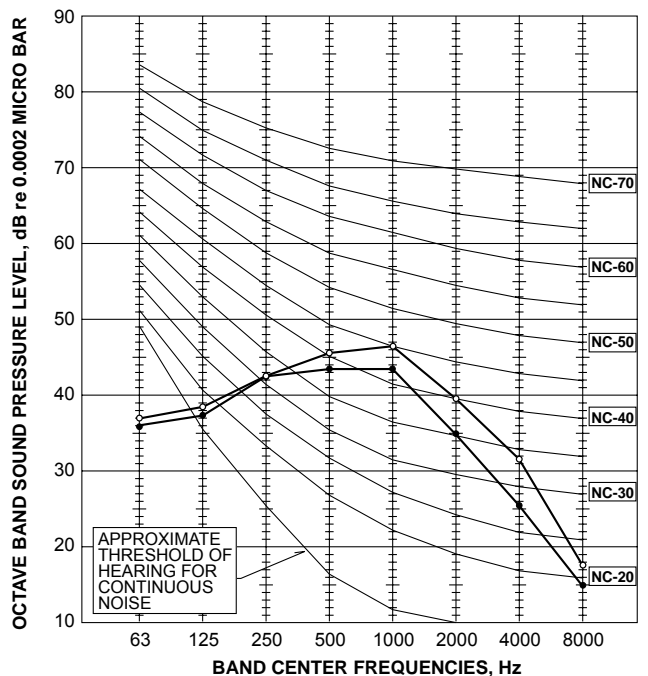
**PKFY-P18NFMU-E**  
**PKFY-P24NFMU-E**

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



**PKFY-P30NFMU-E**

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







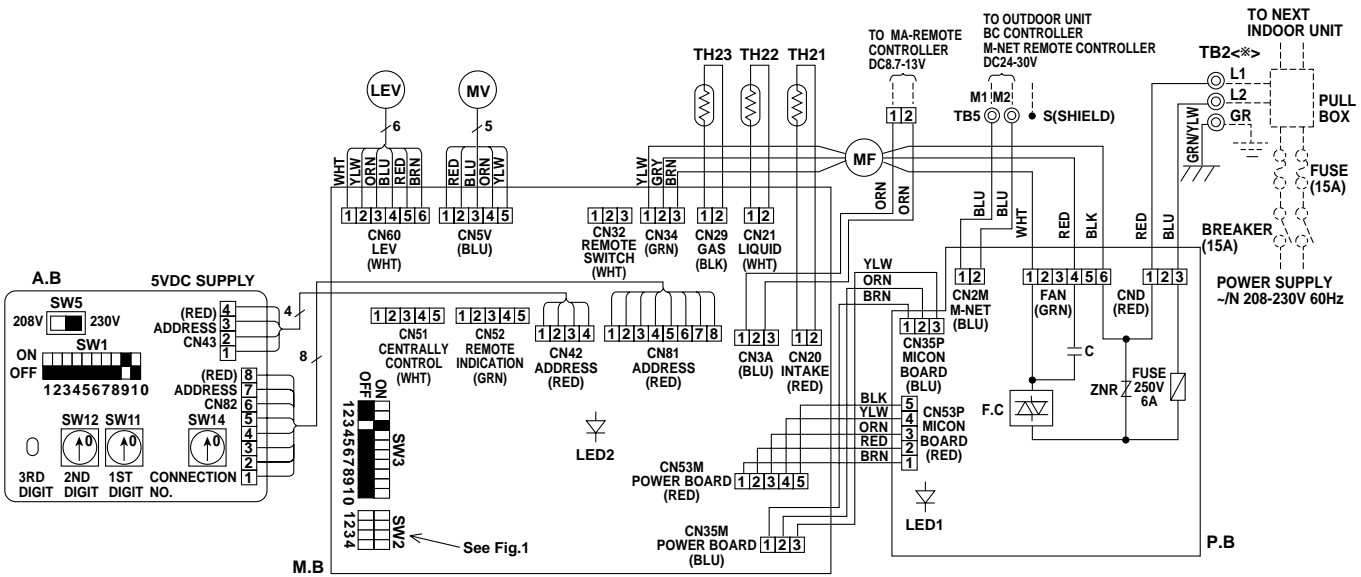




## PKFY-P06NAMU-E PKFY-P08NAMU-E

[ LEGEND ]

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME	
A. B	CIRCUIT BOARD (ADDRESS)	P. B	INDOOR POWER BOARD	LEV	LINEAR EXPANSION VALVE	
SW1	SWITCH	MODE SELECTION	C	CAPACITOR (FAN MOTOR)	MF	FAN MOTOR
SW5		VOLTAGE SELECTION	F.C	FAN PHASE CONTROL	MV	VANE MOTOR
SW11		ADDRESS SETTING 1ST DIGIT	FUSE	FUSE (6A/250V)	TB2	TERMINAL BLOCK
SW12		ADDRESS SETTING 2ST DIGIT	ZNR	VARISTOR	TB5	TERMINAL BLOCK
SW14		CONNECTION No.			TH21	THERMISTOR
M. B	INDOOR CONTROLLER BOARD				TH22	THERMISTOR
CN32	CONNECTOR	REMOTE SWITCH			TH23	THERMISTOR
CN51		CENTRALLY CONTROL				
CN52		REMOTE INDICATION				
SW2	SWITCH	CAPACITY CODE				
SW3		MODE SELECTION				
						ROOM TEMP. DETECTION (32°F/15kΩ, 77°F/5.4kΩ)
						PIPE TEMP. DETECTION/LIQUID (32°F/15kΩ, 77°F/5.4kΩ)
						PIPE TEMP. DETECTION/GAS (32°F/15kΩ, 77°F/5.4kΩ)



Notes:

- At servicing for outdoor unit, always follow the wiring diagram of outdoor unit.
- In case of connecting MA-Remote controller, please connect MA remote controller cable in an accessory to the connector [1 2]. (Remote controller wire is non-polar.)
- In case of using M-NET, please connect to TB5. (Transmission line is non-polar.)
- Symbols used in wiring diagram above are, ⊙: terminal block, □□□: connector, ●: direct wire connection.
- Please set the switch SW5 according to the power supply voltage.  
Set SW5 to 230V side when the power supply is 230 volts.  
When the power supply is 208 volts, set SW5 to 208V side.
- The setting of the SW2 dip switches differs in the capacity. For the detail, refer to the Fig.1.

LED on indoor board for service

Mark	Meaning	Function
LED1	Main power supply	Main power supply (Indoor unit:208-230V) power on → lamp is lit
LED2	Power supply for MA -Remote controller	Power supply for MA -Remote controller on → lamp is lit

<Fig.1>

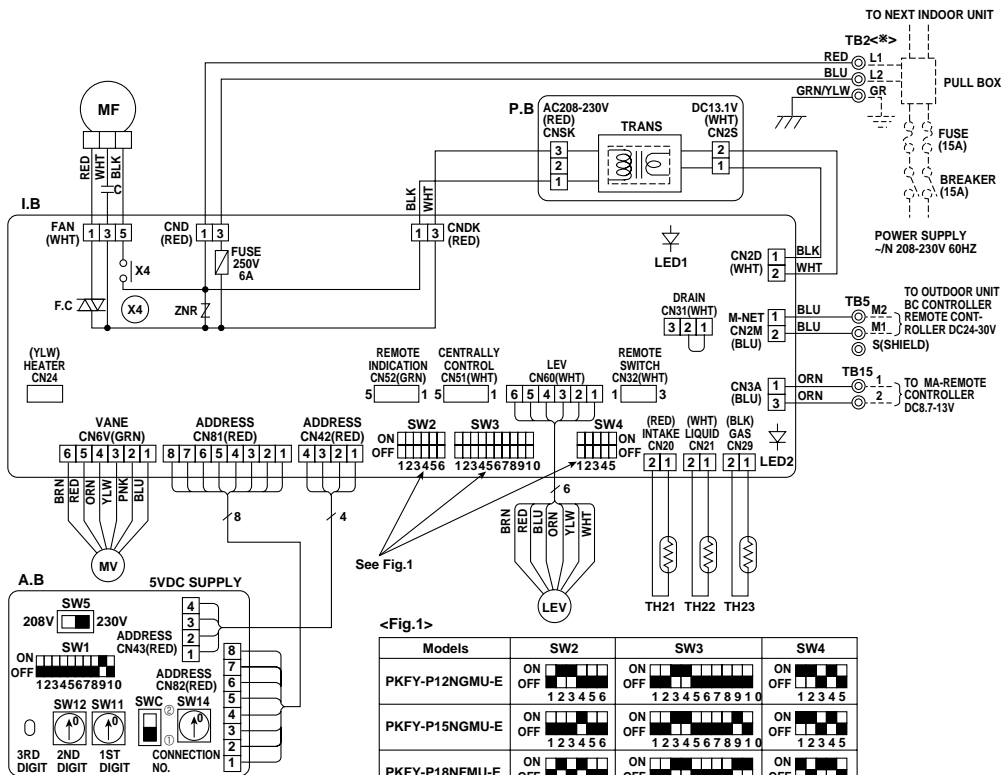
MODELS	SW2
PKFY-P06NAMU-E	ON <input type="checkbox"/> OFF <input type="checkbox"/> 1 2 3 4
PKFY-P08NAMU-E	ON <input type="checkbox"/> OFF <input type="checkbox"/> 1 2 3 4

<\*>Use Copper Supply Wire.

**PKFY-P12NGMU-E PKFY-P15NGMU-E  
PKFY-P18NFMU-E PKFY-P24NFMU-E  
PKFY-P30NFMU-E**

**[LEGEND]**

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
I. B	INDOOR CONTROLLER BOARD	C	CAPACITOR (FAN MOTOR)	TH23	THERMISTOR PIPE TEMP. DETECTION/GAS (32°F/15kΩ, 77°F/5.4kΩ)
CN24	CONNECTOR HEATER	LEV	LINEAR EXPANSION VALVE	A. B	CIRCUIT BOARD (ADDRESS)
CN32	REMOTE SWITCH	MF	FAN MOTOR (WITH INNER THERMOSTAT)	SW1	SWITCH MODE SELECTION
CN51	CENTRALLY CONTROL	MV	VANE MOTOR	SW5	VOLTAGE SELECTION
CN52	REMOTE INDICATION	P. B	INDOOR POWER BOARD	SW11	ADDRESS SETTING 1ST DIGIT
F.C	FAN PHASE CONTROL	TB2	TERMINAL	SW12	ADDRESS SETTING 2ND DIGIT
FUSE	FUSE (6A/250V)	TB5	BLOCK	SW14	CONNECTION No.
SW2	SWITCH CAPACITY CODE	TB15	TERMINAL	SWC	OPTION SELECTOR
SW3	MODE SELECTION	TH21	THERMISTOR		
SW4	MODEL SELECTION				
X4	AUX. RELAY (FAN MOTOR)	TH22	THERMISTOR		
ZNR	VARIATOR				



<\*>Use Copper Supply Wire.

**Notes:**

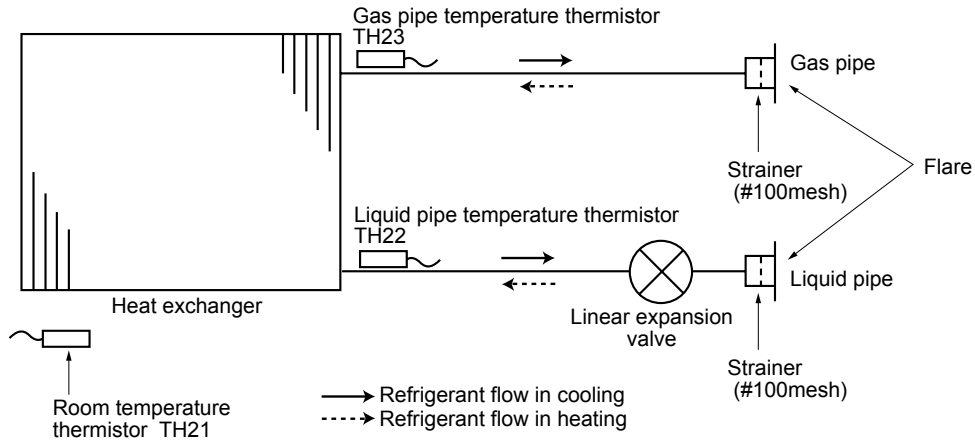
- At servicing for outdoor unit, always follow the wiring diagram of outdoor unit.
- In case of using MA-Remote controller, please connect to TB15. (Remote controller wire is non-polar.)
- In case of using M-NET, please connect to TB5. (Transmission line is non-polar.)
- Symbol [S] of TB5 is the shield wire connection.
- Symbols used in wiring diagram above are, ⊙:terminal block, □:connector.
- The setting of the SW2/SW3/SW4 dip switches differs in the capacity. For the detail, refer to Fig.1.
- Please set the switch SW5 according to the power supply voltage.  
Set SW5 to 230V side when the power supply is 230 volts.  
When the power supply is 208 volts, set SW5 to 208V side.

**LED on indoor board for service**

Mark	Meaning	Function
LED1	Main power supply	Main power supply (Indoor unit: 208-230V) power on → lamp is lit
LED2	Power supply for MA -Remote controller	Power supply for MA -Remote controller on → lamp is lit

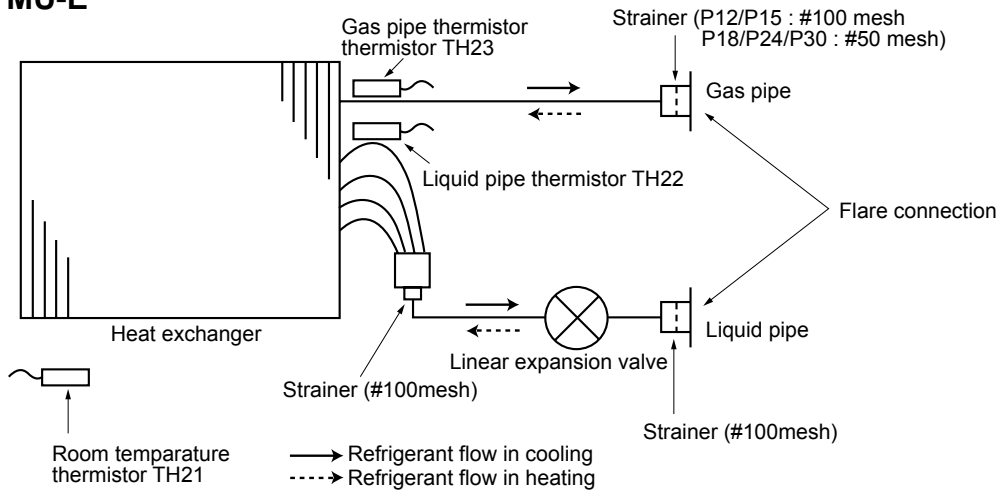
# REFRIGERANT SYSTEM DIAGRAM

**PKFY-P06NAMU-E**  
**PKFY-P08NAMU-E**



Item	Service Ref.	PKFY-P06/P08NAMU-E
Gas pipe		1/2"
Liquid pipe		1/4"

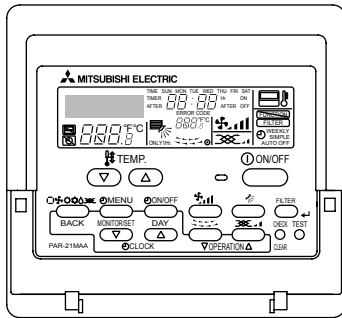
**PKFY-P12NGMU-E**  
**PKFY-P15NGMU-E**  
**PKFY-P18NFMU-E**  
**PKFY-P24NFMU-E**  
**PKFY-P30NFMU-E**



Item	Service Ref.	PKFY-P12/P15NGMU-E	PKFY-P18NFMU-E	PKFY-P24/P30NFMU-E
Gas pipe		1/2"	1/2" / 5/8" (Compatible)	5/8"
Liquid pipe		1/4"	1/4" / 3/8" (Compatible)	3/8"

## INDOOR UNIT CONTROL

### 8-1. COOL OPERATION



#### <How to operate>

- ① Press POWER ON/OFF button.
  - ② Press the operation MODE button to display COOL.
  - ③ Press the TEMP. button to set the desired temperature.
- NOTE:** The set temperature changes 2°F when the  $\nabla$  or  $\Delta$  button is pressed one time. Cooling 67 to 87°F.

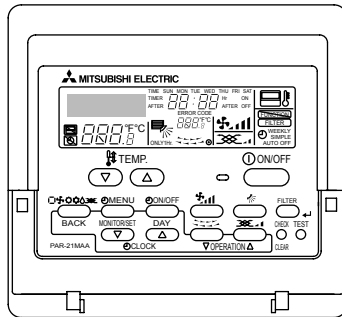
Control modes	Control details	Remarks						
1. Thermoregulating function	1-1. Thermoregulating function (Function to prevent restarting for 3 minutes) <ul style="list-style-type: none"> <li>• Room temperature <math>\geq</math> desired temperature + 2 °F ...Thermo ON</li> <li>• Room temperature <math>\leq</math> desired temperature ...Thermo OFF</li> </ul>							
	1-2. Anti-freezing control <p>Detected condition : When the liquid pipe temp. (TH22) is 32 °F or less in 16 minutes from compressors start up, anti-freezing control starts and the thermo OFF.</p> <p>Released condition : The timer which prevents reactivating is set for 3 minutes, and anti- freezing control is cancelled when any one of the following conditions is satisfied.</p> <ol style="list-style-type: none"> <li>① Liquid pipe temp. (TH22) turns to be 50 °F or above.</li> <li>② The condition of the thermo OFF has become complete by thermoregulating, etc.</li> <li>③ The operation modes becomes mode other than COOL.</li> <li>④ The operation stops.</li> </ol>							
2. Fan	By the remote controller setting (switch of 4 speeds or 2 speeds) <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Type</th> <th>Fan speed notch</th> </tr> </thead> <tbody> <tr> <td>4 speeds</td> <td>[Low], [Med2], [Med1], [High]</td> </tr> <tr> <td>2 speeds</td> <td>[Low], [High]</td> </tr> </tbody> </table>	Type	Fan speed notch	4 speeds	[Low], [Med2], [Med1], [High]	2 speeds	[Low], [High]	
Type	Fan speed notch							
4 speeds	[Low], [Med2], [Med1], [High]							
2 speeds	[Low], [High]							

To be continued on the next page



From the preceding page

Control modes	Control details	Remarks
<p>3. Drain pump  <b>Except for</b>  <b>PKFY-P06NAMU-E</b>  <b>PKFY-P08NAMU-E</b></p>	<p>3-1. Drain pump control</p> <ul style="list-style-type: none"> <li>• Always drain pump ON during the COOL and DRY mode operation. (Regardless of the thermo ON/ OFF)</li> <li>• When the operation mode has changed from the COOL or DRY to the others (including Stop), OFF the control after the drain pump ON for 3 minutes.</li> </ul> <p><b>Drain sensor function</b></p> <ul style="list-style-type: none"> <li>• Energize drain sensor at a fixed voltage for a fixed duration. After energizing, compare the drain sensor's temperature to the one before energizing, and judge whether the sensor is in the air or in the water.</li> </ul> <p><b>Basic control system</b></p> <ul style="list-style-type: none"> <li>• While drain pump is turned on, repeat the following control system and judge whether the sensor is in the air or in the water.</li> </ul> <ul style="list-style-type: none"> <li>• Drain sensor temperature rise (<math>\Delta t</math>)</li> <li>• Temperature of drain sensor before current is applied (<math>T_0</math>)</li> <li>• Temperature of drain sensor after current is applied (<math>T_1</math>)</li> </ul> <p>[ <math>\Delta t = T_1 - T_0</math> ]</p>	<p>Drain sensor  Indoor control  P.C. board  CN31</p> <p>If the unit is without the drain sensor, install the jumper connector. Indoor control P.C. board CN31</p> <p>When installing the jumper connector, determine to detect compulsorily in the air.</p>
<p>4. Vane  (up/ down vane change)</p>	<p>(1) Initial setting : Start at COOL mode and horizontal vane.  (2) Vane position : Horizontal →Downward A →Downward B →Downward C →Swing</p> <div style="border: 1px dashed black; padding: 5px; margin: 10px 0;"> <p>PKFY-P06NAMU-E and PKFY-P08NAMU-E is not equipped with the swing function.  : Horizontal →Downward A →Downward B →Downward C</p> </div> <p>(3) In case of PKFY-P06/P08NAMU-E and PKFY-P12/P15NGMU-E :  Restriction of the downward vane setting  When setting the downward vane A, B or C in [Med1], [Med2] or [Low] of the fan speed notch, the vane changes to horizontal position after 1 hour have passed.</p> <p>In case of PKFY-P18/P24NFMU-E and PKFY-P30NFMU-E :  Restriction of the downward vane setting  When setting the downward vane A, B or C in [Low] of the fan speed notch, the vane changes to horizontal position after 1 hour have passed.</p>	<p>"SET FOR 1 HOUR" appears on the wired remote controller.</p>

## 8-2. DRY OPERATION

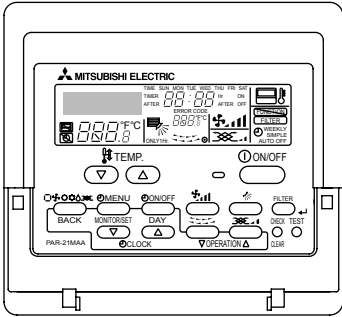


### <How to operate>

- ① Press POWER ON/OFF button.
  - ② Press the operation MODE button to display DRY.
  - ③ Press the TEMP. button to set the desired temperature.
- NOTE:** The set temperature changes 2°F when the  or  button is pressed one time. Dry 67 to 87°F.

