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R410A

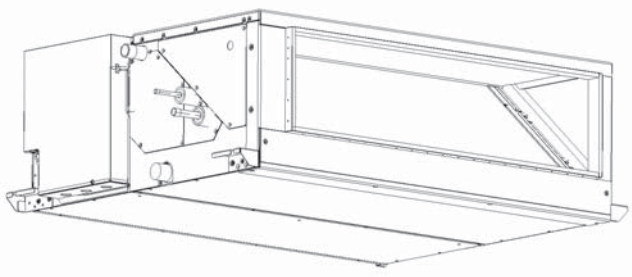
TECHNICAL & SERVICE MANUAL

Series PEFY Ceiling Concealed (Fresh Air Intake type)

Model name

<Indoor unit>

PEFY-P36, 48, 72, 96NMHU-E-OA



Indoor unit

CITY MULTI

HWE18040

Safety Precautions

Read before installation and performing electrical work

- Thoroughly read the following safety precautions prior to installation.
- Observe these safety precautions for your safety.
- This equipment may have adverse effects on the equipment on the same power supply system.
- Contact the local power authority before connecting to the system.

Symbol explanations

⚠ WARNING
This symbol indicates that failure to follow the instructions exactly as stated poses the risk of serious injury or death.

⚠ CAUTION
This symbol indicates that failure to follow the instructions exactly as stated poses the risk of serious injury or damage to the unit.

⃠	Indicates an action that must be avoided.
❗	Indicates important instructions.
⏚	Indicates a parts that requires grounding.
	Indicates that caution must be taken with rotating parts. (This symbol is on the main unit label.) <Color: Yellow>
	Indicates that the parts that are marked with this symbol pose a risk of electric shock. (This symbol is on the main unit label.) <Color: Yellow>

⚠ WARNING
Carefully read the labels affixed to the main unit.

⚠ WARNING

- **Ask your dealer or a qualified technician to install the unit.**
  - Improper installation by the user may result in water leakage, electric shock, or fire.
- **Properly install the unit on a surface that can withstand its weight.**
  - Unit installed on an unstable surface may fall and cause injury.
- **Only use specified cables. Securely connect each cable so that the terminals do not carry the weight of the cable.**
  - Improperly connected cables may produce heat and start a fire.
- **Take appropriate safety measures against wind gusts and earthquakes to prevent the unit from toppling over.**
  - Improper installation may cause the unit to topple over and cause injury or damage to the unit.
- **Only use accessories (i.e., air cleaners, humidifiers, electric heaters) recommended by Mitsubishi Electric.**
- **Do not make any modifications or alterations to the unit. Consult your dealer for repair.**
  - Improper repair may result in water leakage, electric shock, or fire.
- **Do not touch the heat exchanger fins with bare hands.**
  - The fins are sharp and pose a risk of cuts.
- **In the event of a refrigerant leak, thoroughly ventilate the room.**
  - If gaseous refrigerant leaks out and comes in contact with an open flame, toxic gases will be generated.
- **Properly install the unit according to the instructions in the Installation Manual.**
  - Improper installation may result in water leakage, electric shock, or fire.
- **Have all electrical work performed by an authorized electrician according to the local regulations and the instructions in this manual. Use a dedicated circuit.**
  - Insufficient power supply capacity or improper installation of the unit may result in malfunctions of the unit, electric shock, or fire.
- **Disconnect all electric power supplies before accessing of electric parts (inner of control box, fan motor, drain pump etc.)**
  - Touching electric parts result in electric shock.
- **Keep electrical parts away from water.**
  - Wet electrical parts pose a risk of electric shock, smoke, or fire.
- **Securely attach the control box cover.**
  - If the cover is not installed properly, dust or water may infiltrate and pose a risk of electric shock, smoke, or fire.
- **Only use the type of refrigerant that is indicated on the unit when installing or relocating the unit.**
  - Infiltration of any other types of refrigerant or air into the unit may adversely affect the refrigerant cycle and may cause the pipes to burst or explode.
- **When installing the unit in a small space, take appropriate precautions to prevent leaked refrigerant from reaching the limiting concentration.**
  - Leaked refrigerant gas will displace oxygen and may cause oxygen starvation. Consult your dealer before installing the unit.
- **Consult your dealer or a qualified technician when moving or reinstalling the unit.**
  - Improper installation may result in water leakage, electric shock, or fire.
- **After completing the service work, check for a refrigerant leak.**
  - If leaked refrigerant is exposed to a heat source, such as a fan heater, stove, or electric grill, toxic gases will be generated.
- **Do not try to defeat the safety features of the unit.**
  - Forced operation of the pressure switch or the temperature switch by defeating the safety features for these devices, or the use of accessories other than the ones that are recommended by Mitsubishi Electric may result in smoke, fire, or explosion.
- **Consult your dealer for proper disposal method.**
- **Do not use a leak detection additive.**