Control modes	Control details	Remarks																														
1. Thermoregulating function	<p>1-1. Thermoregulating function (Function to prevent restarting for 3 minutes) Setting the Dry thermo by the thermoregulating signal and the room temperature (TH1). Dry thermo ON Room temperature <math>\geq</math> desired temperature + 2 °F Dry thermo OFF Room temperature <math>\leq</math> desired temperature</p> <table border="1"> <thead> <tr> <th rowspan="2">Room temperature</th> <th colspan="2">3 min. passed since starting operation</th> <th rowspan="2">Dry thermo ON time (min)</th> <th rowspan="2">Dry thermo OFF time (min)</th> </tr> <tr> <th>Thermoregulating signal</th> <th>Room temperature (T1)</th> </tr> </thead> <tbody> <tr> <td rowspan="5">Over 64 °F</td> <td rowspan="4">ON</td> <td>T1 <math>\geq</math> 83 °F</td> <td>9</td> <td>3</td> </tr> <tr> <td>83°F &gt; T1 <math>\geq</math> 79 °F</td> <td>7</td> <td>3</td> </tr> <tr> <td>79°F &gt; T1 <math>\geq</math> 75 °F</td> <td>5</td> <td>3</td> </tr> <tr> <td>75°F &gt; T1</td> <td>3</td> <td>3</td> </tr> <tr> <td>OFF</td> <td>Unconditional</td> <td>3</td> <td>10</td> </tr> <tr> <td>Less than 64 °F</td> <td colspan="3">Dry thermo OFF</td> <td></td> </tr> </tbody> </table>	Room temperature	3 min. passed since starting operation		Dry thermo ON time (min)	Dry thermo OFF time (min)	Thermoregulating signal	Room temperature (T1)	Over 64 °F	ON	T1 $\geq$ 83 °F	9	3	83°F > T1 $\geq$ 79 °F	7	3	79°F > T1 $\geq$ 75 °F	5	3	75°F > T1	3	3	OFF	Unconditional	3	10	Less than 64 °F	Dry thermo OFF				
	Room temperature		3 min. passed since starting operation				Dry thermo ON time (min)	Dry thermo OFF time (min)																								
Thermoregulating signal		Room temperature (T1)																														
Over 64 °F	ON	T1 $\geq$ 83 °F	9	3																												
		83°F > T1 $\geq$ 79 °F	7	3																												
		79°F > T1 $\geq$ 75 °F	5	3																												
		75°F > T1	3	3																												
	OFF	Unconditional	3	10																												
Less than 64 °F	Dry thermo OFF																															
	<p>1-2. Frozen prevention control No control function</p>																															
2. Fan	<p>Indoor fan operation controlled depends on the compressor conditions.</p> <table border="1"> <thead> <tr> <th>Dry thermo</th> <th>Fan speed notch</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>[Low]</td> </tr> <tr> <td>OFF</td> <td>Stop</td> </tr> </tbody> </table> <p>Note: Remote controller setting is not acceptable.</p>	Dry thermo	Fan speed notch	ON	[Low]	OFF	Stop																									
Dry thermo	Fan speed notch																															
ON	[Low]																															
OFF	Stop																															
3. Drain pump Except for PKFY-P06NAMU-E PKFY-P08NAMU-E	Same control as COOL operation																															
4. Vane (up/ down vane change)	Same control as COOL operation																															

### 8-3. FAN OPERATION

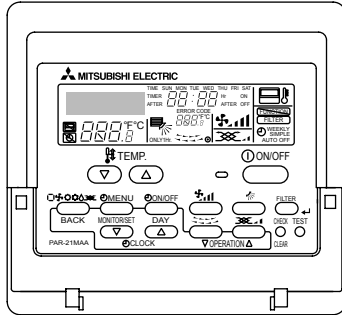


**<How to operate>**

- ① Press POWER ON/OFF button.
- ② Press the operation MODE button to display FAN.

Control modes	Control details	Remarks						
1. Fan	Set by remote controller. <table border="1" data-bbox="399 808 1005 924" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Type</th> <th>Fan speed notches</th> </tr> </thead> <tbody> <tr> <td>4 speeds type</td> <td>[Low], [Med2], [Med1], [High]</td> </tr> <tr> <td>2 speeds type</td> <td>[Low], [High]</td> </tr> </tbody> </table>	Type	Fan speed notches	4 speeds type	[Low], [Med2], [Med1], [High]	2 speeds type	[Low], [High]	
Type	Fan speed notches							
4 speeds type	[Low], [Med2], [Med1], [High]							
2 speeds type	[Low], [High]							
2. Vane (up/ down vane change)	Same as the control performed during the COOL operation, but with no restriction on the vane's downward blow setting.							

## 8-4. HEAT OPERATION



### <How to operate>

- ① Press POWER ON/OFF button.
- ② Press the operation MODE button to display HEAT.
- ③ Press the TEMP. button to set the desired temperature.

**NOTE:** The set temperature changes 2°F when the  $\nabla$  or  $\Delta$  button is pressed one time. Heating 63 to 83°F.

### <Display in HEAT operation>

#### [DEFROST]

The [DEFROST] symbol is only displayed during the defrost operation.

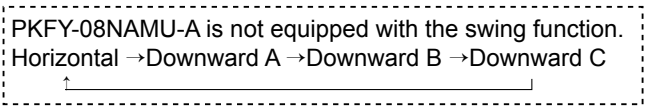
#### [STANDBY]

The [STANDBY] symbol is only displayed from the time the heating operation starts until the heated air begins to blow.

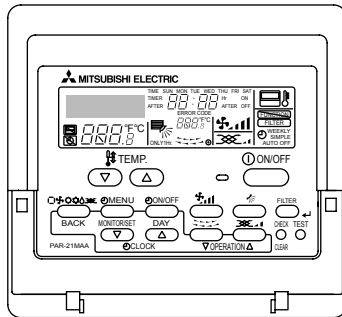
Control modes	Control details	Remarks
1. Thermoregulating function	1-1. Thermoregulating function (Function to prevent restarting for 3 minutes) <ul style="list-style-type: none"> <li>• Room temp. <math>\cong</math> desired temp. 30 °F ...Thermo ON</li> <li>• Room temp. <math>\cong</math> desired temp. ...Thermo OFF</li> </ul>	
2. Fan	Controlled by the remote controller (4-speed) Give priority to under-mentioned controlled mode <ol style="list-style-type: none"> <li>2-1. Hot adjuster mode</li> <li>2-2. Preheating exclusion mode</li> <li>2-3. Thermo OFF mode (When the compressor off by the thermoregulating)</li> <li>2-4. Defrosting mode</li> </ol>	Fan speed change notch Refer to the model function table
	2-1. Hot adjuster mode The fan controller becomes the hot adjuster mode for the following conditions. <ol style="list-style-type: none"> <li>① When starting the HEAT operation</li> <li>② When starting the compressor by the thermoregulating</li> <li>③ When releasing the HEAT defrosting operation</li> </ol> <div style="text-align: center;"> <p>Hot adjuster mode *1</p> </div> <p>A: HOT adjuster mode start            B: 5 min have passed since the condition A or the indoor Condenser/Evaporator temp. turned to be 95 °F or more            C: 2 min have passed since the condition B (Terminating the hot adjuster mode)</p>	*1 "STAND BY" will be displayed during the hot adjuster mode.

To be continued on the next page

**From the preceding page**



Control modes	Control details	Remarks	
2. Fan	2-2. Residual heat exclusion mode When the condition changes the auxiliary heater ON to OFF (thermoregulating or operation stop, etc), the indoor fan operates in [Low] mode for 1 minute.	This control is same for the model without auxiliary heater.	
	2-3. Thermo OFF mode When the thermoregulating function changes to OFF, the indoor fan operates in [Extra low].		
	2-4. Defrosting mode The indoor fan stops.		
3. Vane control (Up/down vane change)	(1) Initial setting : OFF → HEAT…[last setting] When changing the mode from exception of HEAT to HEAT operation. …[Downward C]  (2) Vane position : Horizontal →Downward A →Downward B →Downward C →Swing   (3) Restriction of vane position ① The vane is horizontally fixed for the following modes. (The control by the remote controller is temporarily invalidated and control by the unit.) <ul style="list-style-type: none"> <li>• Thermo OFF</li> <li>• Hot adjuster [Extra low] mode</li> <li>• Heat defrost mode</li> </ul>		

## 8-5. AUTO OPERATION [AUTOMATIC COOL/HEAT CHANGE OVER OPERATION]



### <How to operate>

- ① Press POWER ON/OFF button.
- ② Press the operation MODE button to display AUTO.
- ③ Press the TEMP. button to set the desired temperature.

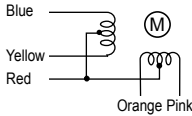
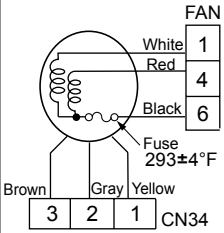
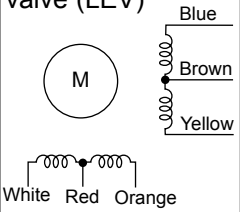
**NOTE:** The set temperature changes 2°F when the  or  button is pressed one time. Automatic 67 to 83°F.  
 “AUTO” works to change by itself the operation mode either to cooling or heating to the room temperature.

Control modes	Control details	Remarks
1. Initial value of operation mode	HEAT mode for room temperature < Desired temperature COOL mode for room temperature $\geq$ Desired temperature	
2. Mode change	(1) HEAT mode $\rightarrow$ COOL mode Room temperature $\geq$ Desired temperature + 3 °F. or 3 min. has passed (2) COOL mode $\rightarrow$ HEAT mode Room temperature $\leq$ Desired temperature - 3 °F. or 3 min. has passed	
3. COOL mode	Same control as cool operation	
4. HEAT mode	Same control as heat operation	

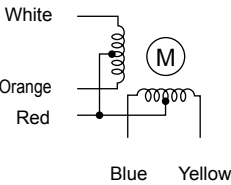
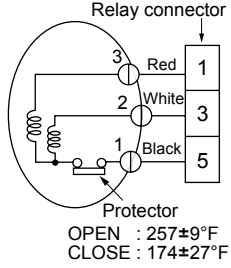
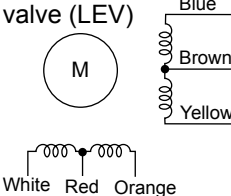
### 9-1. HOW TO CHECK

#### PKFY-P06NAMU-E

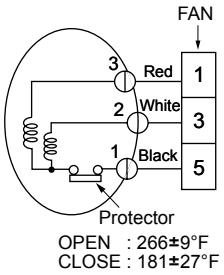
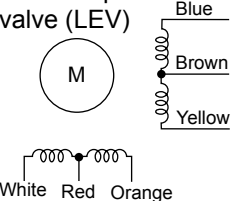
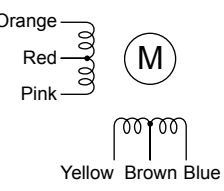
#### PKFY-P08NAMU-E

Part Name	Check points														
Room temperature thermistor (TH21) Liquid pipe temperature thermistor (TH22) Gas pipe temperature thermistor (TH23)	Disconnect the connector, then measure the resistance using a tester. (Surrounding temperature 50°F~86°F) <table border="1" style="margin-top: 10px;"> <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>	Normal	Abnormal	4.3kΩ~9.6kΩ	Open or short										
Normal	Abnormal														
4.3kΩ~9.6kΩ	Open or short														
Vane motor (MV) 	① Measure the resistance between the terminals using a tester. (Surrounding temperature 77°F.) <table border="1" style="margin-top: 10px;"> <thead> <tr> <th colspan="4">Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>Red-Pink</td> <td>Red-Blue</td> <td>Red-Orange</td> <td>Red-Yellow</td> <td rowspan="2">Open or short</td> </tr> <tr> <td colspan="4" style="text-align: center;">400Ω ± 7%</td> </tr> </tbody> </table>	Normal				Abnormal	Red-Pink	Red-Blue	Red-Orange	Red-Yellow	Open or short	400Ω ± 7%			
Normal				Abnormal											
Red-Pink	Red-Blue	Red-Orange	Red-Yellow	Open or short											
400Ω ± 7%															
Fan motor (MF) 	① Measure the resistance between the terminals using a tester. (Surrounding temperature 68°F.) <table border="1" style="margin-top: 10px;"> <thead> <tr> <th></th> <th>Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>White-Black</td> <td>195Ω</td> <td rowspan="2">Open or short</td> </tr> <tr> <td>Red-Black</td> <td>200Ω</td> </tr> </tbody> </table> ② Without disassembling the parts, measure the electrical pressure of the gray wire (Signal line) and brown wire (GND) while the power is on. <table border="1" style="margin-top: 10px;"> <tbody> <tr> <td style="text-align: center;">Normal</td> <td>           (1) At first, check if the electrical pressure is 12V between the brown wire (GND) and yellow wire (VCC).            (2) Slowly start running the fan. It is normal if while the fan rotate once, the electrical pressure change from 0V to 12V then go back to 0V.         </td> </tr> <tr> <td style="text-align: center;">Abnormal</td> <td>If the electrical pressure stay at around 0V or 10V, it means the fan motor has the defects.</td> </tr> </tbody> </table>		Normal	Abnormal	White-Black	195Ω	Open or short	Red-Black	200Ω	Normal	(1) At first, check if the electrical pressure is 12V between the brown wire (GND) and yellow wire (VCC). (2) Slowly start running the fan. It is normal if while the fan rotate once, the electrical pressure change from 0V to 12V then go back to 0V.	Abnormal	If the electrical pressure stay at around 0V or 10V, it means the fan motor has the defects.		
	Normal	Abnormal													
White-Black	195Ω	Open or short													
Red-Black	200Ω														
Normal	(1) At first, check if the electrical pressure is 12V between the brown wire (GND) and yellow wire (VCC). (2) Slowly start running the fan. It is normal if while the fan rotate once, the electrical pressure change from 0V to 12V then go back to 0V.														
Abnormal	If the electrical pressure stay at around 0V or 10V, it means the fan motor has the defects.														
Linear expansion valve (LEV) 	Disconnect the connector then measure the resistance of valve using a tester. (Coil temperature 68°F) <table border="1" style="margin-top: 10px;"> <thead> <tr> <th colspan="4">Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>White-Red</td> <td>Yellow-Brown</td> <td>Orange-Red</td> <td>Blue-Brown</td> <td rowspan="2">Open or short</td> </tr> <tr> <td colspan="4" style="text-align: center;">150Ω ± 10%</td> </tr> </tbody> </table>	Normal				Abnormal	White-Red	Yellow-Brown	Orange-Red	Blue-Brown	Open or short	150Ω ± 10%			
Normal				Abnormal											
White-Red	Yellow-Brown	Orange-Red	Blue-Brown	Open or short											
150Ω ± 10%															

**PKFY-P12NGMU-E**  
**PKFY-P15NGMU-E**

Parts name	Check points																	
Room temperature thermistor (TH21) Liquid pipe temperature thermistor (TH22) Gas pipe temperature thermistor (TH23)	Disconnect the connector then measure the resistance using a tester. (Surrounding temperature 50°F~86°F) <table border="1" data-bbox="427 457 938 533" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>4.3kΩ~9.6kΩ</td> <td>Open or short</td> </tr> </tbody> </table>				Normal	Abnormal	4.3kΩ~9.6kΩ	Open or short										
Normal	Abnormal																	
4.3kΩ~9.6kΩ	Open or short																	
Vane motor (MV) 	Measure the resistance between the terminals using a tester. (Surrounding temperature 68°F~86°F) <table border="1" data-bbox="427 659 1166 848" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Connector</th> <th>Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>Red — Yellow</td> <td rowspan="4" style="text-align: center;">186Ω~214Ω</td> <td rowspan="4" style="text-align: center;">Open or short</td> </tr> <tr> <td>Red — Blue</td> </tr> <tr> <td>Red — Orange</td> </tr> <tr> <td>Red — White</td> </tr> </tbody> </table>				Connector	Normal	Abnormal	Red — Yellow	186Ω~214Ω	Open or short	Red — Blue	Red — Orange	Red — White					
Connector	Normal	Abnormal																
Red — Yellow	186Ω~214Ω	Open or short																
Red — Blue																		
Red — Orange																		
Red — White																		
Fan motor (MF) 	Measure the resistance between the terminals using a tester. (Surrounding temperature 68°F) <table border="1" data-bbox="427 961 1203 1115" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Motor terminal or Relay connector</th> <th>Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>Red-Black</td> <td rowspan="2" style="text-align: center;">141.2Ω</td> <td rowspan="2" style="text-align: center;">Open or short</td> </tr> <tr> <td>White-Black</td> <td style="text-align: center;">131.5Ω</td> </tr> </tbody> </table>				Motor terminal or Relay connector	Normal	Abnormal	Red-Black	141.2Ω	Open or short	White-Black	131.5Ω						
Motor terminal or Relay connector	Normal	Abnormal																
Red-Black	141.2Ω	Open or short																
White-Black			131.5Ω															
Linear expansion valve (LEV) 	Disconnect the connector then measure the resistance with the tester. (Surrounding temperature 68°F) <table border="1" data-bbox="427 1314 1287 1465" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="4">Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>White-Red</td> <td>Yellow-Brown</td> <td>Orange-Red</td> <td>Blue-Brown</td> <td rowspan="2" style="text-align: center;">Open or short</td> </tr> <tr> <td colspan="4" style="text-align: center;">150Ω ±10%</td> </tr> </tbody> </table>				Normal				Abnormal	White-Red	Yellow-Brown	Orange-Red	Blue-Brown	Open or short	150Ω ±10%			
Normal				Abnormal														
White-Red	Yellow-Brown	Orange-Red	Blue-Brown	Open or short														
150Ω ±10%																		

**PKFY-P18NFMU-E**  
**PKFY-P24NFMU-E**  
**PKFY-P30NFMU-E**

Parts name	Check points																		
Room temperature thermistor (TH21) Liquid pipe temperature thermistor (TH22) Gas pipe temperature thermistor (TH23)	Disconnect the connector then measure the resistance using a tester. (Surrounding temperature 50°F~86°F) <table border="1" style="margin-left: 20px;"> <tr> <td>Normal</td> <td>Abnormal</td> </tr> <tr> <td>4.3kΩ~9.6kΩ</td> <td>Open or short</td> </tr> </table>	Normal	Abnormal	4.3kΩ~9.6kΩ	Open or short														
Normal	Abnormal																		
4.3kΩ~9.6kΩ	Open or short																		
Fan motor (MF)  <p>Protector            OPEN : 266±9°F            CLOSE : 181±27°F</p>	Measure the resistance between the terminals using a tester. (Surrounding temperature 68°F) <table border="1" style="margin-left: 20px;"> <tr> <th rowspan="2">Motor terminal or Relay connector</th> <th colspan="2">Normal</th> <th rowspan="2">Abnormal</th> </tr> <tr> <th>PKFY-P18/P24NFMU-E</th> <th>PKFY-P30NFMU-E</th> </tr> <tr> <td>Red-Black</td> <td>99.5Ω ±10%</td> <td>62.6Ω ±10%</td> <td rowspan="2">Open or short</td> </tr> <tr> <td>White-Black</td> <td>103.5Ω ±10%</td> <td>74.0Ω ±10%</td> </tr> </table>	Motor terminal or Relay connector	Normal		Abnormal	PKFY-P18/P24NFMU-E	PKFY-P30NFMU-E	Red-Black	99.5Ω ±10%	62.6Ω ±10%	Open or short	White-Black	103.5Ω ±10%	74.0Ω ±10%					
Motor terminal or Relay connector	Normal		Abnormal																
	PKFY-P18/P24NFMU-E	PKFY-P30NFMU-E																	
Red-Black	99.5Ω ±10%	62.6Ω ±10%	Open or short																
White-Black	103.5Ω ±10%	74.0Ω ±10%																	
Linear expansion valve (LEV) 	Disconnect the connector then measure the resistance of valve using a tester. (Surrounding temperature 68°F) <table border="1" style="margin-left: 20px;"> <tr> <th colspan="4">Normal</th> <th rowspan="2">Abnormal</th> </tr> <tr> <th>White-Red</th> <th>Yellow-Brown</th> <th>Orange-Red</th> <th>Blue-Brown</th> </tr> <tr> <td colspan="4" style="text-align: center;">150Ω ±10%</td> <td rowspan="2">Open or short</td> </tr> <tr> <td colspan="4"></td> </tr> </table>	Normal				Abnormal	White-Red	Yellow-Brown	Orange-Red	Blue-Brown	150Ω ±10%				Open or short				
Normal				Abnormal															
White-Red	Yellow-Brown	Orange-Red	Blue-Brown																
150Ω ±10%				Open or short															
Vane motor (MV) 	Measure the resistance between the terminals using a tester. (Surrounding temperature 68°F~86°F) <table border="1" style="margin-left: 20px;"> <tr> <th>Connector</th> <th>Normal</th> <th>Abnormal</th> </tr> <tr> <td>Brown — Yellow</td> <td rowspan="4" style="text-align: center;">186~214Ω</td> <td rowspan="4" style="text-align: center;">Open or short</td> </tr> <tr> <td>Brown — Blue</td> </tr> <tr> <td>Red — Orange</td> </tr> <tr> <td>Red — Pink</td> </tr> </table>	Connector	Normal	Abnormal	Brown — Yellow	186~214Ω	Open or short	Brown — Blue	Red — Orange	Red — Pink									
Connector	Normal	Abnormal																	
Brown — Yellow	186~214Ω	Open or short																	
Brown — Blue																			
Red — Orange																			
Red — Pink																			

<Thermistor characteristic graph>

Thermistor for lower temperature

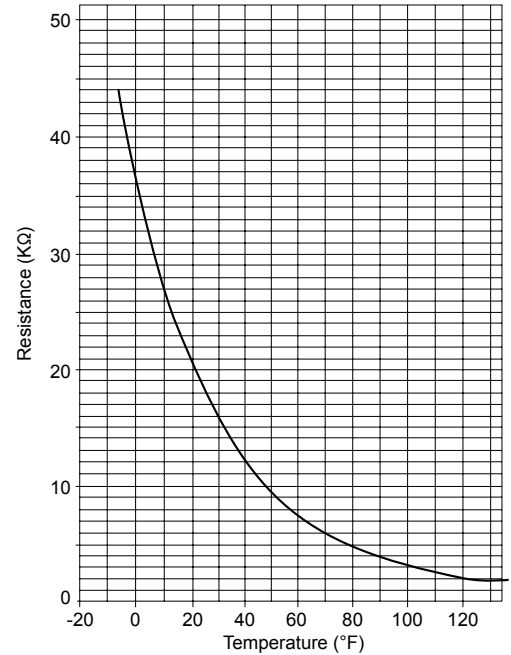
Room temperature thermistor (TH21)  
Liquid pipe temperature thermistor (TH22)  
Gas pipe temperature thermistor (TH23)

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

$$R_t=15 \exp \left\{ 3480 \left( \frac{1}{273+(t-32)/1.8} - \frac{1}{273} \right) \right\}$$

30°F	15.8kΩ
50°F	9.6kΩ
70°F	6.0kΩ
80°F	4.8kΩ
90°F	3.9kΩ
100°F	3.2kΩ

< Thermistor for lower temperature >

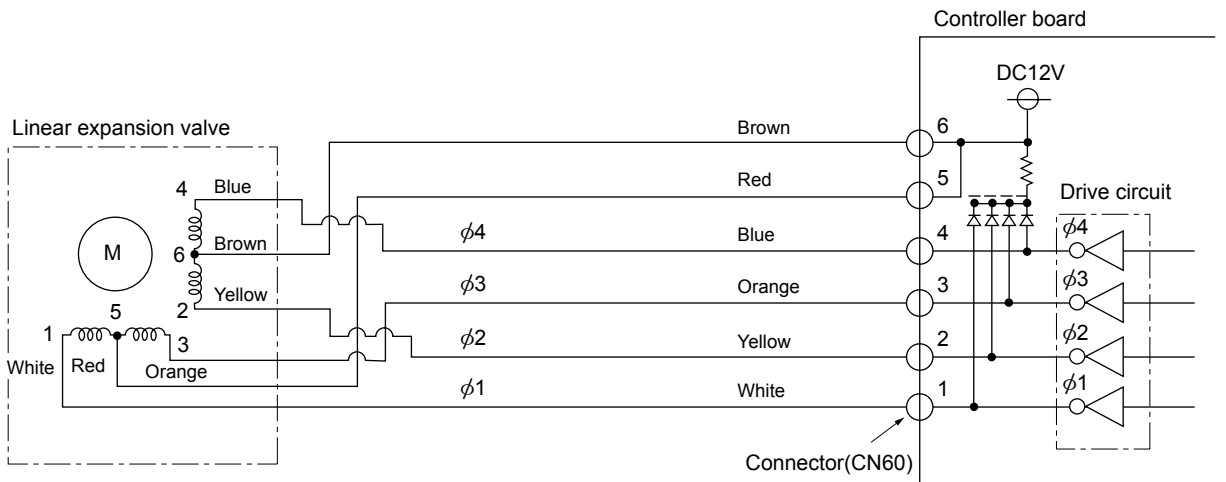


Linear expansion valve

① Operation summary of the linear expansion valve

- Linear expansion valve open/close through stepping motor after receiving the pulse signal from the indoor controller board.
- Valve position can be changed in proportion to the number of pulse signal.

<Connection between the indoor controller board and the linear expansion valve>



Note : Since the number of the connector at the controller board side and the relay connector are different, follow the color of the lead wire.

### <Output pulse signal and the valve operation>

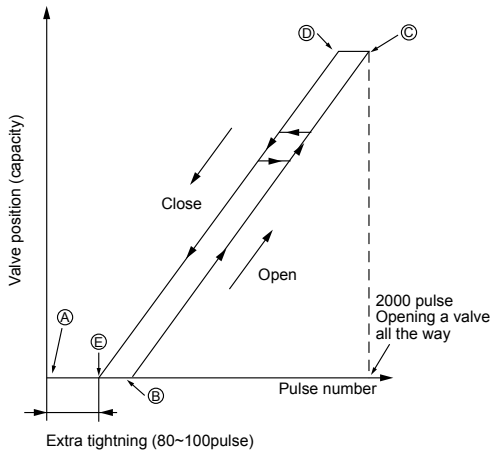
Output (Phase)	Output			
	1	2	3	4
$\phi 1$	ON	OFF	OFF	ON
$\phi 2$	ON	ON	OFF	OFF
$\phi 3$	OFF	ON	ON	OFF
$\phi 4$	OFF	OFF	ON	ON

Closing a valve : 1 → 2 → 3 → 4 → 1  
 Opening a valve : 4 → 3 → 2 → 1 → 4

The output pulse shifts in above order.

- \* 1. When linear expansion valve operation stops, all output phase become OFF.
- 2. At phase interruption or when phase does not shift in order, motor does not rotate smoothly and motor will lock and vibrates.

#### ② Linear expansion valve operation



- \* When the switch is turned on, 2200 pulse closing valve signal will be send till it goes to A point in order to define the valve position.

When the valve moves smoothly, there is no noise or vibration occurring from the linear expansion valve. However, when the pulse number moves from E to A or when the valve is locked, more noise can be heard than normal situation.

- \* Noise can be detected by placing the ear against the screw driver handle while putting the screw driver to the linear expansion valve.

#### ③ Trouble shooting

Symptom	Check points	Countermeasures
Operation circuit failure of the micro processor	Disconnect the connector on the controller board, then connect LED for checking.  Pulse signal will be sent out for 10 seconds as soon as the main switch is turn on. If there is LED with lights on or lights off, it means the operation circuit is abnormal.	Exchange the indoor controller board at drive circuit failure.
Linear expansion valve mechanism is locked.	Motor will idle and make ticking noise when motor is operated while the linear expansion valve is locked. This ticking sound is the sign of the abnormality.	Exchange the linear expansion vale.
Short or breakage of the motor coil of the linear expansion valve	Measure the resistance between the each coil (red-white, red-orange, brown-yellow, brown-blue) using a tester. It is normal if the resistance is in the range of $150\Omega \pm 10\%$	Exchange the linear expansion valve.
Valve does not close completely (thermistior leaking).	To check the linear expansion valve, operate the indoor unit in fan mode and at the same time operate other indoor units in cooling mode, then check the pipe temperature <liquid pipe temperature> of the indoor unit by the outdoor multi controller board operation monitor. During fan operation, linear expansion valve is closed completely and if there are some leaking, detecting temperature of the thermistor will go lower. If the detected temperature is much lower than the temperature indicated in the remote controller, it means the valve is not closed all the way. It is not necessary to exchange the linear expansion valve, if the leakage is small and not making any trouble. 	If large amount of thermistor is leaked, exchange the linear expansion valve.
Wrong connection of the connector or contact failure	Check the color of lead wire and missing terminal of the connector.	Disconnect the connector at the controller board, then check the continuity.


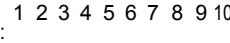
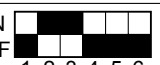
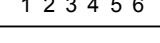
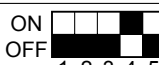
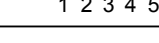
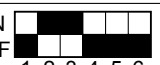
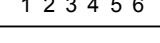
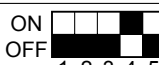
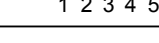
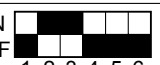
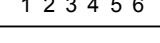
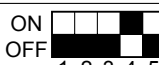
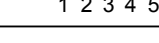
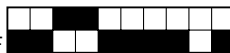
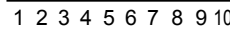

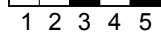
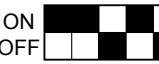
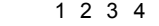
## 9-2. FUNCTION OF DIP SWITCH

### PKFY-P06NAMU-E

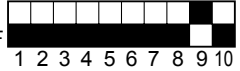
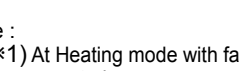



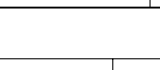





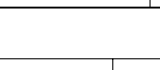





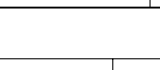



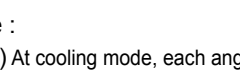
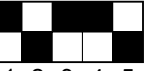
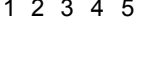

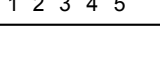
### PKFY-P08NAMU-E

Switch	Pole	Function	Operation by switch		Remarks																						
			ON	OFF																							
SW1 Mode Selection	1	Thermistor <intake temperature detection> position	Built-in remote controller	Indoor unit	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Address board</div> <Initial setting> ON <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr></table> OFF <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr></table>	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10		
	1	2	3	4		5	6	7	8	9	10																
	1	2	3	4		5	6	7	8	9	10																
	2	Filter clogging detection	Provided	Not provided																							
	3	Filter sign indication	2,500hr	100hr																							
	4	Air intake (*2)	Not effective	Not effective																							
	5	Remote indication switching	Thermostat ON signal indication	Fan output indication																							
	6	Humidifier control	Fan operation at Heating mode	Heat thermostat ON is operating																							
	7	Air flow set in case of heat thermo OFF	Low (*1)	Extra low (*1)																							
	8		Setting air flow (*1)	Depends on SW1-7																							
9	Auto restart function	Effective	Not effective																								
10	Power ON/OFF	Effective	Not effective																								
SW2 Capacity code setting	1~4	<table border="1" style="width: 100%; text-align: center;"> <tr> <th>MODELS</th> <th>PKFY-P06NAMU-E</th> <th>PKFY-P08NAMU-E</th> </tr> <tr> <td>SW 2</td> <td>ON <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table> OFF <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table></td> <td>ON <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table> OFF <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table></td> </tr> </table>			MODELS	PKFY-P06NAMU-E	PKFY-P08NAMU-E	SW 2	ON <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table> OFF <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table>	1	2	3	4	1	2	3	4	ON <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table> OFF <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table>	1	2	3	4	1	2	3	4	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Indoor controller board</div> Set while the unit is off.  <Initial setting>  Set for each capacity.
		MODELS	PKFY-P06NAMU-E	PKFY-P08NAMU-E																							
SW 2	ON <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table> OFF <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table>	1	2	3	4	1	2	3	4	ON <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table> OFF <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table>	1	2	3	4	1	2	3	4									
1	2	3	4																								
1	2	3	4																								
1	2	3	4																								
1	2	3	4																								
SW3 Function Selection	1	Heat pump / Cooling only	Cooling only	Heat pump	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Indoor controller board</div> Set while the unit is off. <Initial setting> ON <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr></table> OFF <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr></table>	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10		
	1	2	3	4		5	6	7	8	9	10																
	1	2	3	4		5	6	7	8	9	10																
	2	Capacity save	Available	Not available																							
	3	Vane	Available	Not available																							
	4	Reading change of LEV opening on reversion of after defrosting	Not available	Available																							
	5	Vane horizontal angle	Second setting	First setting																							
	6	Vane cooling limit angle setting (*3)	Horizontal angle	Down B, C																							
	7	Indoor linear expansion valve opening	Effective	Not effective																							
	8	Heat 4 degrees up	Not effective	Effective																							
9	Target superheat setting temperature	5 degrees	2 degrees																								
10	Target sub cool setting temperature	15 degrees	10 degrees																								

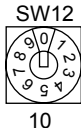
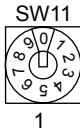


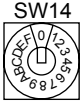

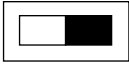

**PKFY-P12NGMU-E**  
**PKFY-P15NGMU-E**

Switch	Pole	Function	Operation by switch		Remarks															
			ON	OFF																
SW1 Mode Selection	1	Thermistor <intake temperature detection> position	Built-in remote controller	Indoor unit	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Address board</div> <Initial setting> ON  OFF  1 2 3 4 5 6 7 8 9 10 Note : (*1) At Heating mode with fan operated. (*2) At Heating mode with heat thermostat operated. (*3) <table border="1" style="font-size: small;"> <tr> <td>SW1-7</td> <td>SW1-8</td> <td>Fan speed</td> </tr> <tr> <td>OFF</td> <td>OFF</td> <td>Extra low</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>Low</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>Setting air flow</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>Stop</td> </tr> </table>	SW1-7	SW1-8	Fan speed	OFF	OFF	Extra low	ON	OFF	Low	OFF	ON	Setting air flow	ON	ON	Stop
	SW1-7	SW1-8	Fan speed																	
	OFF	OFF	Extra low																	
	ON	OFF	Low																	
	OFF	ON	Setting air flow																	
	ON	ON	Stop																	
	2	Filter clogging detection	Provided	Not provided																
	3	Filter cleaning	2,500hr	100hr																
	4	Fresh air intake	Effective	Not effective																
	5	Remote indication switching	Thermostat ON signal indication	Fan output indication																
6	Humidifier control	Always operated while the heating mode *1	Operated depending on the condition *2																	
7	Air flow set in case of	Low *3	Extra low *3																	
8	heat thermo OFF	Setting aire flow *3	Depends on SW1-7																	
9	Auto restart function	Effective	Not effective																	
10	Power ON/OFF	Effective	Not effective																	
SW2 Capacity code setting	1~6	<table border="1" style="font-size: small; margin: auto;"> <tr> <td>MODELS</td> <td>PKFY-P12NGMU-E</td> <td>PKFY-P15NGMU-E</td> </tr> <tr> <td>SW 2</td> <td>ON  OFF </td> <td>ON  OFF </td> </tr> <tr> <td></td> <td>1 2 3 4 5 6</td> <td>1 2 3 4 5 6</td> </tr> </table>			MODELS	PKFY-P12NGMU-E	PKFY-P15NGMU-E	SW 2	ON  OFF 	ON  OFF 		1 2 3 4 5 6	1 2 3 4 5 6	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Indoor controller board</div> Set while the unit is off. <Initial setting> Set for each capacity.						
MODELS	PKFY-P12NGMU-E	PKFY-P15NGMU-E																		
SW 2	ON  OFF 	ON  OFF 																		
	1 2 3 4 5 6	1 2 3 4 5 6																		
SW3 Function Selection	1	Heat pump / Cooling only	Cooling only	Heat pump	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Indoor controller board</div> Set while the unit is off. <Initial setting> ON  OFF  1 2 3 4 5 6 7 8 9 10 Note : (*4) At cooling mode, each angle can be used only 1 hour. (*5) SW 3-9 setting PKFY-P12NGMU-E=OFF PKFY-P15NGMU-E=ON															
	2	Louver	Available	Not available																
	3	Vane	Available	Not available																
	4	Vane swing function	Available	Not available																
	5	Vane horizontal angle	Second setting	First setting																
	6	Vane cooling limit angle setting *4	Horizontal angle	Down B, C																
	7	Indoor linear expansion valve opening	Effective	Not effective																
	8	Heat 4degrees up	Not effective	Effective																
	9	Superheat setting temperature *5	5 degrees	2 degrees																
	10	Sub cool setting temperature	15 degrees	10 degrees																
SW4 Unit Selection	1~5	ON  OFF  1 2 3 4 5			<div style="border: 1px solid black; padding: 2px; display: inline-block;">Indoor controller board</div> Set while the unit is off. <Initial setting> ON  OFF  1 2 3 4 5															

**PKFY-P18NFMU-E**  
**PKFY-P24NFMU-E**  
**PKFY-P30NFMU-E**

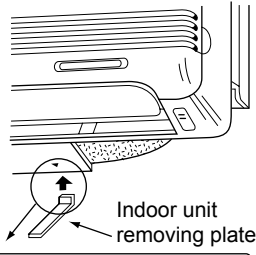
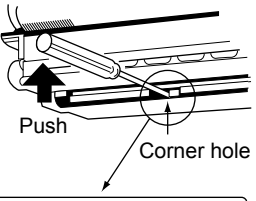
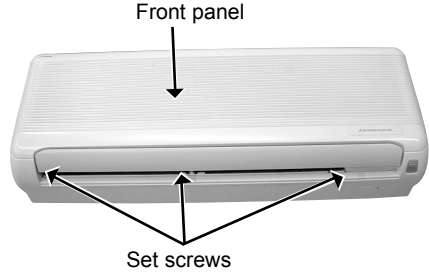
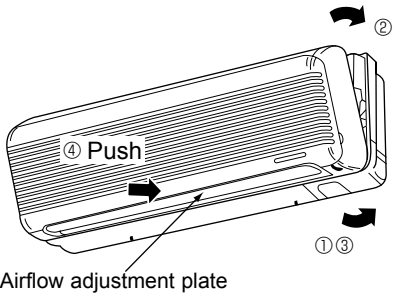
Switch	Pole	Function	Operation by switch		Remarks															
			ON	OFF																
SW1 Mode Selection	1	Thermistor <intake temperature detection> position	Built-in remote controller	Indoor unit	<div style="border: 1px solid black; padding: 2px;">Address board</div> <p>&lt;Initial setting&gt;</p> <p>ON </p> <p>OFF </p> <p>Note :</p> <p>(※1) At Heating mode with fan operated.</p> <p>(※2) At Heating mode with heat thermostat operated.</p> <p>(※3)</p> <table border="1" style="font-size: small;"> <tr> <td>SW1-7</td> <td>SW1-8</td> <td>Fan speed</td> </tr> <tr> <td>OFF</td> <td>OFF</td> <td>Extra low</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>Low</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>Setting air flow</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>Stop</td> </tr> </table>	SW1-7	SW1-8	Fan speed	OFF	OFF	Extra low	ON	OFF	Low	OFF	ON	Setting air flow	ON	ON	Stop
	SW1-7	SW1-8	Fan speed																	
	OFF	OFF	Extra low																	
	ON	OFF	Low																	
	OFF	ON	Setting air flow																	
	ON	ON	Stop																	
	2	Filter clogging detection	Provided	Not provided																
	3	Filter cleaning	2,500hr	100hr																
	4	Fresh air intake	Effective	Not effective																
	5	Remote indication switching	Thermostat ON signal indication	Fan output indication																
6	Humidifier control	Always operated while the heating mode ※1	Operated depending on the condition ※2																	
7	Air flow set in case of heat thermo OFF	Low ※3	Extra low ※3																	
8		Setting air flow ※3	Depends on SW1-7																	
9	Auto restart function	Effective	Not effective																	
10	Power ON/OFF	Effective	Not effective																	
SW2 Capacity code setting	1~6	<table border="1" style="font-size: small; width: 100%;"> <tr> <th>MODEL</th> <th>PKFY-P18NFMU-E</th> <th>PKFY-P24NFMU-E</th> <th>PKFY-P30NFMU-E</th> </tr> <tr> <td>SW 2</td> <td>ON  OFF </td> <td>ON  OFF </td> <td>ON  OFF </td> </tr> </table>			MODEL	PKFY-P18NFMU-E	PKFY-P24NFMU-E	PKFY-P30NFMU-E	SW 2	ON  OFF 	ON  OFF 	ON  OFF 	<div style="border: 1px solid black; padding: 2px;">Indoor controller board</div> <p>Set while the unit is off.</p> <p>&lt;Initial setting&gt;</p> <p>Set for each capacity.</p>							
MODEL	PKFY-P18NFMU-E	PKFY-P24NFMU-E	PKFY-P30NFMU-E																	
SW 2	ON  OFF 	ON  OFF 	ON  OFF 																	
SW3 Function Selection	1	Heat pump / Cooling only	Cooling only	Heat pump	<div style="border: 1px solid black; padding: 2px;">Indoor controller board</div> <p>Set while the unit is off.</p> <p>&lt;Initial setting&gt;</p> <p>ON </p> <p>OFF </p> <p>Note :</p> <p>(※4) At cooling mode, each angle can be used only 1 hour.</p> <p>(※5) SW 3-9, 3-10 setting            PKFY-P18/P24NFMU-E = ON            PKFY-P30NFMU-E = OFF</p>															
	2	Louver	Available	Not available																
	3	Vane	Available	Not available																
	4	Vane swing function	Available	Not available																
	5	Vane horizontal angle	Second setting	First setting																
	6	Vane cooling limit angle setting ※4	Horizontal angle	Down B, C																
	7	Indoor linear expansion valve opening	Effective	Not effective																
	8	Heat 4degrees up	Not effective	Effective																
	9	Superheat setting temperature	5 degrees	2 degrees																
	10	Sub cool setting temperature	15 degrees	10 degrees																
SW4 Unit Selection	1~5	<p>ON </p> <p>OFF </p>			<div style="border: 1px solid black; padding: 2px;">Indoor controller board</div> <p>Set while the unit is off.</p> <p>&lt;Initial setting&gt;</p> <p>ON </p> <p>OFF </p>															

PKFY-P06NAMU-E  
 PKFY-P08NAMU-E  
 PKFY-P12NGMU-E  
 PKFY-P15NGMU-E  
 PKFY-P18NFMU-E  
 PKFY-P24NFMU-E  
 PKFY-P30NFMU-E

Switch	Pole	Operation by switch	Remarks
SW11 1st digit address setting  SW12 2nd digit address setting	Rotary switch	  <p>Address setting should be done when M-NET remote controller is being used.</p>	<p><b>Address board</b></p> <p>Address can be set while the unit is stopped.</p> <p>&lt;Initial setting&gt;</p>  
SW14 Connection No. setting	Rotary switch	 <p>This is the switch to be used when the indoor unit is operated with R2 series outdoor unit as a set.</p>	<p><b>Address board</b></p> <p>&lt;Initial setting&gt;</p> 
SW5 Voltage Selection	2	<p>220V (208V)      240V (230V)</p>  <p>If the unit is used at the 230V area, set the voltage to 230V.        If the unit is used at the 208V, set the voltage to 208V.</p>	<p><b>Address board</b></p> <p>&lt;Initial setting&gt;</p> <p>220V (208V)      240V (230V)</p> 

## PKFY-P06NAMU-E PKFY-P08NAMU-E

Be careful when removing heavy parts.