Precautions for handling units for use with R410A

⚠ CAUTION

- **Do not use the existing refrigerant piping.**
  - A large amount of chlorine that may be contained in the residual refrigerant and refrigerator oil in the existing piping may cause the refrigerator oil in the new unit to deteriorate.
- **Use refrigerant piping materials made of phosphorus deoxidized copper. Keep the inner and outer surfaces of the pipes clean and free of such contaminants as sulfur, oxides, dust, dirt, shaving particles, oil, and moisture.**
  - Contaminants in the refrigerant piping may cause the refrigerator oil to deteriorate.
- **Store the piping materials indoors, and keep both ends of the pipes sealed until immediately before brazing. (Keep elbows and other joints wrapped in plastic.)**
  - Infiltration of dust, dirt, or water into the refrigerant system may cause the refrigerator oil to deteriorate or cause the compressor to malfunction.
- **Use a small amount of ester oil, ether oil, or alkyl benzene to coat flares and flanges.**
  - Infiltration of a large amount of mineral oil may cause the refrigerator oil to deteriorate.
- **Charge the system with refrigerant in the liquid phase.**
  - If gaseous refrigerant is drawn out of the cylinder first, the composition of the remaining refrigerant in the cylinder will change and become unsuitable for use.
- **Only use R410A.**
  - The use of other types of refrigerant that contain chloride may cause the refrigerator oil to deteriorate.
- **Use a vacuum pump with a check valve.**
  - If a vacuum pump that is not equipped with a check valve is used, the vacuum pump oil may flow into the refrigerant cycle and cause the refrigerator oil to deteriorate.
- **Prepare tools for exclusive use with R410A. Do not use the following tools if they have been used with the conventional refrigerant: gauge manifold, charging hose, gas leak detector, check valve, refrigerant charge base, vacuum gauge, and refrigerant recovery equipment.**
  - If the refrigerant or the refrigerator oil that may be left on these tools are mixed in with R410A, it may cause the refrigerator oil in the new system to deteriorate.
    Infiltration of water may cause the refrigerator oil to deteriorate.
    Leak detectors for conventional refrigerants will not detect an R410A leak because R410A is free of chlorine.

♦**Do not use a charging cylinder.**
- If a charging cylinder is used, the composition of the refrigerant in the cylinder will change and become unsuitable for use.

♦**Exercise special care when handling tools for use with R410A.**
- Infiltration of dust, dirt, or water into the refrigerant system may cause the refrigerator oil to deteriorate.

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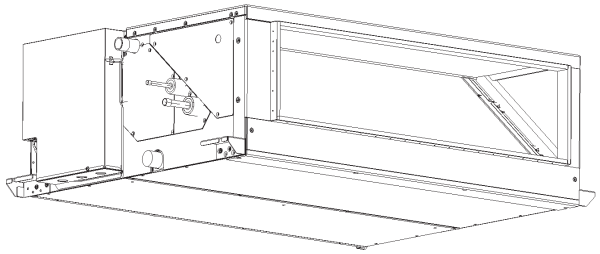
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[1] Features

Series PEFY Ceiling Concealed

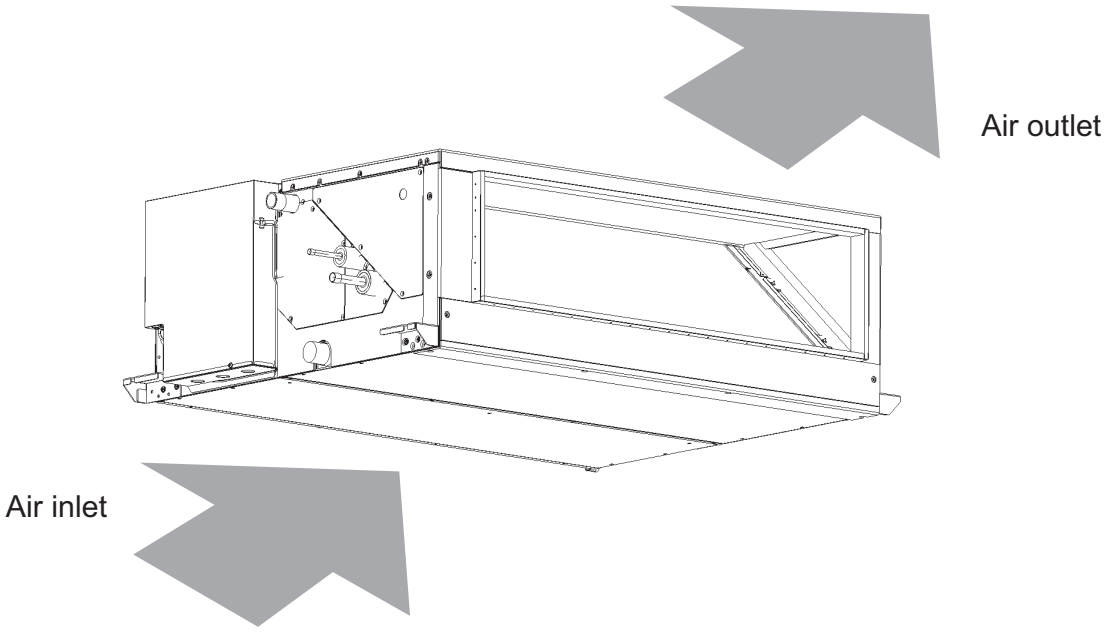


Indoor unit

Model	Cooling capacity/Heating capacity
	kW
PEFY-P36NMHU-E-OA	10.5/6.2
PEFY-P48NMHU-E-OA	14.1/8.2
PEFY-P72NMHU-E-OA	21.1/12.6
PEFY-P96NMHU-E-OA	28.1/16.7

[1] Part Names and Functions

1. Indoor (Main) Unit

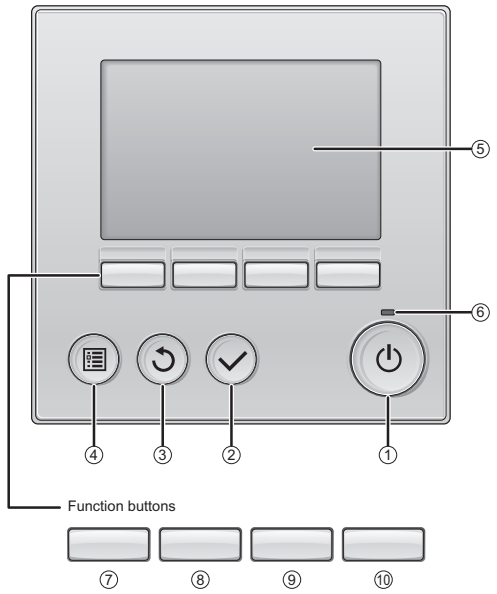


2. Remote Controller

[PAR-30MAOA]

Once the operation mode is selected, the unit will remain in the selected mode until changed.

(1) Remote Controller Buttons



- When the backlight is off, pressing any button turns the backlight on and does not perform its function. (except for the ON/OFF button)
- Most settings (except ON/OFF, mode, fan speed, temperature) can be made from the Menu screen.

① ON/OFF button

Press to turn ON/OFF the indoor unit.

② SELECT button

Press to save the setting.

③ RETURN button

Press to return to the previous screen.

④ MENU button

Press to bring up the Main menu.

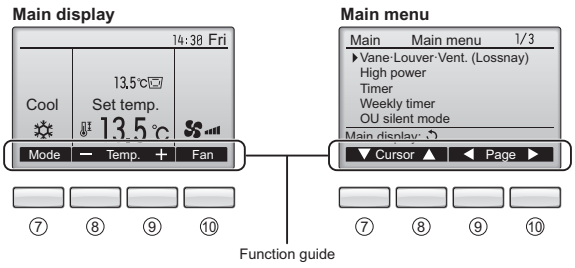
⑤ Backlit LCD

Operation settings will appear.
When the backlight is off, pressing any button turns the backlight on and it will stay lit for a certain period of time depending on the screen.

⑥ ON/OFF lamp

This lamp lights up in green while the unit is in operation. It blinks while the remote controller is starting up or when there is an error.

The functions of the function buttons change depending on the screen. Refer to the button function guide that appears at the bottom of the LCD for the functions they serve on a given screen.
When the system is centrally controlled, the button function guide that corresponds to the locked button will not appear.



⑦ Function button F1

Main display: Press to change the operation mode.
Main menu: Press to move the cursor down.

⑧ Function button F2

Main display: Press to decrease temperature.
Main menu: Press to move the cursor up.

⑨ Function button F3

Main display: Press to increase temperature.
Main menu: Press to go to the previous page.

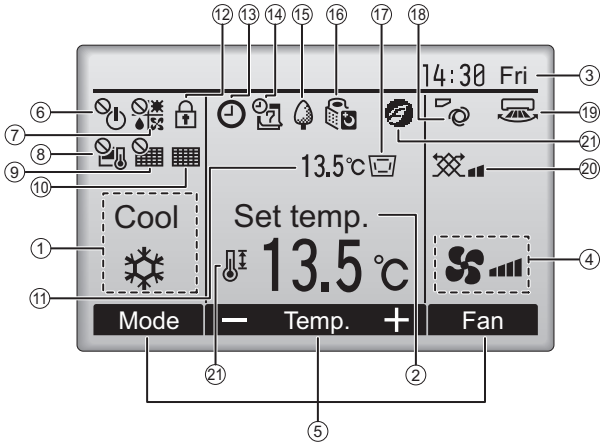
⑩ Function button F4

Main display: Press to change the fan speed.
Main menu: Press to go to the next page.

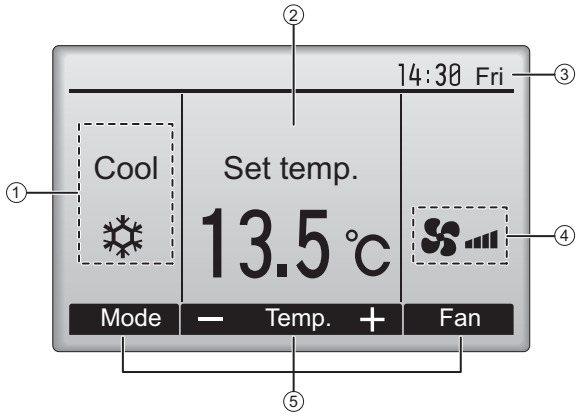
(2) Remote Controller Display

The main display can be displayed in two different modes: "Full" and "Basic."
The factory setting is "Full." To switch to the "Basic" mode, change the setting on the "Main display" setting screen (Main menu > Initial setting > Main display).