OPERATING PROCEDURE	PHOTOS&ILLUSTRATIONS
<p><b>1. REMOVING THE LOWER SIDE OF THE INDOOR UNIT FROM THE INSTALLATION PLATE</b></p> <p>When there is removing plate</p> <ol style="list-style-type: none"> <li>(1) Remove the corner box at right lower side of the indoor unit.</li> <li>(2) Insert the removing plate at the back side of the corner box to remove the indoor unit.</li> <li>(3) Remove the hook by pulling the lower side of the indoor unit down as shown in the figure 1.</li> </ol> <p>When there is no removing plate or it can not be used for some reason.</p> <ol style="list-style-type: none"> <li>(1) Remove the front panel.</li> <li>(2) Insert the screw driver to the corner hole at both left and right side as shown in the figure 2.</li> <li>(3) Push it up then, pull down the lower side of indoor unit and remove the hook.</li> </ol>	<p><b>Figure 1</b></p>  <p>Indoor unit removing plate</p> <p><b>Figure 2</b></p>  <p>Push</p> <p>Corner hole</p> <p>Be careful not to damage the airflow adjustment plate with the screw driver.</p> <p>Push Down</p>
<p><b>2. REMOVING THE FRONT PANEL</b></p> <ul style="list-style-type: none"> <li>* Before removing the front panel, leave the open space at upper side of air flow adjustment plate approximately 2 to 3 cm.</li> </ul> <ol style="list-style-type: none"> <li>(1) Remove the screw caps then remove the set screws. (Refer to the Photo 1)</li> <li>(2) Remove the left side of the front panel, then right side.</li> <li>(3) After removing the lower side of the front panel a little, remove it as pulling the upper side toward you.</li> </ol> <ul style="list-style-type: none"> <li>* Please pay attention to the nozzle assembly.</li> </ul> <p><b>INSTALLING THE FRONT PANEL</b></p> <ol style="list-style-type: none"> <li>(1) Insert the lower side of the front panel under the air adjustment plate.</li> <li>(2) Set the upper side of the front panel.</li> <li>(3) Set the lower side of the front panel then fix it with the screws.</li> <li>(4) Press the area indicated as arrow sign and set it to the air conditioner unit.</li> </ol>	<p><b>Photo 1</b></p>  <p>Front panel</p> <p>Set screws</p> <p><b>Figure 3</b></p>  <p>④ Push</p> <p>Airflow adjustment plate</p> <p>① ③</p> <p>②</p>

## OPERATING PROCEDURE

### 3. REMOVING THE INDOOR MICRO CONTROLLER BOARD AND INDOOR POWER BOARD

- (1) Remove the front panel. (Refer to 2)
- (2) Remove the electrical box cover (screw 4 × 10). (Refer to the Photo 2)

#### INDOOR MICRO CONTROLLER BOARD

- (1) Disconnect the following connectors on the indoor micro controller board.  
(connector in front of)
  - CN60, CN5V, CN34, CN29, CN21
  - CN42, CN81, CN3A, CN20
- (2) Pull out the indoor micro controller board toward you, then disconnect the rest of connectors.
  - CN53M, CN35M (See the Photo 3)

#### INDOOR POWER BOARD

- (1) Disconnect the following connectors on the indoor power board.
  - FAN, CN53P, CN35P, CN2M, CND
- (2) Remove the screws of the indoor power board, then pull out the indoor power board toward you. (See the Photo 3)

## PHOTOS&ILLUSTRATIONS

Photo 2

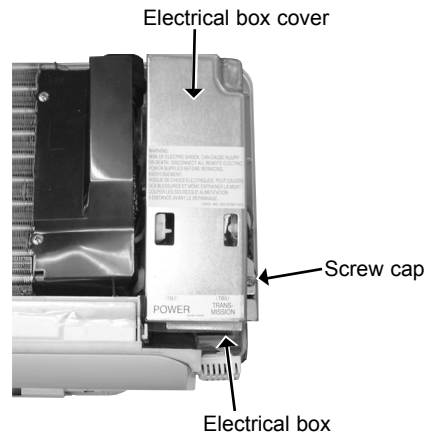
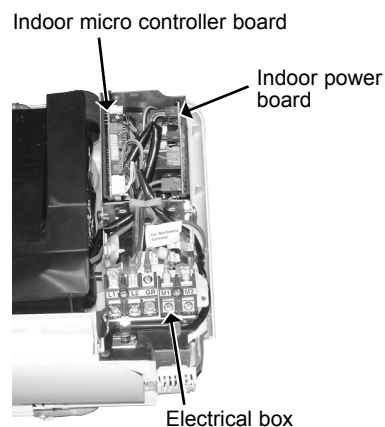


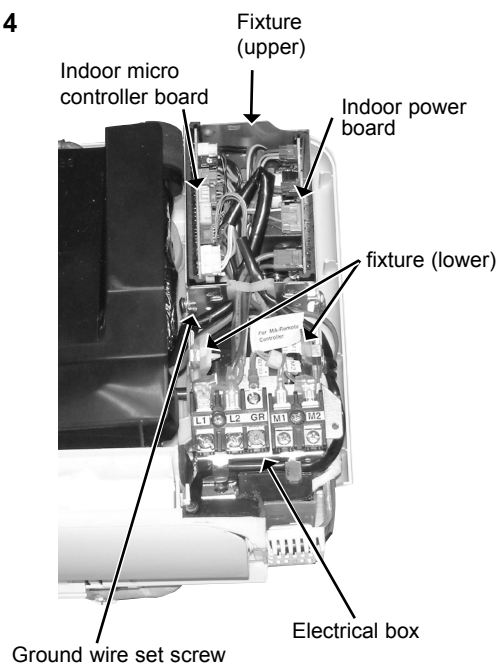
Photo 3



### 4. REMOVING THE ELECTRICAL BOX

- (1) Remove the front panel. (Refer to 2)
- (2) Remove the electrical box cover.
- (3) Pull the nozzle assembly toward you as opening the catch of the nozzle assembly.
- (4) Disconnect the indoor/outdoor connector.
- (5) Disconnect the following connector on the indoor micro controller board. (See the Photo 4)
  - CN60, CN5V, CN34, CN29, CN21, CN20, CN3A
- (6) Disconnect the following connector on the indoor power board. (See the Photo 4)
  - FAN, CN2M, CND
- (7) Disconnect the ground wire.
- (8) Pull the disconnected lead wire out from the electrical box.
- (9) Push up the upper fixture catch to remove the box, then pull the lower fixture and remove it from the box fixture.

Photo 4





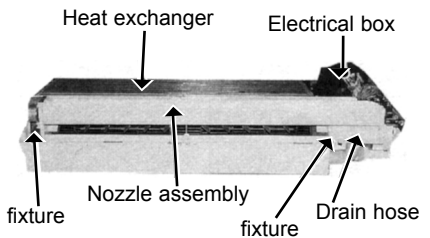
### OPERATING PROCEDURE

### PHOTOS&ILLUSTRATIONS

#### 5. REMOVING THE NOZZLE ASSEMBLY

- (1) Remove the front panel (Refer to 2).
- (2) Remove the electrical box cover.
- (3) Disconnect the connector (CN5V) on the indoor micro controller board.
- (4) After unhook the right side of the corner box, press the upper left side and remove the corner box.
- (5) Remove the nozzle assemble from the fixture. (See the Photo 5)
- (6) Remove the drain hose.

Photo 5



#### 6. REMOVING THE LINE FLOW FAN AND THE FAN MOTOR

- (1) Remove the front panel. (Refer to 2)
- (2) Remove the nozzle assembly. (Refer to 5)
- (3) Remove the electrical parts box.
- (4) Remove the fixture while pressing the right side of motor fixture catch. (See the Photo 6)
- (5) Remove the left side of the motor fixture.
- (6) Loosen the screw which fixes the line flow fan to the fan motor, then remove the fan motor by sliding it to the right side. (See the Photo 6)
- (7) Pull the left-hand side of the heat exchanger toward you. (See the Photo 7)
- (8) Remove the line flow fan.

Photo 6

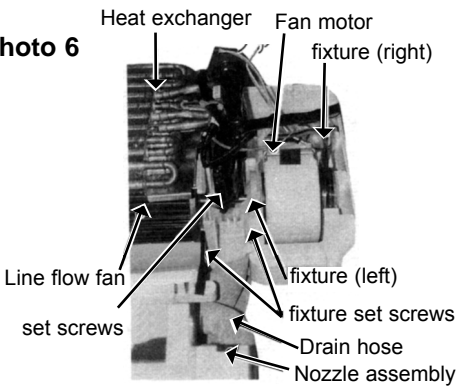
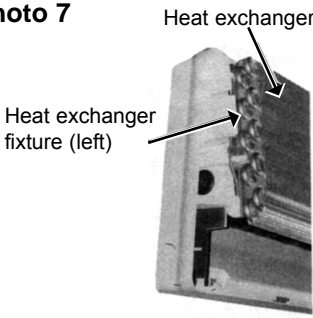


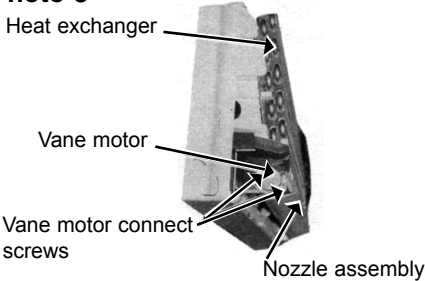
Photo 7



#### 7. REMOVING THE VANE MOTOR

- (1) Remove the front panel.
- (2) Remove the screw of the electrical parts box cover, and remove the cover.
- (3) Remove the screw of the vane motor, and remove the motor from the shaft.
- (4) Disconnect the vane motor connector (CN5V) on the indoor controller board.

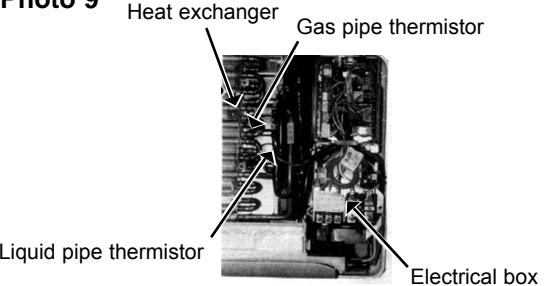
Photo 8



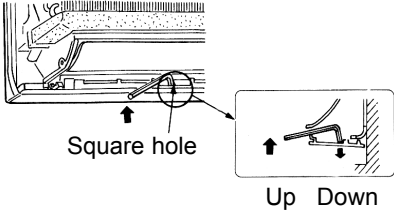
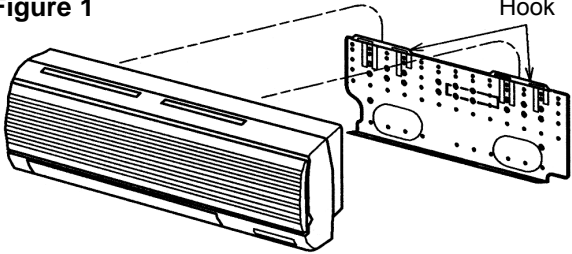
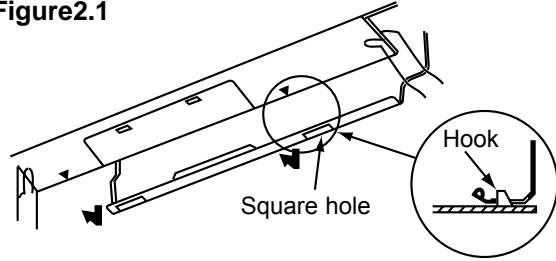
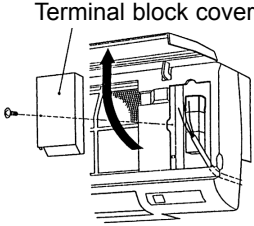
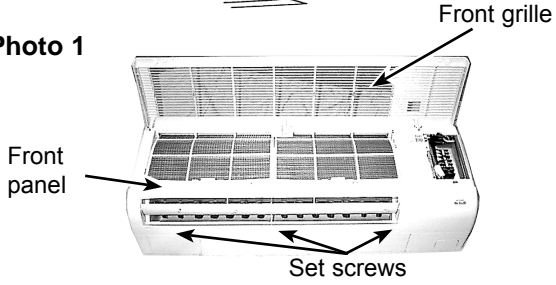
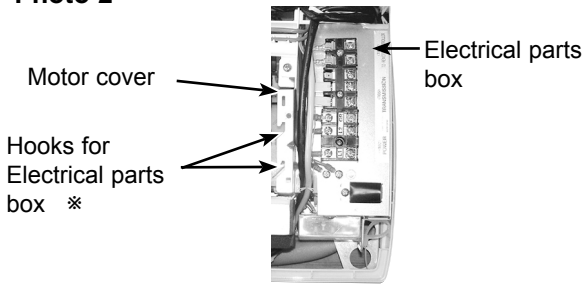
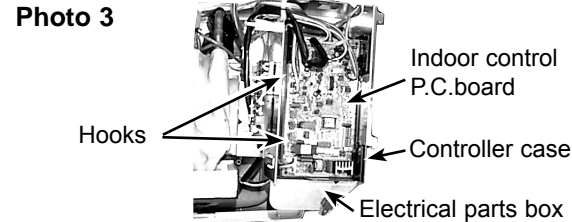
#### 8. REMOVING THE LIQUID PIPE THERMISTOR AND GAS PIPE THERMISTOR

- (1) Remove the front panel. (Refer to 2)
- (2) Remove the electrical box cover.
- (3) Remove the pipe cover.
- (4) Cut the wiring fixed band.
- (5) Remove the liquid pipe thermistor and gas pipe thermistor. (See the Photo 9)
- (6) Disconnect the connector (CN29) (CN21) on the indoor micro controller board.


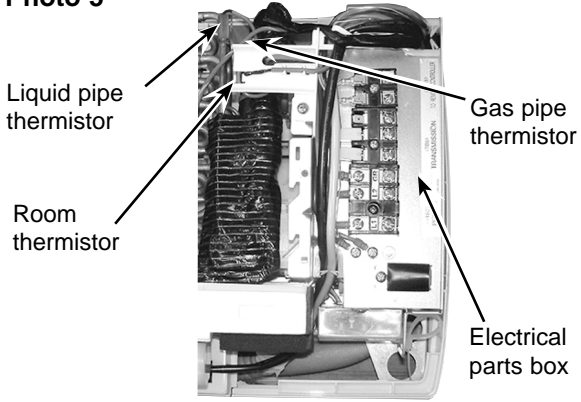
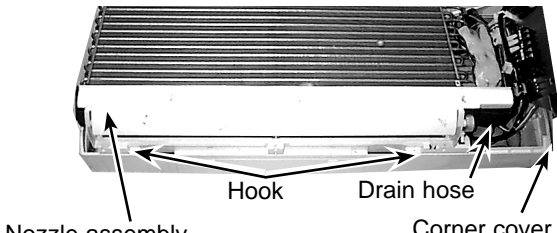
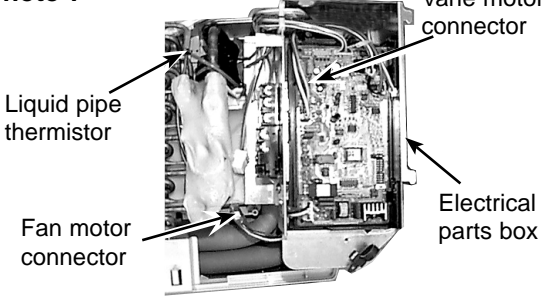
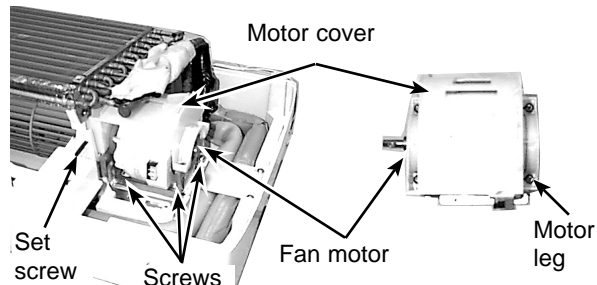
Photo 9



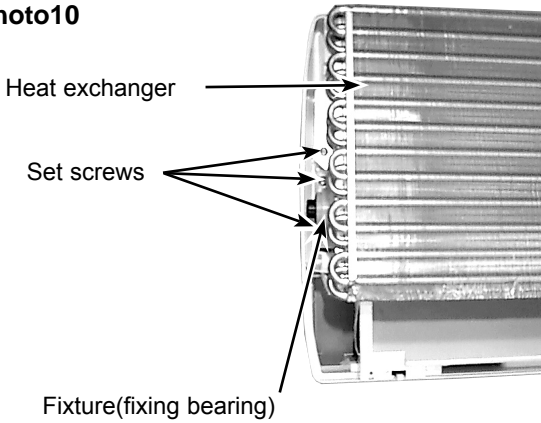
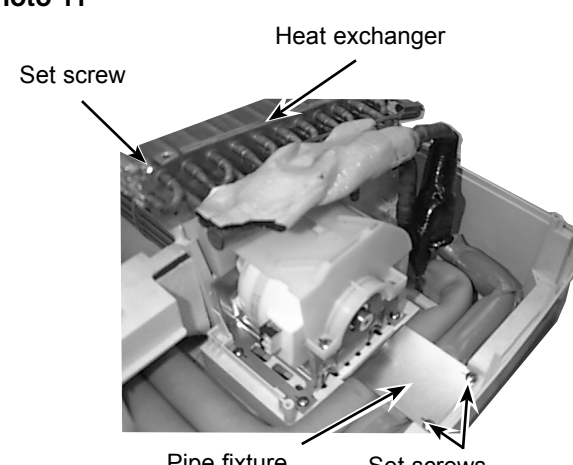
**PKFY-P12NGMU-E PKFY-P15NGMU-E**

OPERATION PROCEDURE	PHOTOS & ILLUSTRATION
<p><b>1. REMOVE THE LOWER SIDE OF THE INDOOR UNIT FROM THE INSTALLATION PLATE</b></p> <p>(1) Remove the left / right corner box of the indoor unit.</p> <p>(2) Hold and pull down the lower and both ends of the indoor unit, and remove the ▼ section from the square hole. (Refer to the Figure 2.1) Or remove the front panel and push the ▼ section down by using allen wrench ,etc. from the front side. (Refer to the Figure 2.2).</p> <p>(3) Unhook the top of the indoor unit from the back plate catch.</p> <p><b>Figure 2.2</b></p> 	<p><b>Figure 1</b></p>  <p><b>Figure2.1</b></p> 
<p><b>2. REMOVING THE FRONT PANEL</b></p> <p>(1) Open the front grille.</p> <p>(2) Remove the terminal block cover with a screw.</p> <p>(3) Remove the screw 3 caps then remove the set 3 screws.</p> <p>(4) After removing the lower side of the front panel a little, remove it as pulling toward upper.</p> <p><b>Figure 3</b></p>  <p><b>Photo 1</b></p> 	<p><b>Photo 2</b></p>  <p><b>Photo 3</b></p> 
<p><b>3. REMOVING THE INDOOR CONTROLLER BOARD</b></p> <p>(1) Remove the terminal block cover.</p> <p>(2) Remove the front panel. (see the Photo 1)</p> <p>(3) Remove the electrical parts box (2 screws).</p> <p>(4) Remove the electrical parts box cover (1 screw).</p> <p>(5) Disconnect the connector on the indoor controller board and remove the controller board by pulling up the hook of the controller case.</p> <p>※ To smooth work, hang the side hooks of the electrical parts box on the hook of the motor cover. (see the Photo 3)</p>	

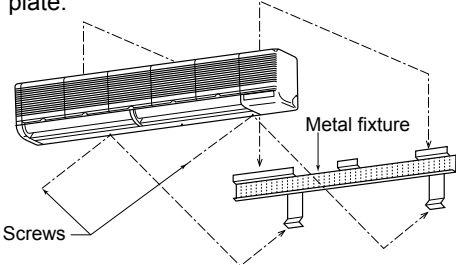
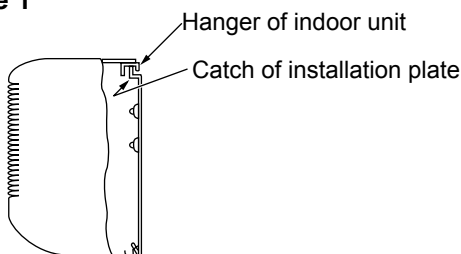
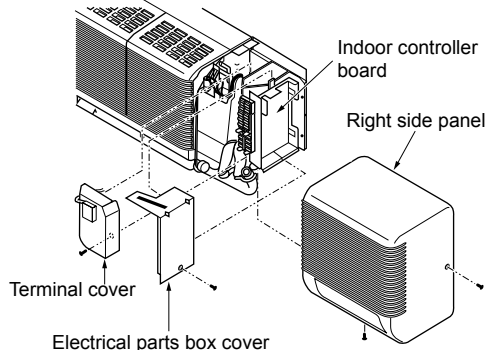
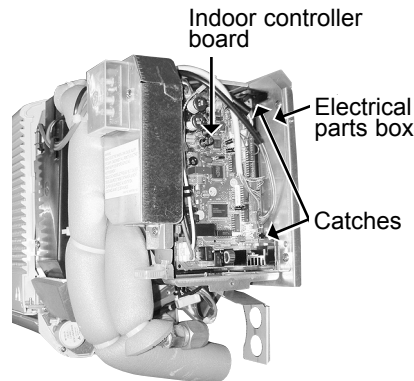
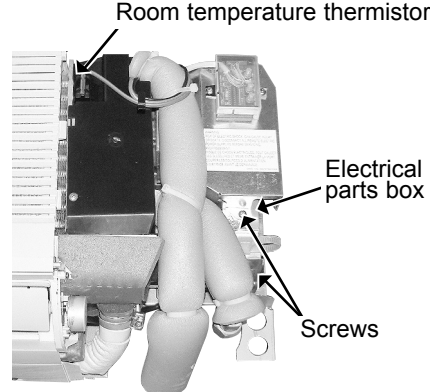


OPERATION PROCEDURE	PHOTOS & ILLUSTRATION
<p><b>4. REMOVING THE VANE MOTOR</b></p> <p>(1) Disconnect the connector CN6V on the indoor controller board.</p> <p>(2) Remove the 2 screws of the vane motor, disconnect the lead wire and remove the vane motor from the shaft.</p>	<p><b>Photo 4</b></p> 
<p><b>5. REMOVING THE THERMISTOR</b></p> <p>(1) Removing the room thermistor TH21.</p> <p>① Disconnect the connector CN20&lt;red&gt; on the indoor controller board.</p> <p>② Remove the room thermistor from the holder.</p> <p>(2) Removing the liquid pipe thermistor TH22.</p> <p>① Disconnect the connector CN21&lt;white&gt; on indoor controller board.</p> <p>② Remove the liquid pipe thermistor set to the pipe.</p> <p>(3) Removing the gas pipe thermistor TH23.</p> <p>① Disconnect the connector CN29&lt;black&gt; on indoor controller board.</p> <p>② Remove the gas pipe thermistor set to the pipe.</p>	<p><b>Photo 5</b></p> 
<p><b>6. REMOVING THE NOZZLE ASSEMBLY</b></p> <p>(1) Disconnect the connector CN6V on the indoor controller board.</p> <p>(2) Disconnect the lead wire of the vane motor.</p> <p>(3) Remove the corner cover.</p> <p>(4) Pull the drain hose out from the nozzle assembly.</p> <p>(5) Unhook the hook of the lower nozzle assembly and pull the nozzle assembly toward you, then remove the nozzle assembly by sliding it down.</p>	<p><b>Photo 6</b></p> 
<p><b>7. REMOVING THE ELECTRICAL PARTS BOX</b></p> <p>(1) Remove the terminal block cover.</p> <p>(2) Remove the front panel. (see the Photo 1)</p> <p>(3) Disconnect the vane motor connector.</p> <p>(4) Disconnect the fan motor connector from the fan motor.</p> <p>(5) Remove the liquid / gas pipe thermistor. (see the Photo 5)</p> <p>(6) Disconnect the linear expansion valve connector.</p> <p>(7) Remove the electrical parts box (2 screws).</p>	<p><b>Photo 7</b></p> 
<p><b>8. REMOVING THE FAN MOTOR</b></p> <p>(1) Remove the terminal block cover.</p> <p>(2) Remove the front panel. (see the Photo 1)</p> <p>(3) Remove the electrical parts box. (see the Photo 7)</p> <p>(4) Remove the nozzle assembly. (see the Photo 6)</p> <p>(5) Remove the fan motor leg fixing 3 screws.</p> <p>(6) Unscrew the set screws using by allen wrench and remove it by sliding the fan motor to right.</p> <p>(7) Remove the 4 screws and remove the motor cover from the fan motor leg.</p>	<p><b>Photo 8</b>                      <b>Photo 9</b></p> 

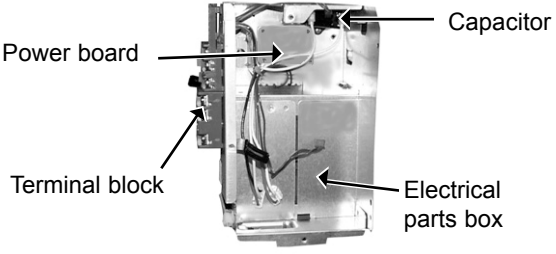
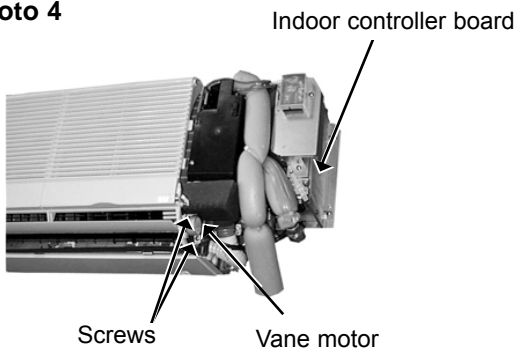
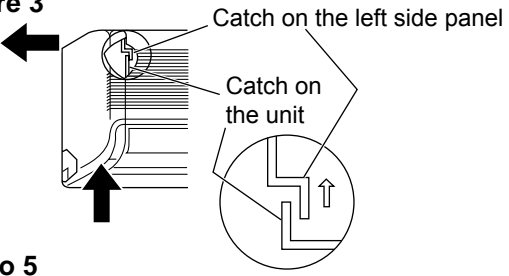
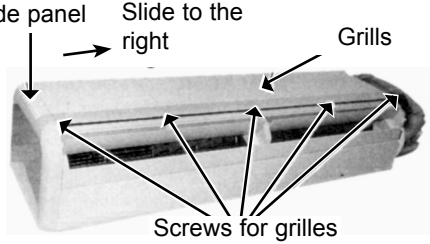
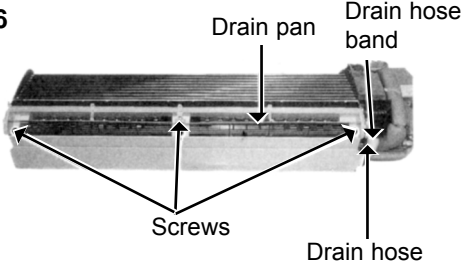


OPERATION PROCEDURE	PHOTOS & ILLUSTRATION
<p><b>9. REMOVING THE LINE FLOW FAN</b></p> <ol style="list-style-type: none"><li>(1) Remove the terminal block cover.</li><li>(2) Remove the front panel. (see the Photo 1)</li><li>(3) Remove the electrical parts box. (see the Photo 7)</li><li>(4) Remove the nozzle assembly. (see the Photo 6)</li><li>(5) Remove the fan motor. (see the Photo 8)</li><li>(6) Remove the pipe fixture with 2 screws.(see the Photo11)</li><li>(7) Remove the left / right screws of the heat exchanger and pull the left-hand side up.</li><li>(8) Remove the 2 screws by sliding it toward you remove the fixture (fixing bearing). * The fan motor is removable first , when the fan removing is hard. * When resetting the fan to the fan motor. Locate and fix the shaft after installing the fan.</li></ol>	<p><b>Photo10</b></p>  <p>Heat exchanger</p> <p>Set screws</p> <p>Fixture(fixing bearing)</p>
<p><b>10. REMOVING THE HEAT EXCHANGER</b></p> <ol style="list-style-type: none"><li>(1) Remove the terminal block cover.</li><li>(2) Remove the front panel. (see the Photo 1)</li><li>(3) Remove the electrical parts box. (see the Photo 7)</li><li>(4) Remove the corner box.</li><li>(5) Remove the nozzle assembly. (see the Photo 6)</li><li>(6) Remove the 2 screws and the pipe fixture.</li><li>(7) Remove the 2 screws and heat exchanger.</li></ol>	<p><b>Photo 11</b></p>  <p>Heat exchanger</p> <p>Set screw</p> <p>Pipe fixture</p> <p>Set screws</p>

**PKFY-P18NFMU-E PKFY-P24NFMU-E PKFY-P30NFMU-E**

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



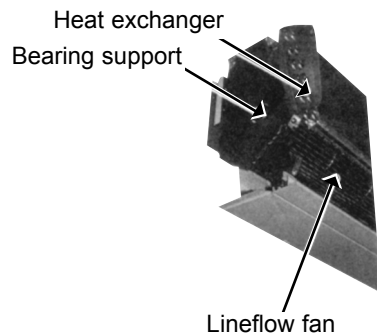
OPERATING PROCEDURE	PHOTOS & ILLUSTRATION
<p>(7) Remove the indoor controller board case. Then the Power board and the capacitor can be serviced.</p>	<p><b>Photo 3</b></p> 
<p><b>5. Removing the vane motor</b></p> <ol style="list-style-type: none"> <li>(1) Remove the right side panel.</li> <li>(2) Remove the screw of the electrical parts box cover, and remove the terminal cover.</li> <li>(3) Remove the 2 screws of the vane motor, and remove the motor from the shaft.</li> <li>(4) Disconnect the vane motor connector on the indoor controller board.</li> </ol>	<p><b>Photo 4</b></p> 
<p><b>6. Removing the intake grilles</b></p> <ol style="list-style-type: none"> <li>(1) Remove the right side panel.</li> <li>(2) To remove the left side panel, remove the screw on the bottom and the screw on the upper left-hand side. (See Figure 3.) <ol style="list-style-type: none"> <li>1. Press up this side of the left side panel to unhook the catch on the panel from the catch on the unit.</li> <li>2. Slide the left side panel to the left to remove the panel.</li> </ol> </li> <li>Note: Fix the unit to the metal fixture securely</li> <li>(3) Remove the air filters.</li> <li>(4) Hold and press the center cover to remove.</li> <li>(5) Remove the screws of the grilles.</li> <li>(6) Pull the lower side of the grille toward you and slide the upper to the right to remove the grilles.</li> </ol>	<p><b>Figure 3</b></p>  <p><b>Photo 5</b></p> 
<p><b>7. Removing the drain pan</b></p> <ol style="list-style-type: none"> <li>(1) Remove the left and right side panels.</li> <li>(2) Remove the grilles.</li> <li>(3) Remove the electrical parts box cover.</li> <li>(4) Loosen the drain hose band to remove.</li> <li>(5) Remove the 3 screws of the drain pan, and slide the drain pan toward you to remove.</li> </ol>	<p><b>Photo 6</b></p> 

## OPERATING PROCEDURE

### 8. Removing the lineflow fan and the fan motor

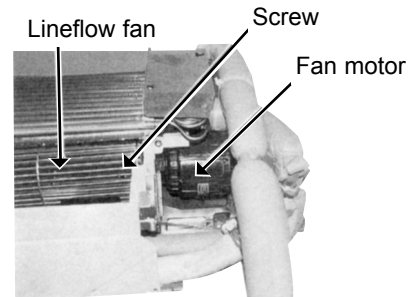
- (1) Remove the left and right side panels.
- (2) Remove the grilles.
- (3) Remove the electrical parts box.
- (4) Remove the drain pan.
- (5) Loosen the screw that fixes the lineflow fan to the fan motor. (See Photo 7. )
- (6) Remove the 4 screws of the motor fixture, and remove the fan motor and the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

**Photo 11**

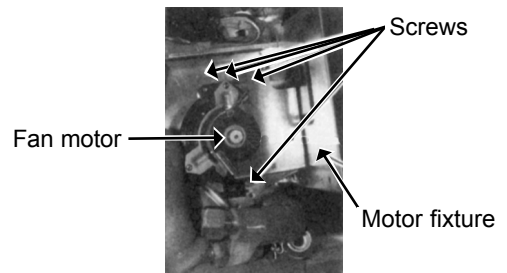


## PHOTOS

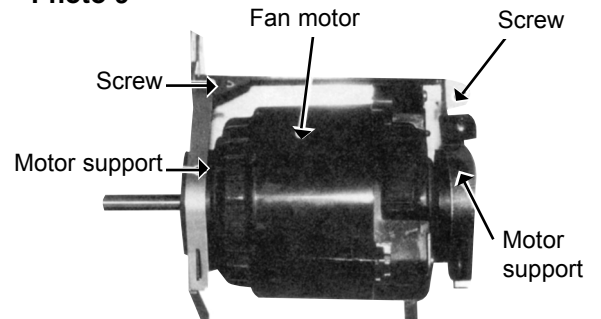
**Photo 7**



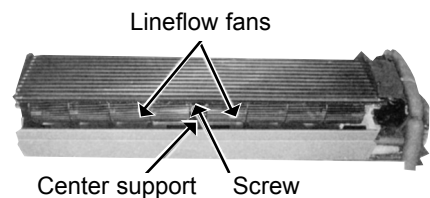
**Photo 8**



**Photo 9**

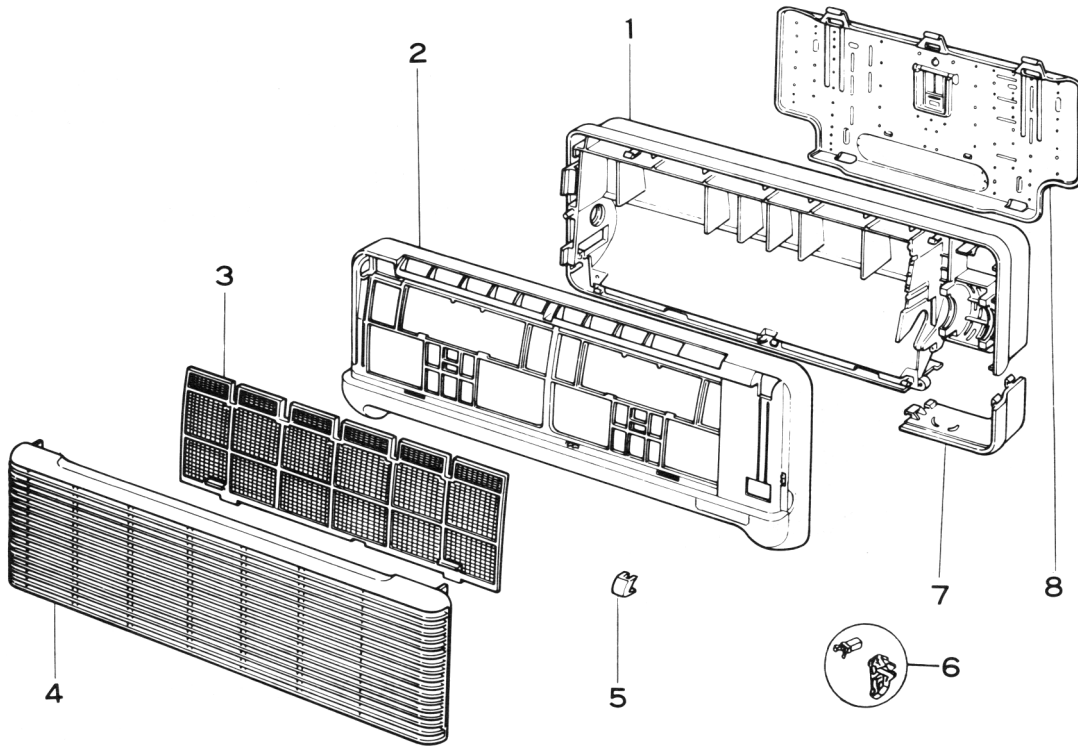


**Photo 10**



**PARTS LIST (non-RoHS compliant)**

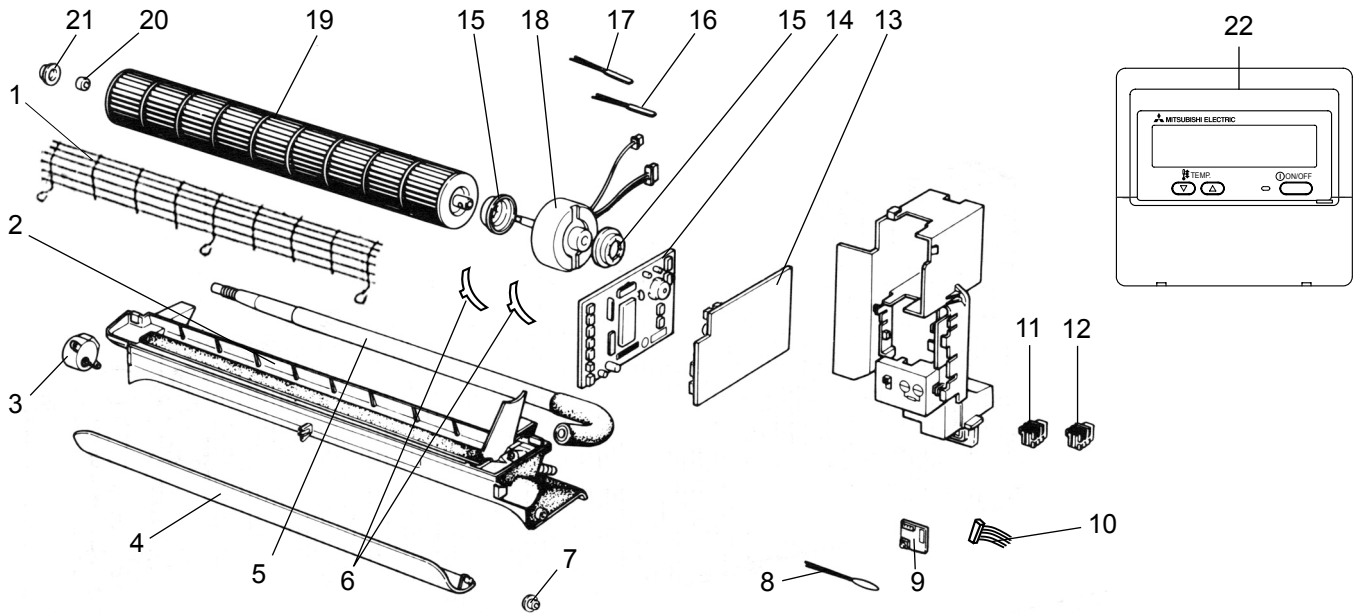
**PANEL PARTS  
PKFY-P06NAMU-E  
PKFY-P08NAMU-E**