Full mode



Basic mode



* All icons are displayed for explanation.

① Operation mode

② Preset temperature

③ Clock

④ Fan speed

⑤ Button function guide

Functions of the corresponding buttons appear here.

⑥

Appears when the ON/OFF operation is centrally controlled.

⑦

Appears when the operation mode is centrally controlled.

⑧

Appears when the preset temperature is centrally controlled.

⑨

Appears when the filter reset function is centrally controlled.

⑩

Indicates when filter needs maintenance.

⑪ Temperature

Current outlet air temperature appears here.

⑫

Appears when the buttons are locked.

⑬

Appears when the On/Off timer, Night setback, or Auto-off timer function is enabled.

appears when the timer is disabled by the centralized control system.

⑭

Appears when the Weekly timer is enabled.

⑮

Appears while the units are operated in the energy-save mode.

⑯

Appears while the outdoor units are operated in the silent mode.

⑰

Appears when the thermistor on the indoor unit is activated to monitor the outlet air temperature (⑪).
* This icon appears when the remote controller is connected to the Fresh Air Intake model. If the icon does not appear, refer to the indoor unit Instruction Book.
appears when the built-in thermistor on the remote controller is activated to monitor the room temperature.

⑱

Indicates the vane setting.
This function cannot be used on the Fresh Air Intake model units.

⑲

Indicates the louver setting.
This function cannot be used on the Fresh Air Intake model units.

⑳

Indicates the ventilation setting.
This function cannot be used on the Fresh Air Intake model units.

㉑

Appears when the preset temperature range is restricted.

㉒

Appears when an energy-saving operation is performed using a "3D i-See sensor" function.

[1] Specification

1. Specification

Model				PEFY-P36NMHU-E-OA	PEFY-P48NMHU-E-OA	PEFY-P72NMHU-E-OA	PEFY-P96NMHU-E-OA
Power source				1-phase 208/230 V 60 Hz	1-phase 208/230 V 60 Hz	1-phase 208/230 V 60 Hz	1-phase 208/230 V 60 Hz
Cooling capacity		*1	BTU/h	36,000	48,000	72,000	96,000
		*1	kW	10.5	14.1	21.1	28.1
	*2	Power input	kW	0.130	0.180	0.220	0.320
(208 V)	*2	Current input	A	1.25	1.59	1.86	2.56
Temp. range of cooling				17.2°CD.B. ~ 47.7°CD.B. 63°FD.B. ~ 118°FD.B. Thermo-off (FAN-mode) automatically starts if the outdoor temperature is lower than 63°F (17.2°C)D.B. The fan speed automatically runs at a very low speed if the outdoor temperature is higher than 109°F (42.8°C)D.B.			
Heating capacity		*3	BTU/h	21,000	28,000	43,000	57,000
		*3	kW	6.2	8.2	12.6	16.7
	*2	Power input	kW	0.140	0.200	0.240	0.330
(208 V)	*2	Current input	A	1.09	1.46	1.70	2.42
Temp. range of heating				-10°CD.B. ~ 15°CD.B. 14°FD.B. ~ 59°FD.B. Thermo-off (FAN-mode) automatically starts if the outdoor temperature is higher than 59°F (15.0°C)D.B.			
External finish				Galvanized	Galvanized	Galvanized	Galvanized
External dimension H x W x D			inch	15 x 47-1/16 x 35-7/16	15 x 47-1/16 x 35-7/16	18-9/16 x 49-1/4 x 44-1/8	18-9/16 x 49-1/4 x 44-1/8
			mm	380 x 1,195 x 900	380 x 1,195 x 900	470 x 1,250 x 1,120	470 x 1,250 x 1,120
Net weight			lbs (kg)	109 (49)	109 (49)	177 (80)	183 (83)
Heat exchanger				Cross fin (Aluminium fin and copper tube)	Cross fin (Aluminium fin and copper tube)	Cross fin (Aluminium fin and copper tube)	Cross fin (Aluminium fin and copper tube)
FAN		Type x Quantity		Sirocco fan x 1	Sirocco fan x 1	Sirocco fan x 2	Sirocco fan x 2
		External	in.WG	<0.60> - 0.80 - <1.00>	<0.60> - 0.80 - <1.00>	<0.60> - 0.80 - <1.00>	<0.60> - 0.80 - <1.00>
	*4, 5	static press.	Pa	<150> - 200 - <250>	<150> - 200 - <250>	<150> - 200 - <250>	<150> - 200 - <250>
		Motor Type		DC motor	DC motor	DC motor	DC motor
		Motor output	kW	0.244	0.244	0.375	0.375
		Driving mechanism		Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	*5	Air flow rate		(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			cfm	350 - 400 - 450	500 - 550 - 600	700 - 800 - 900	1,000 - 1,100 - 1,200
			m^3/min	9.9 - 11.3 - 12.7	14.2 - 15.6 - 17.0	19.8 - 22.7 - 25.5	28.3 - 31.1 - 34.0
			L/s	165 - 188 - 212	237 - 260 - 283	330 - 378 - 425	472 - 518 - 567
	*6	Air flow rate	cfm	320	420	700	790
		(Very low)	m^3/min	9.1	11.9	19.8	22.4
			L/s	152	198	330	373
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			dB <A>	35-38-40	38-40-41	34-38-42	39-41-44
Air filter				Field supply	Field supply	Field supply	Field supply
Diameter of refrigerant pipe	Liquid	(R410A)	inch (mm)	3/8 (9.52)Brazed	3/8 (9.52)Brazed	3/8 (9.52)Brazed	3/8 (9.52)Brazed
	Gas	(R410A)	inch (mm)	5/8 (15.88)Brazed	5/8 (15.88)Brazed	3/4 (19.05)Brazed	7/8 (22.22)Brazed
Field drain pipe size			inch (mm)	O.D.1-1/4 (32) x2	O.D.1-1/4 (32) x2	O.D.1-1/4 (32) x2	O.D.1-1/4 (32) x2
Remarks				Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Systems with considerably long pipe runs, in heating mode, may be subject to slightly louder than normal noise from the outdoor unit/s.			