No.	Parts No.	Parts Name	Specifications	Q'ty / set	Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PKFY-P · NAMU-E 06 / 08				Unit	Amount
1	R01 22A 635	BOX		1					
2	R01 22A 651	FRONT PANEL		1					
3	R01 22A 500	AIR FILTER		1					
4	R01 22A 691	INTAKE GRILLE		1					
5	R01 22A 096	SCREW CAP		1	3PCS/SET				
6	R01 22A 054	GRILLE CATCH		1					
7	T7W A00 658	CORNER BOX		1					
8	R01 22A 808	BACK PLATE		1					

## ELECTRICAL PARTS

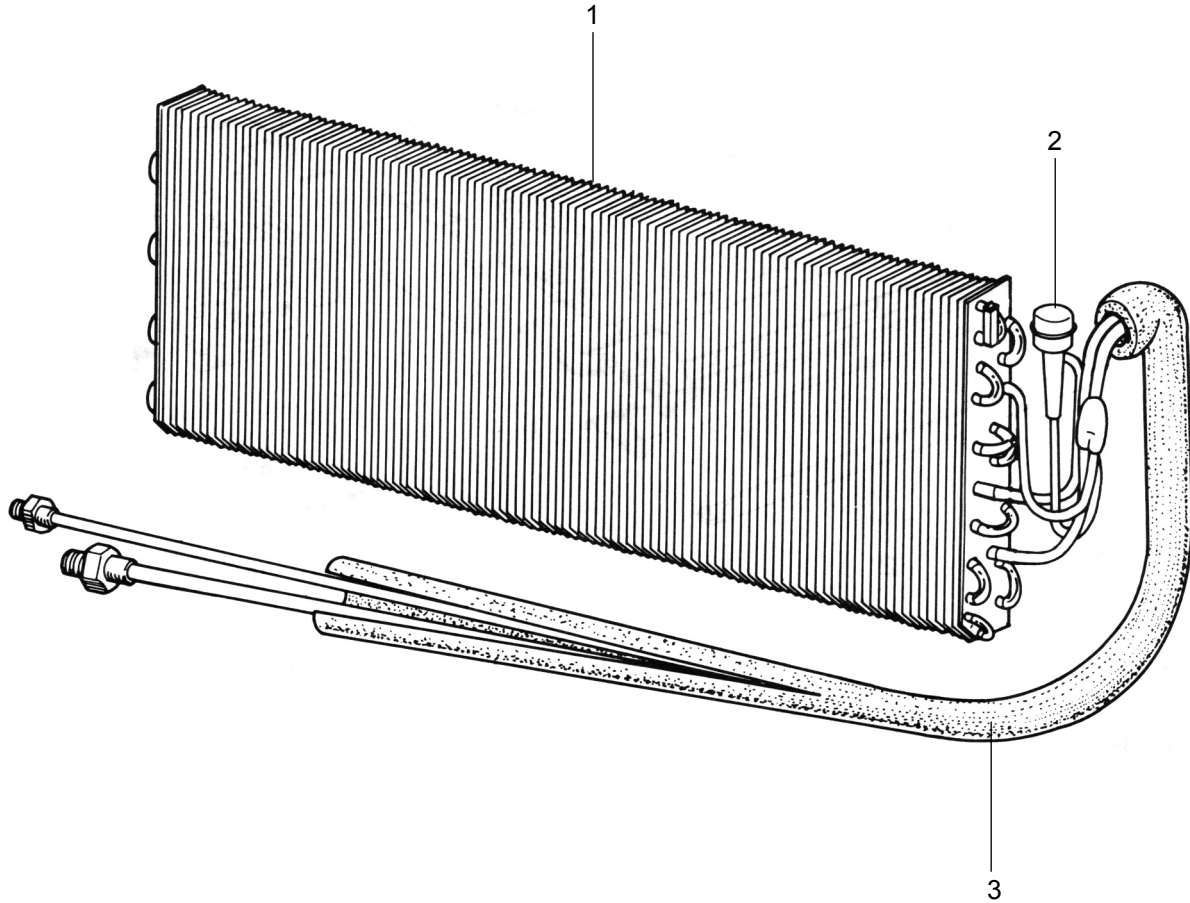
### PKFY-P06NAMU-E PKFY-P08NAMU-E



No.	Parts No.	Parts Name	Specifications	Q'ty / set	Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PKFY-P · NAMU-E 06 / 08				Unit	Amount
1	T7W B00 675	FAN GUARD		1					
2	R01 22A 530	NOZZLE		1					
3	R01 22A 223	VANE MOTOR		1		MV			
4	R01 22A 002	AUTO VANE		1					
5	R01 22A 527	DRAIN HOSE		1					
6	R01 22A 126	MOTOR BAND	SET (LEFT, RIGHT)	1					
7	R01 07Y 092	VANE SLEEVE		1					
8	T7W E12 202	ROOM TEMPERATURE THERMISTOR		1		TH21			
9	T7W E00 294	ADDRESS BOARD		1		A.B			
10	T7W E00 304	ADDRESS CABLE		1					
11	T7W E18 716	TERMINAL BLOCK	3P (L1, L2, GR)	1		TB2			
12	T7W E19 716	TERMINAL BLOCK	2P (M1, M2)	1		TB5			
13	T7W E05 313	POWER BOARD		1		P.B			
14	T7W E44 310	INDOOR CONTROLLER BOARD		1		M.B			
15	R01 22A 105	RUBBER MOUNT		2					
16	R01 E38 202	PIPE TEMPERATURE THERMISTOR	GAS	1		TH23			
17	T7W E06 202	PIPE TEMPERATURE THERMISTOR	LIQUID	1		TH22			
18	T7W E18 762	FAN MOTOR	PS4N8-KA	1		MF			
19	R01 22A 114	LINE FLOW FAN		1					
20	R01 005 103	SLEEVE BEARING		1					
21	R01 22A 102	BEARING MOUNT		1					
22	—	REMOTE CONTROLLER	PAR-21MAA	1		R.B			

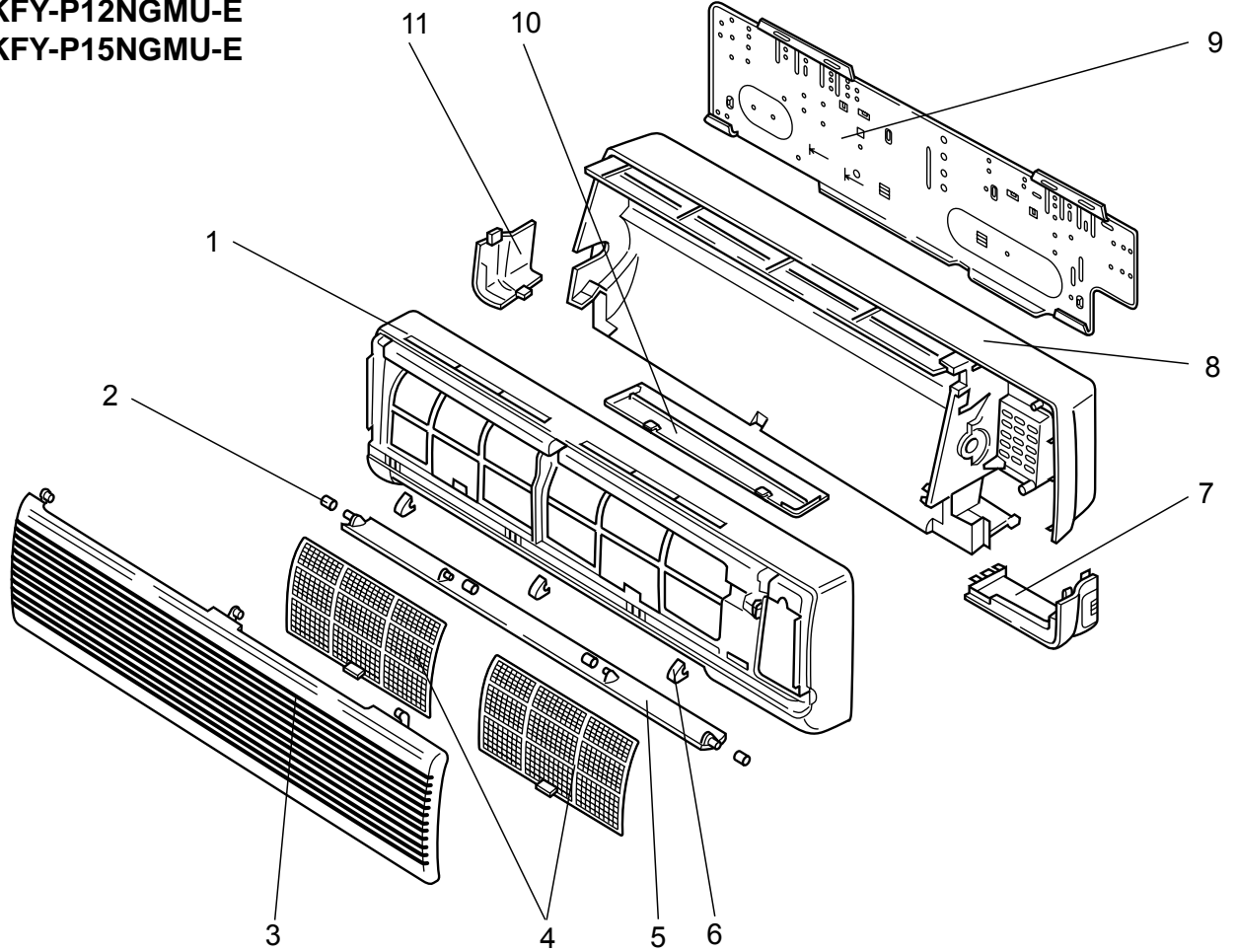
↑  
This REMOTE CONTROLLER is made by AIR-CONDITIONING & REFRIGERATION SYSTEMS WORKS.,  
MITSUBISHI ELECTRIC CORPORATION.

**HEAT EXCHANGER PARTS**  
**PKFY-P06NAMU-E**  
**PKFY-P08NAMU-E**



No.	Parts No.	Parts Name	Specifications	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PKFY-P · NAMU-E	06 / 08				Unit	Amount
1	T7W K10 480	HEAT EXCHANGER	With connection pipe	1						
2	R01 E63 401	LINEAR EXPANSION VALVE		1			LEV			
3	R01 E03 470	CONNECT PIPE		1	Including LEV					

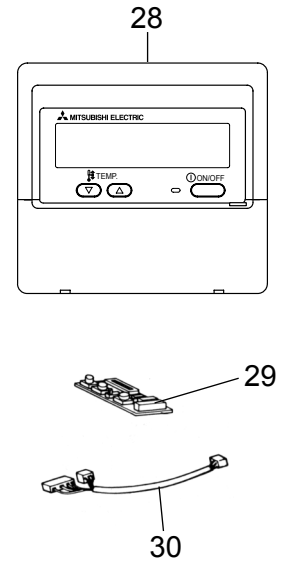
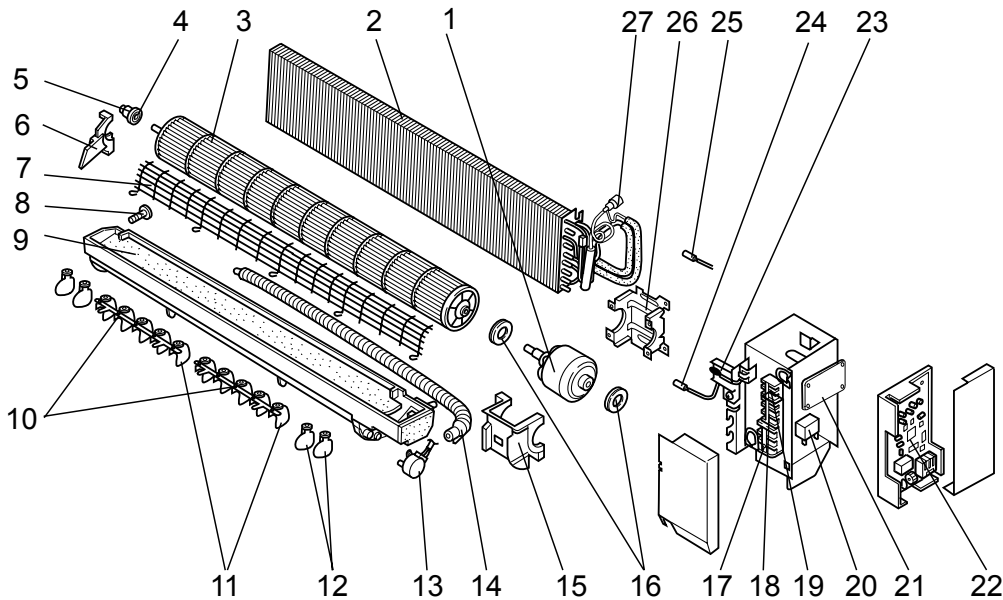
**STRUCTURAL PARTS**  
**PKFY-P12NGMU-E**  
**PKFY-P15NGMU-E**



No.	Parts No.	Parts Name	Specifications	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PKFY-P · NGMU-E	12 / 15				Unit	Amount
1	R01 89Y 651	FRONT PANEL			1					
2	R01 07Y 092	VANE SLEEVE			1					
3	R01 07Y 691	FRONT GRILLE			1					
4	R01 A16 500	AIR FILTER			2					
5	R01 07Y 002	AUTO VANE			1					
6	R01 07Y 096	SCREW CAP			3					
7	R01 09Y 658	CORNER COVER			1					
8	R01 07Y 635	BOX ASSEMBLY			1					
9	R01 07Y 808	BACK PLATE			1					
10	R01 07Y 623	UNDER COVER			1					
11	R01 07Y 658	CORNER COVER			1					

# ELECTRICAL PARTS

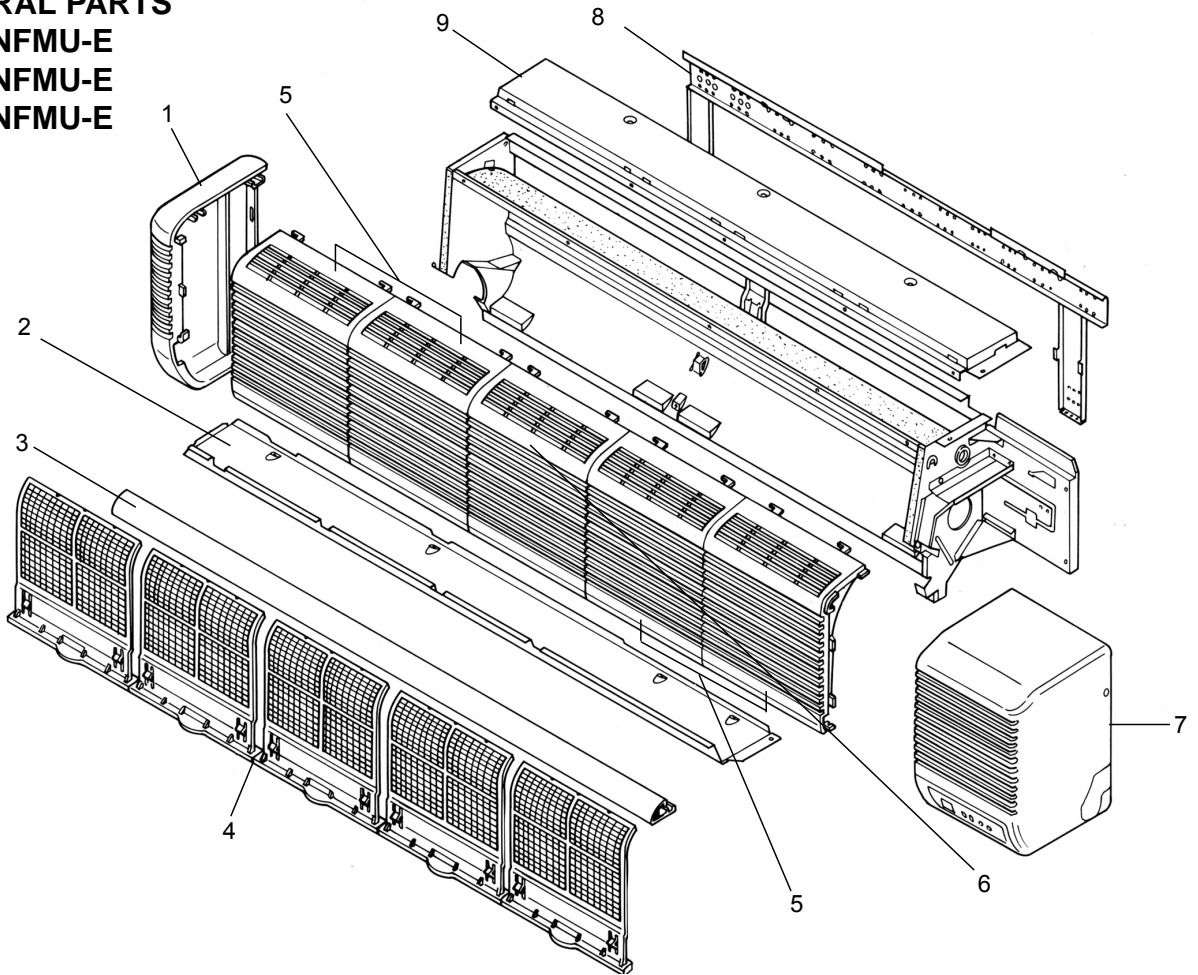
## PKFY-P12NGMU-E PKFY-P15NGMU-E



No.	Parts No.	Parts Name	Specifications	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PKFY-P	NGMU-E				Unit	Amount
1	T7W E23 762	FAN MOTOR	PM4N30-KA	1	1		MF			
2	T7W K11 480	HEAT EXCHANGER		1						
	T7W K12 480	HEAT EXCHANGER			1					
3	R01 07Y 114	LINE FLOW FAN		1	1					
4	R01 005 103	SLEEVE BEARING		1	1					
5	R01 07Y 102	BEARING MOUNT		1	1					
6	R01 07Y 106	BEARING SUPPORT		1	1					
7	T7W A00 675	FAN GUARD		1	1					
8	R01 07Y 524	DRAIN PLUG		1	1					
9	R01 07Y 530	NOZZLE ASSY		1	1					
10	R01 07Y 059	ARM		2	2					
11	R01 07Y 038	GUIDE VANE		10	10					
12	R01 09Y 038	GUIDE VANE		4	4					
13	T7W E04 223	VANE MOTOR		1	1		MV			
14	R01 07Y 527	DRAIN HOSE		1	1					
15	R01 07Y 135	MOTOR COVER		1	1					
16	R01 07Y 105	RUBBER MOUNT		2	2					
17	T7W E11 716	TERMINAL BLOCK	3P(L1, L2, GR )	1	1		TB2			
18	T7W E17 716	TERMINAL BLOCK	3P(M1,M2,S)	1	1		TB5			
19	R01 556 246	TERMINAL BLOCK	2P(1,2)	1	1		TB15			
20	T7W E11 255	RUN CAPACITOR	2.0 $\mu$ F 440V	1	1		C			
21	R01 E02 313	POWER BOARD		1	1		P.B			
22	T7W E42 310	CONTROLLER BOARD		1	1		I.B			
23	T7W E31 202	ROOM THERMISTOR		1	1		TH21			
24	T7W E32 202	LIQUID PIPE THERMISTOR		1	1		TH22			
25	T7W E33 202	GAS PIPE THERMISTOR		1	1		TH23			
26	T7W E06 130	MOTOR SUPPORT		1	1					
27	R01 E63 401	LINEAR EXPANSION VALVE	PAR-21MAA	1	1		LEV			
28	—	REMOTE CONTROLLER		1	1					
29	T7W E00 294	ADDRESS BOARD		1	1		A.B			
30	T7W E02 304	ADDRESS CABLE		1	1					

This REMOTE CONTROLLER is made by AIR-CONDITIONING & REFRIGERATION SYSTEMS WORKS, MITSUBISHI ELECTRIC CORPORATION.