Notes:

1.Cooling capacity indicates the maximum value at operation under the following condition.
Cooling: Indoor 91°F (32.7°C)DB/82°F (27.8°C)WB, Outdoor 91°F (32.7°C)DB.
The set temperature of the remote controller is 63°F (17.2°C).
2.The values are measured at the factory setting of external static pressure.
3.Heating capacity indicates the maximum value at operation under the following condition.
Heating: Indoor 32°F (0°C)DB/27°F (-2.9°C)WB, Outdoor 32°F (0°C)DB/27°F (-2.9°C)WB.
The set temperature of the remote controller is 77°F (25°C).
4.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.If the airflow rate is over the usable range, dew drop can be caused from the air outlet and the air flow rate is changed automatically because of the output down by the fan motor control. If the air flow rate is less than the usable range, condensation from the unit surface can be caused.
6.The very low mode is not selectable from the remote controller. The unit will automatically operate in the very low mode when the outside temperature exceeds 109°F (42.8°C) in the Cooling mode or drops below 14°F (-10°C) in the Heating mode.
• The combination of fresh air intake type indoor units with other types of indoor units that handle internal thermal load may cause the conflict of operation mode. It is not recommended when fresh air intake type indoor unit is connected to the Y or WY series.
• Depending on the air conditioning load, outside temperature, and due to the activation of protection functions, the desired preset temperature may not always be achieved and the discharge temperature may swing. Note that untreated outside air may be delivered directly into the room upon the activation of protection functions.
• Fresh air intake type indoor units cannot be connected to PUMY and cannot be connected to an outdoor unit together with PWFY series.
• The maximum connectable indoor units to 1 outdoor unit are 110% (100% in case of heating below 23°F (-5°C)).
• When fresh air intake type indoor units connect to an outdoor unit together with other types of indoor unit, the total capacity of fresh air intake type indoor units needs to be 30% or less of the connected outdoor unit capacity.
• The AUTO mode on the local remote controller is available only when fresh air intake type indoor unit is connected to the R2 or WR2 series of outdoor unit.
• The system changeover function is available only when all the connected indoor units are fresh air intake type indoor units.
• The fan temporary stops during defrost.
• The cooling and heating capacities are the maximum capacities that were obtained by operating in the above air conditions and with a refrigerant pipe of about 25 ft (7.5 m) and a level difference of 0 m.
• The actual capacity characteristics vary with the combination of indoor and outdoor units. See the technical information in DATA BOOK for the details.
• Thermo off (Fan) operation automatically starts either when temperature is lower than 63°F (17.2°C)DB in cooling mode or when the temperature exceeds 59°F (15.0°C)DB in heating mode.
• Dry mode is not available.
• Un-conditioned outdoor air such as humid air or cold air blows to the indoor during thermo off operation.
Please be careful when positioning indoor unit air outlet grilles, ie take the necessary precautions for cold air, and also insulate rooms for dew condensation prevention as required.
• Air filter must be installed in the air intake side. The filter should be attached where easy maintenance is possible in case of usage of field supply filters.
• Before switching ducts by using a damper, be sure to bring the indoor unit to a stop to prevent malfunction.
Make sure to set the static pressure in all ducts within the range specified in the P-Q line diagram in the DATA BOOK.
• This indoor unit does not interlock with an electric heater.
• Regarding P96NMHU-E-OA, the low notch air flow rate is different from the spec value when the external static pressure setting is set to 150Pa.
See Fan characterics curves in DATA BOOK for the details.

Unit converter	
kcal	=kW x 860
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

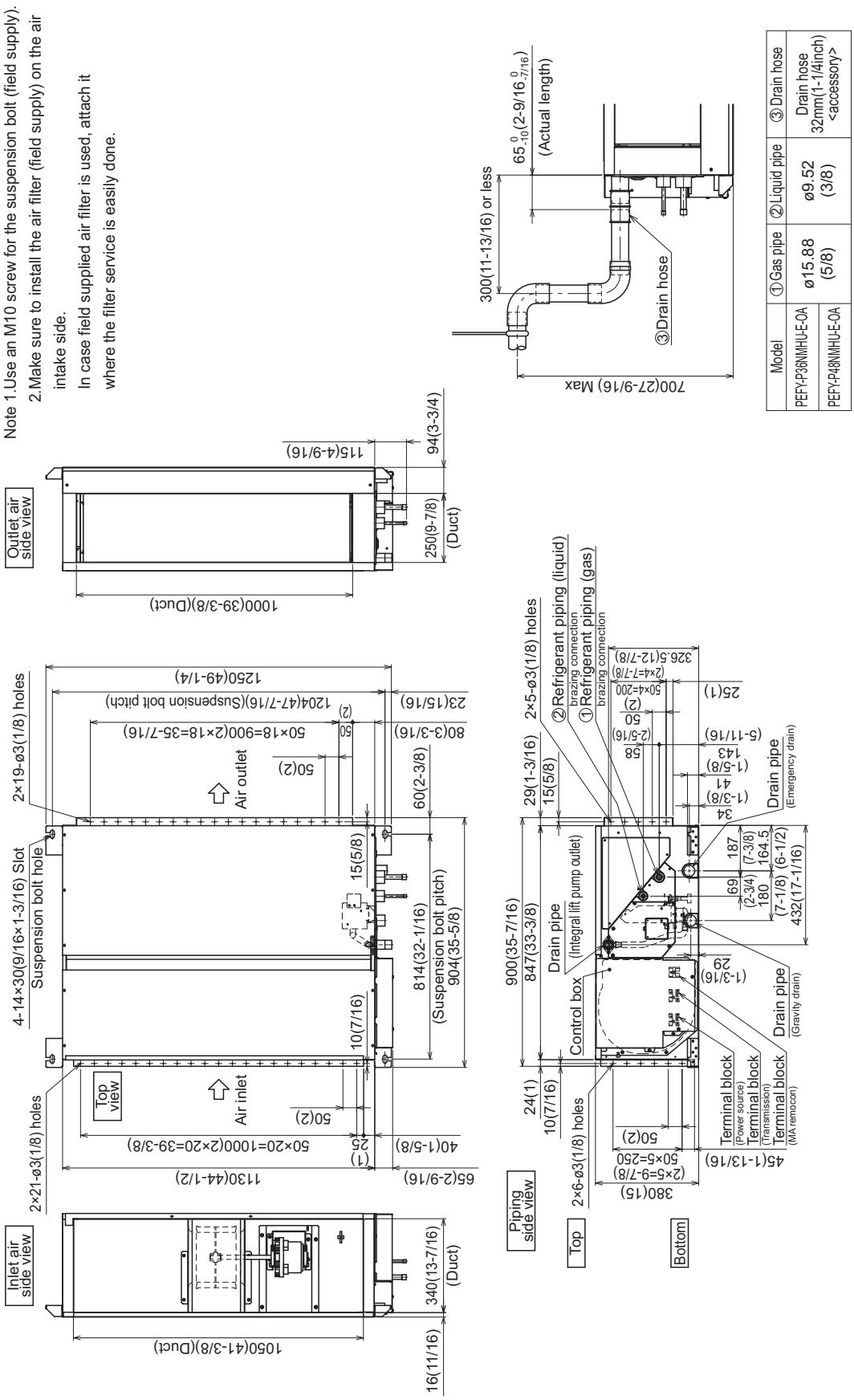
2. Electrical parts specifications

model / Parts name	Symbol	PEFY-P36, 48NMHU-E-OA	PEFY-P72NMHU-E-OA	PEFY-P96NMHU-E-OA
Outlet air temperature thermistor	TH21	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Liquid pipe thermistor	TH22	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Gas pipe thermistor	TH23	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Inlet air temperature thermistor	TH24	Resistance 0°C/15kΩ, 10°C/9.6kΩ, 20°C/6.3kΩ, 25°C/5.4kΩ, 30°C/4.3kΩ, 40°C/3.0kΩ		
Fuse	FUSE	250 VAC 6.3A		
Fan motor (with inner thermostat)	MF1, 2	8-pole, output 244W SIC-101CW-D8244-4	10-pole, output 375W KMUC4E2MW	
Linear expansion valve	LEV	12 VDC Stepping motor drive		
Power supply terminal bed	TB2	(L, N, ⏚) 250V 20A		
Transmission terminal bed	TB5 TB15	(M1, M2, S) 250V 20A (1, 2) 250V 15A		

[1] Outlines and Dimensions

1. PEFY-P36, 48NMHU-E-OA

Unit: mm (in.)



[Maintenance access space]
Secure enough access space to allow for the maintenance,inspection,and replacement of the motor,fan,heat exchanger, drain pan and control box in one of the following ways.
Select an installation site for the indoor unit so that it's maintenance access space will not be obstructed by beam or other objects.