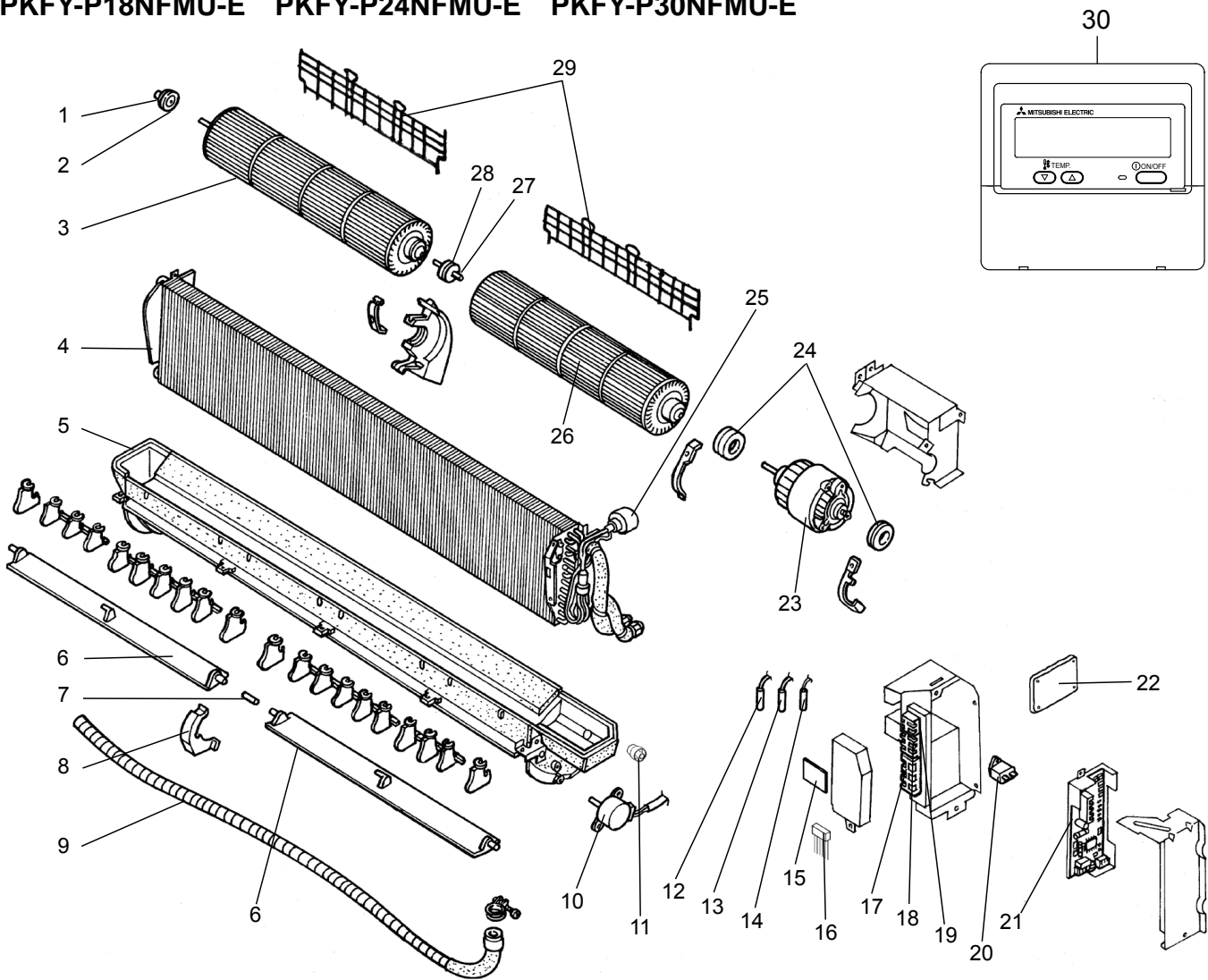
**STRUCTURAL PARTS**  
**PKFY-P18NFMU-E**  
**PKFY-P24NFMU-E**  
**PKFY-P30NFMU-E**



No.	Part No.	Part Name	Specification	Q'ty / set			Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PKFY-P · NFMU-E						Unit	Amount
				18	24	30					
1	R01 12G 662	LEFT SIDE PANEL		1	1	1					
2	R01 E01 812	UNDER PLATE		1	1						
	R01 E00 812	UNDER PLATE				1					
3	R01 E00 811	NOSE		1	1						
	R01 E01 811	NOSE				1					
4	R01 A17 500	AIR FILTER		4	4	5					
5	R01 12G 691	INTAKE GRILLE		2	2	2					
6	R01 16G 692	INTAKE GRILLE				1					
7	R01 12G 661	RIGHT SIDE PANEL		1	1	1					
8	R01 12G 808	BACK PLATE		1	1						
	R01 16G 808	BACK PLATE				1					
9	R01 E01 641	TOP PLATE		1	1						
	R01 E00 641	TOP PLATE				1					

# ELECTRICAL PARTS

PKFY-P18NFMU-E PKFY-P24NFMU-E PKFY-P30NFMU-E



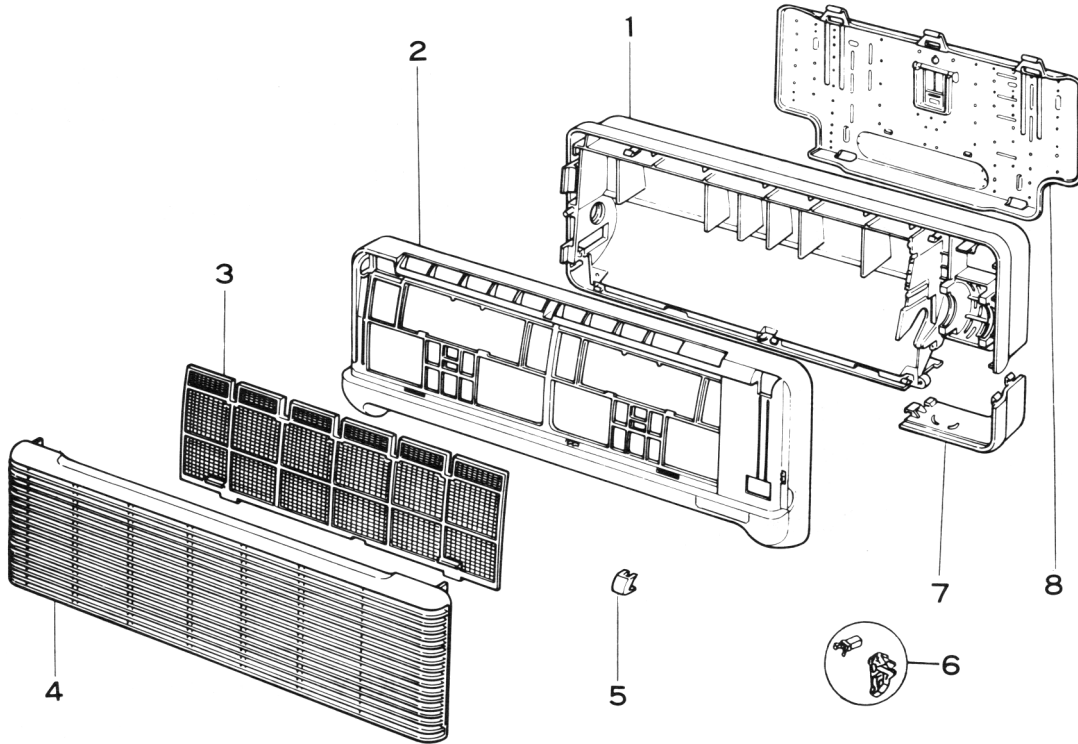
No.	Part No.	Part Name	Specification	Q'ty / set			Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PKFY-P · NFMU-E						Unit	Amount
				18	24	30					
1	R01 Z61 102	BEARING MOUNT		1	1	1					
2	R01 12G 103	SLEEVE BEARING		1	1	1					
3	R01 13G 114	LEFT LINEFLOW FAN		1	1						
	R01 16G 114	LEFT LINEFLOW FAN				1					
4	T7W K13 480	HEAT EXCHANGER		1							
	T7W K14 480	HEAT EXCHANGER			1						
	T7W K15 480	HEAT EXCHANGER				1					
5	T7W E13 529	DRAIN PAN		1	1						
	T7W E14 529	DRAIN PAN				1					
6	R01 12G 002	AUTO VANE		2	2						
	R01 16G 002	AUTO VANE				2					
7	R01 12G 063	JOINT SHAFT		1	1	1					



No.	Part No.	Part Name	Specification	Q'ty / set			Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
				PKFY-P · NFMU-E						Unit	Amount
				18	24	30					
8	R01 12G 621	CENTER COVER		1	1	1					
9	R01 KV5 527	DRAIN HOSE		1	1	1					
10	T7W E03 223	VANE MOTOR		1	1	1		MV			
11	R01 12G 523	DRAIN SOCKET		1	1	1					
12	R01 E32 202	GAS PIPE THERMISTOR		1	1	1		TH23			
13	T7W E12 202	ROOM TEMPERATURE THERMISTOR		1	1	1		TH21			
14	R01 E02 202	LIQUID PIPE THERMISTOR		1	1	1		TH22			
15	T7W E00 294	ADDRESS BOARD		1	1	1		A.B			
16	R01 05A 304	ADDRESS CABLE		1	1	1					
17	T7W E11 716	TERMINAL BLOCK	3P(L1,L2,GR)	1	1	1		TB2			
18	T7W E17 716	TERMINAL BLOCK	3P(M1,M2,S)	1	1	1		TB5			
19	R01 556 246	TERMINAL BLOCK	2P(1,2)	1	1	1		TB15			
20	T7W E03 255	FAN MOTOR CAPACITOR	2.5 $\mu$ F 440V	1	1	1		C			
21	T7W E42 310	INDOOR CONTROLLER BOARD		1	1	1		I.B			
22	R01 E02 313	POWER BOARD		1	1	1		P.B			
23	T7W B00 762	FAN MOTOR	PN4N45-K	1	1			MF			
	T7W B01 762	FAN MOTOR	PN4N70-K			1		MF			
24	R01 12G 105	RUBBER MOUNT		2	2						
	R01 16G 105	RUBBER MOUNT				2					
25	R01 E63 401	LINEAR EXPANSION VALVE		1	1			LEV			
	T7W E16 401	LINEAR EXPANSION VALVE				1		LEV			
26	R01 13G 115	RIGHT LINE FLOW FAN		1	1						
	R01 16G 115	RIGHT LINE FLOW FAN				1					
27	R01 005 103	SLEEVE BEARING		1	1	1					
28	R01 KV5 102	BEARING MOUNT		1	1	1					
29	T7W B02 675	FAN GUARD		2	2						
	T7W B03 675	FAN GUARD				2					
30	—	REMOTE CONTROLLER	PAR-21MAA	1	1	1		R.B			

This REMOTE CONTROLLER is made by AIR-CONDITIONING & REFRIGERATION SYSTEMS WORKS,.  
MITSUBISHI ELECTRIC CORPORATION.

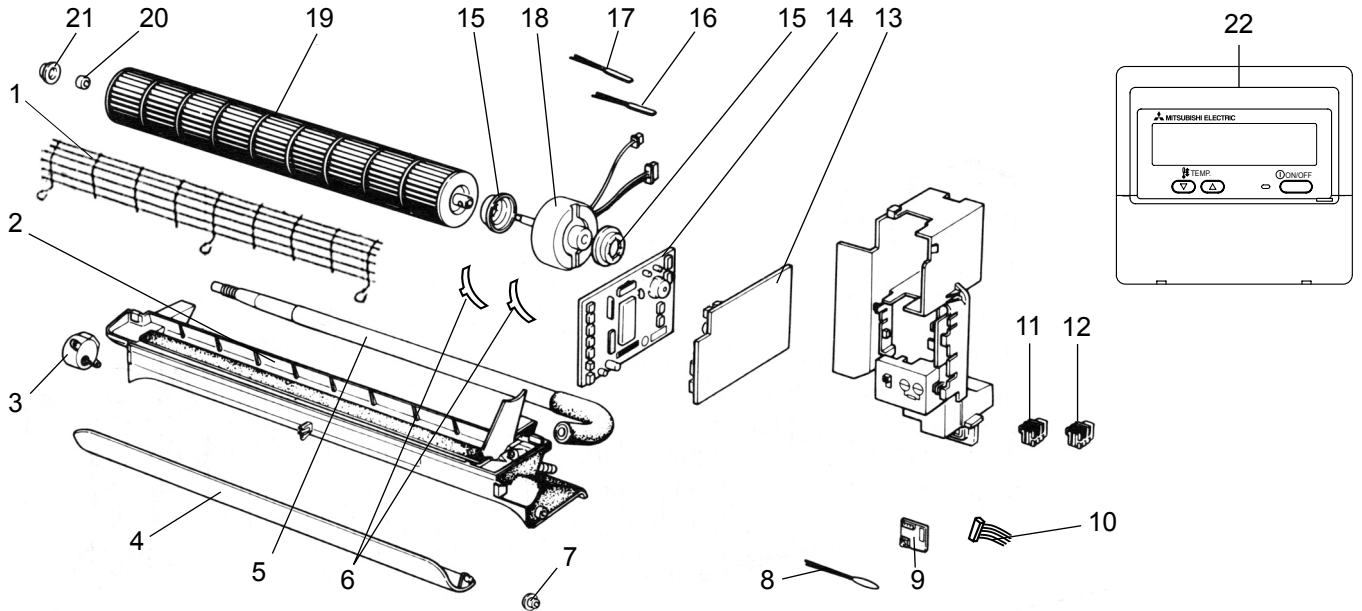
PANEL PARTS  
 PKFY-P06NAMU-E  
 PKFY-P08NAMU-E



No.	RoHS	Parts No.	Parts Name	Specifications	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PKFY-P · NAMU-E					Unit	Amount
					06 / 08						
1	G	R01 23A 635	BOX		1						
2	G	R01 23A 651	FRONT PANEL		1						
3	G	R01 23A 500	AIR FILTER		1						
4	G	R01 23A 691	INTAKE GRILLE		1						
5	G	R01 23A 096	SCREW CAP		1	3PCS/SET					
6	G	R01 23A 054	GRILLE CATCH		1						
7	G	T7W A02 658	CORNER BOX		1						
8	G	R01 23A 808	BACK PLATE		1						

## ELECTRICAL PARTS

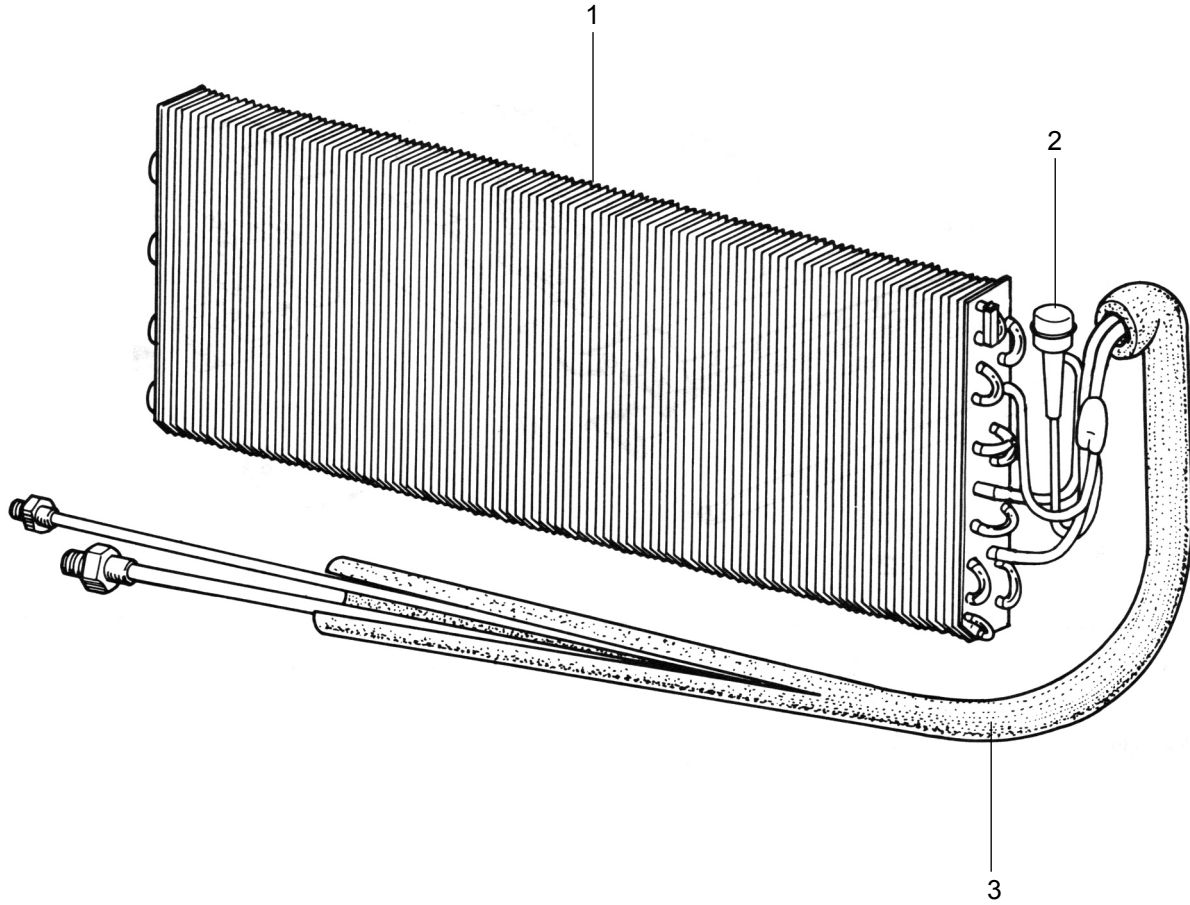
### PKFY-P06NAMU-E PKFY-P08NAMU-E



No.	RoHS	Parts No.	Parts Name	Specifications	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PKFY-P · NAMU-E 06 / 08					Unit	Amount
1	G	T7W 23A 675	FAN GUARD			1					
2	G	R01 23A 530	NOZZLE			1					
3	G	R01 23A 223	VANE MOTOR			1		MV			
4	G	R01 23A 002	AUTO VANE			1					
5	G	R01 23A 527	DRAIN HOSE			1					
6	G	R01 23A 126	MOTOR BAND	SET (LEFT, RIGHT)		1					
7	G	R01 08Y 092	VANE SLEEVE			1					
8	G	R01 H06 202	ROOM TEMPERATURE THERMISTOR			1		TH21			
9	G	T7W E01 294	ADDRESS BOARD			1		A.B			
10	G	T7W E04 304	ADDRESS CABLE			1					
11	G	T7W E43 716	TERMINAL BLOCK	3P (L1, L2, GR)		1		TB2			
12	G	T7W E42 716	TERMINAL BLOCK	2P (M1, M2)		1		TB5			
13	G	T7W E37 313	POWER BOARD			1		P.B			
14	G	T7W E58 310	INDOOR CONTROLLER BOARD			1		M.B			
15	G	R01 23A 105	RUBBER MOUNT			2					
16	G	R01 H14 202	PIPE TEMPERATURE THERMISTOR	GAS		1		TH23			
17	G	R01 H05 202	PIPE TEMPERATURE THERMISTOR	LIQUID		1		TH22			
18	G	T7W E29 762	FAN MOTOR	PS4N8-KA		1		MF			
19	G	R01 23A 114	LINE FLOW FAN			1					
20	G	R01 E04 103	SLEEVE BEARING			1					
21	G	R01 23A 102	BEARING MOUNT			1					
22	G	—	REMOTE CONTROLLER	PAR-21MAA		1		R.B			

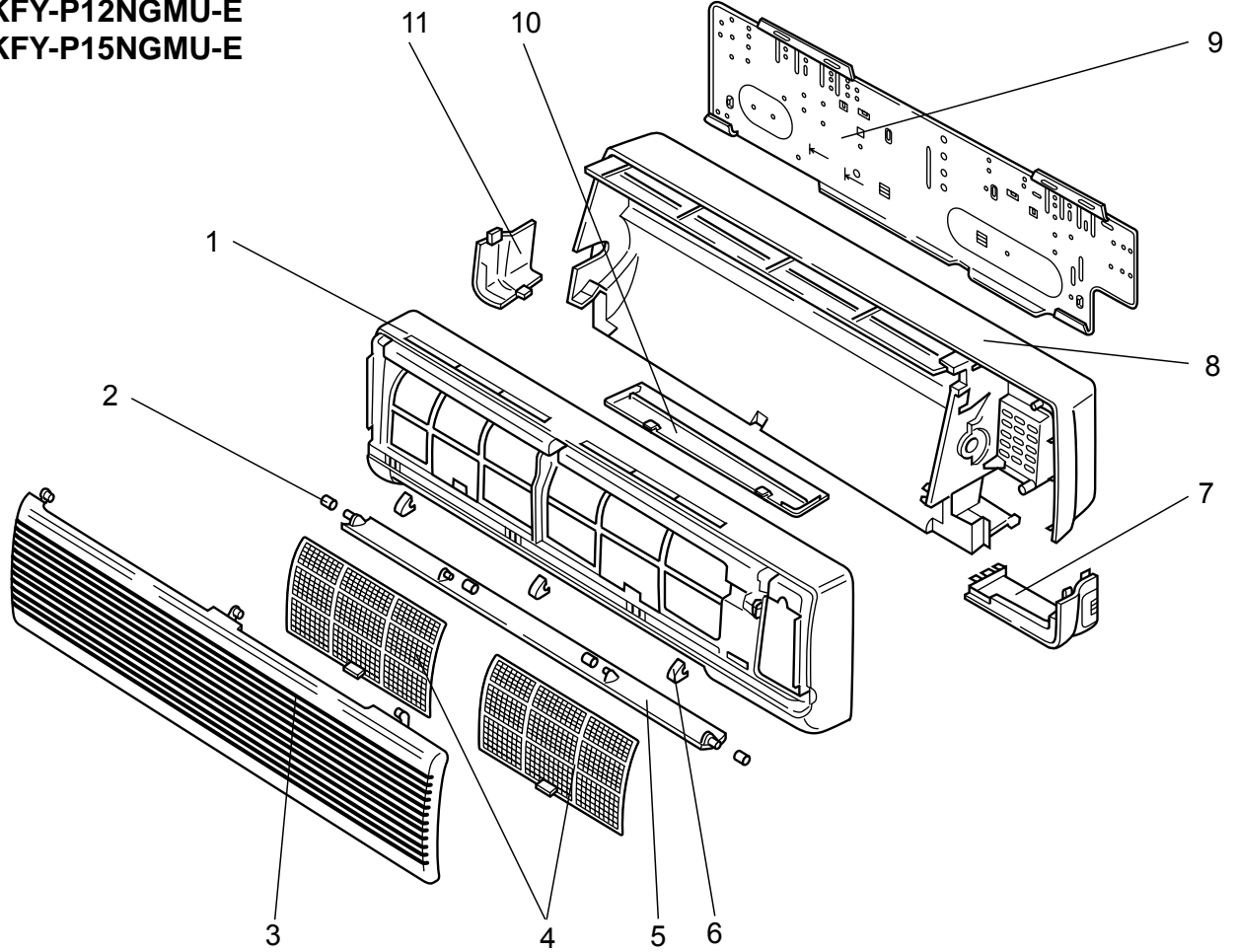
↑ This REMOTE CONTROLLER is made by AIR-CONDITIONING & REFRIGERATION SYSTEMS WORKS, MITSUBISHI ELECTRIC CORPORATION.