Create access door 1(450×450mm)(17-3/4×17-3/4inch) for the maintenance from the unit side when the thermistor,LEV and control box is exchanged.(Fig.2,4)

(1) When a space of 300mm(11-13/16inch) or more is available below the unit between the unit and the ceiling.
Create access door 2(600×600mm)(23-5/8×23-5/8inch) for the maintenance from the bottom when the motor,fan,heat exchanger and drain pan is cleaned(exchanged).(Fig.2)
(2) When a space of less than 300mm(11-13/16inch) is available below the unit between the unit and the ceiling.
(At least 20mm(13/16inch) of space should be left below the unit as shown in Fig.3.)
Create access door 3 for the maintenance from the bottom when the motor,fan,heat exchanger and drain pan is cleaned(exchanged).(Fig.4)

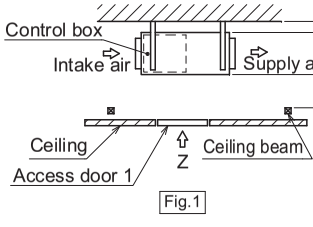


Fig.1

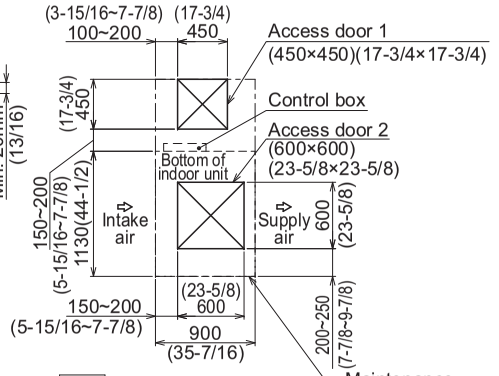


Fig.2 (Viewed from the direction of the arrow Z)

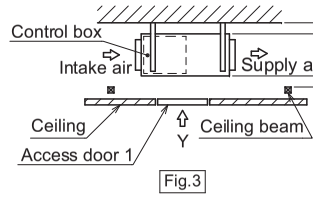


Fig.3

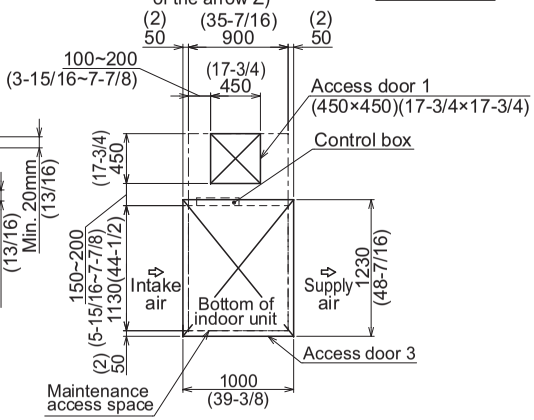
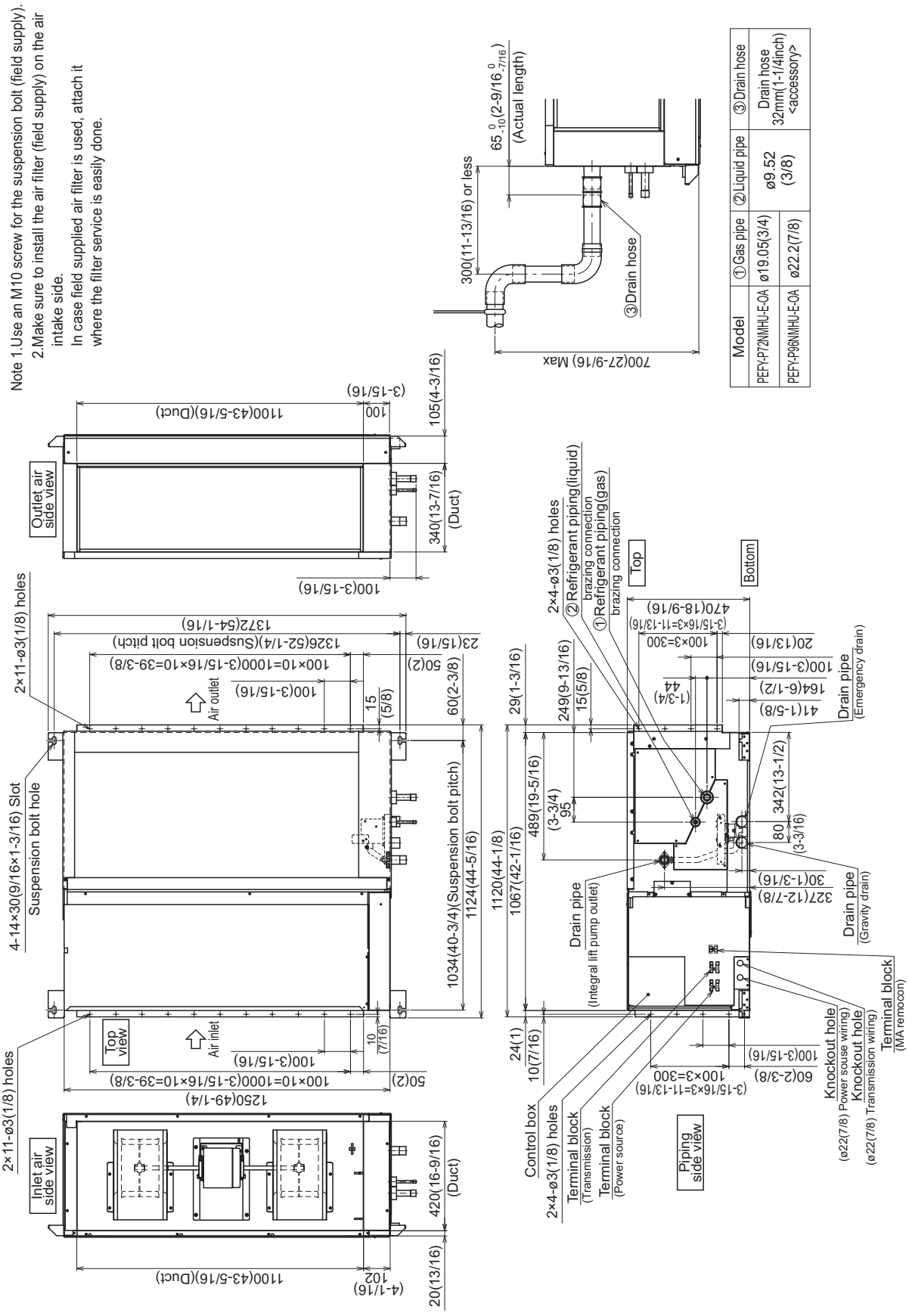