**HEAT EXCHANGER PARTS**  
**PKFY-P06NAMU-E**  
**PKFY-P08NAMU-E**



No.	RoHS	Parts No.	Parts Name	Specifications	Q'ty / set	Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PKFY-P · NAMU-E 06 / 08				Unit	Amount
1	G	T7W K34 480	HEAT EXCHANGER	With connection pipe	1					
2	G	R01 H05 401	LINEAR EXPANSION VALVE		1		LEV			
3	G	R01 E04 470	CONNECT PIPE		1	Including LEV				

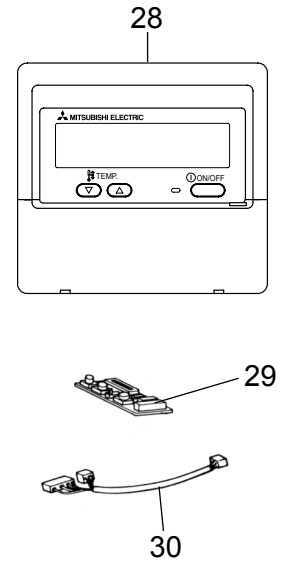
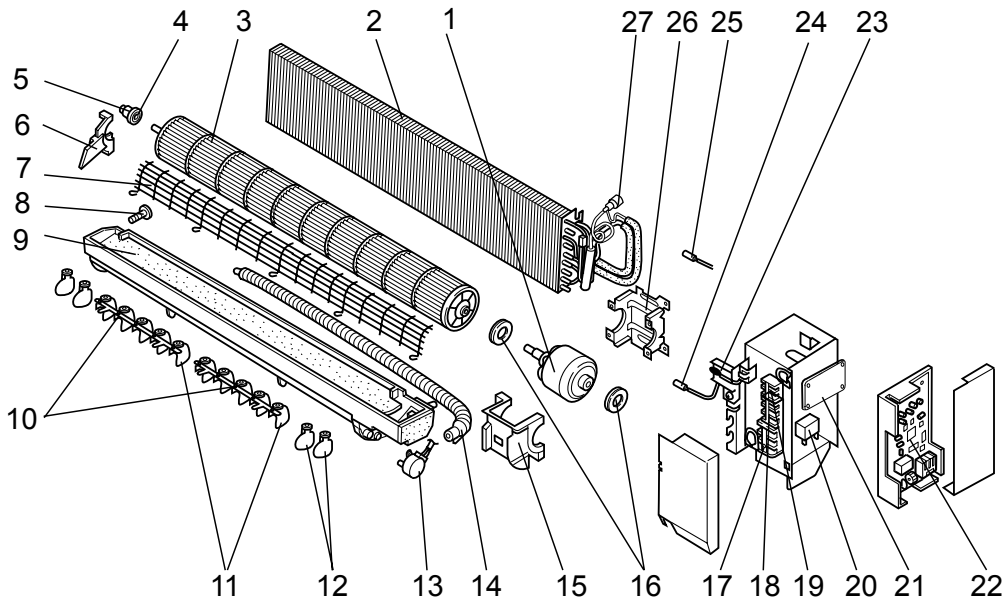
**STRUCTURAL PARTS**  
**PKFY-P12NGMU-E**  
**PKFY-P15NGMU-E**



No.	RoHS	Parts No.	Parts Name	Specifications	Q'ty / set	Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PKFY-P · NGMU-E				Unit	Amount
					12 / 15					
1	G	R01 E05 651	FRONT PANEL		1					
2	G	R01 08Y 092	VANE SLEEVE		1					
3	G	R01 08Y 691	FRONT GRILLE		1					
4	G	R01 A32 500	AIR FILTER		2					
5	G	R01 08Y 002	AUTO VANE		1					
6	G	R01 08Y 096	SCREW CAP		3					
7	G	R01 10Y 658	CORNER COVER		1					
8	G	R01 08Y 635	BOX ASSEMBLY		1					
9	G	R01 08Y 808	BACK PLATE		1					
10	G	R01 08Y 623	UNDER COVER		1					
11	G	R01 08Y 658	CORNER COVER		1					

# ELECTRICAL PARTS

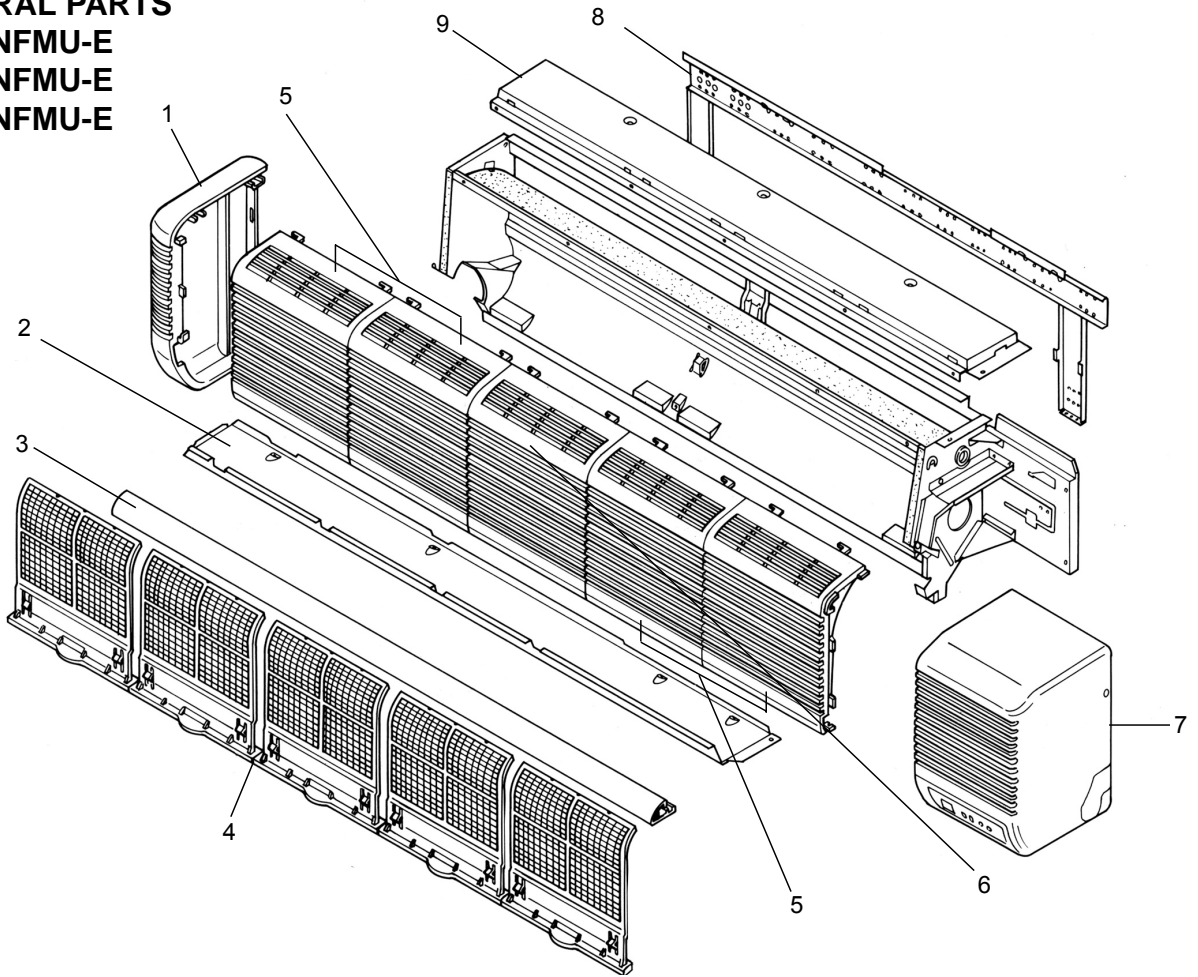
## PKFY-P12NGMU-E PKFY-P15NGMU-E



No.	RoHS	Parts No.	Parts Name	Specifications	Q'ty / set		Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PKFY-P	NGMU-E				Unit	Amount
1	G	T7W E30 762	FAN MOTOR	PM4N30-KA	1	1		MF			
2	G	T7W H02 480	HEAT EXCHANGER		1						
	G	T7W H03 480	HEAT EXCHANGER			1					
3	G	R01 E22 114	LINE FLOW FAN		1	1					
4	G	R01 E04 103	SLEEVE BEARING		1	1					
5	G	R01 08Y 102	BEARING MOUNT		1	1					
6	G	R01 08Y 106	BEARING SUPPORT		1	1					
7	G	T7W A01 675	FAN GUARD		1	1					
8	G	R01 08Y 524	DRAIN PLUG		1	1					
9	G	R01 08Y 530	NOZZLE ASSY		1	1					
10	G	R01 08Y 059	ARM		2	2					
11	G	R01 08Y 038	GUIDE VANE		10	10					
12	G	R01 10Y 038	GUIDE VANE		4	4					
13	G	R01 E14 223	VANE MOTOR		1	1		MV			
14	G	R01 08Y 527	DRAIN HOSE		1	1					
15	G	R01 08Y 135	MOTOR COVER		1	1					
16	G	R01 08Y 105	RUBBER MOUNT		2	2					
17	G	T7W E41 716	TERMINAL BLOCK	3P(L1, L2, GR)	1	1		TB2			
18	G	R01 E27 246	TERMINAL BLOCK	3P(M1,M2,S)	1	1		TB5			
19	G	R01 E21 246	TERMINAL BLOCK	2P(1,2)	1	1		TB15			
20	G	T7W E17 255	RUN CAPACITOR	2.0 $\mu$ F 440V	1	1		C			
21	G	R01 E38 313	POWER BOARD		1	1		P.B			
22	G	T7W E57 310	CONTROLLER BOARD		1	1		I.B			
23	G	T7W E46 202	ROOM THERMISTOR		1	1		TH21			
24	G	T7W E47 202	LIQUID PIPE THERMISTOR		1	1		TH22			
25	G	T7W E48 202	GAS PIPE THERMISTOR		1	1		TH23			
26	G	T7W E10 130	MOTOR SUPPORT		1	1					
27	G	R01 H05 401	LINEAR EXPANSION VALVE	PAR-21MAA	1	1		LEV			
28	G	—	REMOTE CONTROLLER		1	1					
29	G	T7W E01 294	ADDRESS BOARD		1	1		A.B			
30	G	T7W E06 304	ADDRESS CABLE		1	1					

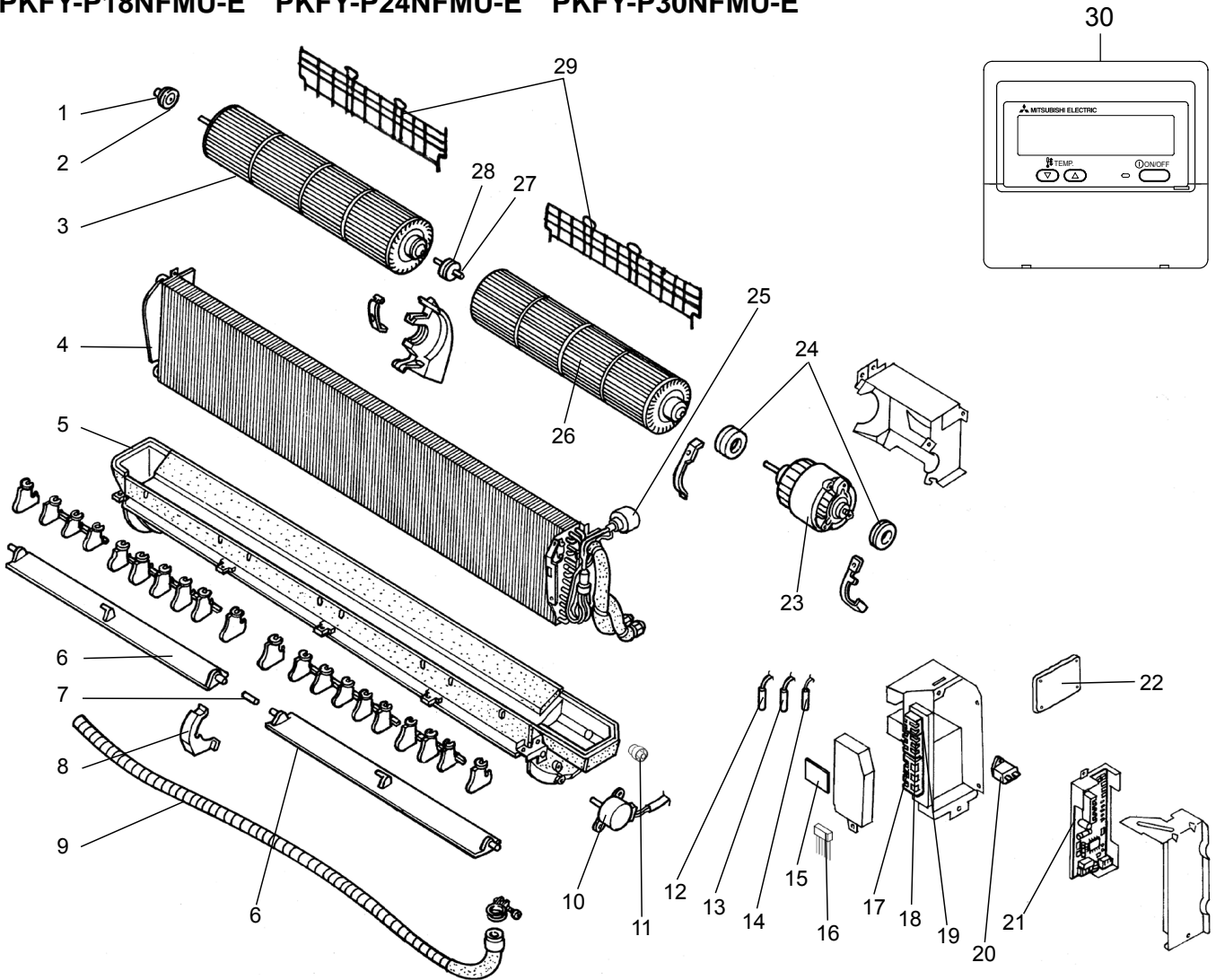
This REMOTE CONTROLLER is made by AIR-CONDITIONING & REFRIGERATION SYSTEMS WORKS., MITSUBISHI ELECTRIC CORPORATION.

**STRUCTURAL PARTS**  
**PKFY-P18NFMU-E**  
**PKFY-P24NFMU-E**  
**PKFY-P30NFMU-E**



No.	RoHS	Part No.	Part Name	Specification	Q'ty / set			Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PKFY-P · NFMU-E						Unit	Amount
					18	24	30					
1	G	R01 14G 662	LEFT SIDE PANEL		1	1	1					
2	G	R01 E02 812	UNDER PLATE		1	1						
	G	R01 E03 812	UNDER PLATE				1					
3	G	R01 E00 811	NOSE		1	1						
	G	R01 E01 811	NOSE				1					
4	G	R01 A17 500	AIR FILTER		4	4	5					
5	G	R01 17G 691	INTAKE GRILLE		2	2	2					
6	G	R01 18G 692	INTAKE GRILLE				1					
7	G	R01 14G 661	RIGHT SIDE PANEL		1	1	1					
8	G	R01 E03 808	BACK PLATE		1	1						
	G	R01 E04 808	BACK PLATE				1					
9	G	R01 E19 641	TOP PLATE		1	1						
	G	R01 E20 641	TOP PLATE				1					

**ELECTRICAL PARTS**  
**PKFY-P18NFMU-E PKFY-P24NFMU-E PKFY-P30NFMU-E**



No.	RoHS	Part No.	Part Name	Specification	Q'ty / set			Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PKFY-P · NFMU-E	18	24				30	Unit
1	G	R01 Z61 102	BEARING MOUNT		1	1	1					
2	G	R01 E04 103	SLEEVE BEARING		1	1	1					
3	G	R01 E23 114	LEFT LINEFLOW FAN		1	1						
	G	R01 19G 114	LEFT LINEFLOW FAN				1					
4	G	T7W H04 480	HEAT EXCHANGER		1							
	G	T7W H05 480	HEAT EXCHANGER			1						
	G	T7W K33 480	HEAT EXCHANGER				1					
5	G	T7W E24 529	DRAIN PAN		1	1						
	G	T7W E25 529	DRAIN PAN				1					
6	G	R01 18G 002	AUTO VANE		2	2						
	G	R01 19G 002	AUTO VANE				2					
7	G	R01 13G 063	JOINT SHAFT		1	1	1					

No.	RoHS	Part No.	Part Name	Specification	Q'ty / set			Remarks (Drawing No.)	Wiring Diagram Symbol	Recom- mended Q'ty	Price	
					PKFY-P · NFMU-E						Unit	Amount
					18	24	30					
8	G	R01 14G 621	CENTER COVER		1	1	1					
9	G	R01 E04 527	DRAIN HOSE		1	1	1					
10	G	T7W E05 223	VANE MOTOR		1	1	1		MV			
11	G	R01 E02 523	DRAIN SOCKET		1	1	1					
12	G	R01 H15 202	GAS PIPE THERMISTOR		1	1	1		TH23			
13	G	R01 H06 202	ROOM TEMPERATURE THERMISTOR		1	1	1		TH21			
14	G	R01 H05 202	LIQUID PIPE THERMISTOR		1	1	1		TH22			
15	G	T7W E01 294	ADDRESS BOARD		1	1	1		A.B			
16	G	R01 A01 304	ADDRESS CABLE		1	1	1					
17	G	T7W E41 716	TERMINAL BLOCK	3P(L1,L2,GR)	1	1	1		TB2			
18	G	R01 E27 246	TERMINAL BLOCK	3P(M1,M2,S)	1	1	1		TB5			
19	G	R01 E21 246	TERMINAL BLOCK	2P(1,2)	1	1	1		TB15			
20	G	T7W E16 255	FAN MOTOR CAPACITOR	2.5 $\mu$ F 440V	1	1	1		C			
21	G	T7W E57 310	INDOOR CONTROLLER BOARD		1	1	1		I.B			
22	G	R01 E38 313	POWER BOARD		1	1	1		P.B			
23	G	T7W B05 762	FAN MOTOR	PN4N45-K	1	1			MF			
	G	T7W B06 762	FAN MOTOR	PN4N70-K			1		MF			
24	G	R01 12G 105	RUBBER MOUNT		2	2						
	G	R01 16G 105	RUBBER MOUNT				2					
25	G	R01 H05 401	LINEAR EXPANSION VALVE		1	1			LEV			
	G	T7W E21 401	LINEAR EXPANSION VALVE				1		LEV			
26	G	R01 E04 115	RIGHT LINE FLOW FAN		1	1						
	G	R01 19G 115	RIGHT LINE FLOW FAN				1					
27	G	R01 E03 103	SLEEVE BEARING		1	1	1					
28	G	R01 KV5 102	BEARING MOUNT		1	1	1					
29	G	T7W E15 675	FAN GUARD		2	2						
	G	T7W E16 675	FAN GUARD				2					
30	G	—	REMOTE CONTROLLER	PAR-21MAA	1	1	1		R.B			

This REMOTE CONTROLLER is made by AIR-CONDITIONING & REFRIGERATION SYSTEMS WORKS,. MITSUBISHI ELECTRIC CORPORATION.

# CITY MULTI



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

©Copyright 2005 MITSUBISHI ELECTRIC ENGINEERING CO., LTD.  
Distributed in May 2009 No. OC342 REVISED EDITION-C PDF 7  
Distributed in May 2009 No. OC342 REVISED EDITION-B PDF 7  
Distributed in Aug. 2006 No. OC342 REVISED EDITION-A PDF 9  
Distributed in Jun. 2005 No. OC342 PDF 10  
Made in Japan

New publication, effective May 2009  
Specifications subject to change without notice