Fig.4 (Viewed from the direction of the arrow Y)

Unit: mm (in.)

2. PEFY-P72, 96NMHU-E-OA

Unit: mm (in.)



[Maintenance access space]

Secure enough access space to allow for the maintenance,inspection,and replacement of the motor,fan,heat exchanger, drain pan and control box in one of the following ways.
Select an installation site for the indoor unit so that it's maintenance access space will not be obstructed by beam or other objects.

Create access door 1(450×450mm)(17-3/4×17-3/4inch) for the maintenance from the unit side when the thermistor,LEV and control box is exchanged.(Fig.2,4)

(1) When a space of 500mm(19-11/16inch) or more is available below the unit between the unit and the ceiling.
Create access door 2(600×600mm)(23-5/8×23-5/8inch) for the maintenance from the bottom when the motor,fan,heat exchanger and drain pan is cleaned(exchanged).(Fig.2)

(2) When a space of less than 500mm(19-11/16inch) is available below the unit between the unit and the ceiling.
(At least 20mm(13/16inch) of space should be left below the unit as shown in Fig.3.)
Create access door 3 for the maintenance from the bottom when the motor,fan,heat exchanger and drain pan is cleaned(exchanged).(Fig.4)

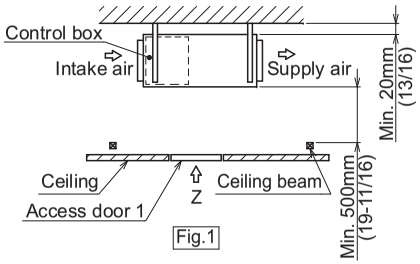


Fig.1

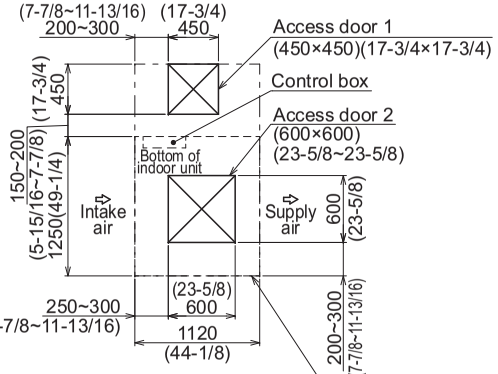


Fig.2 (Viewed from the direction of the arrow Z)

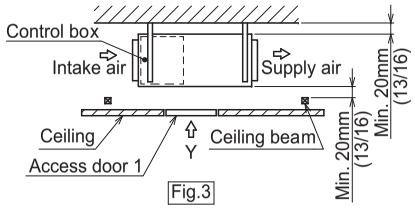


Fig.3

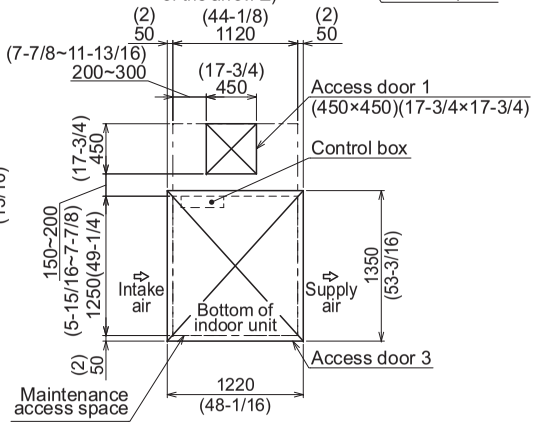
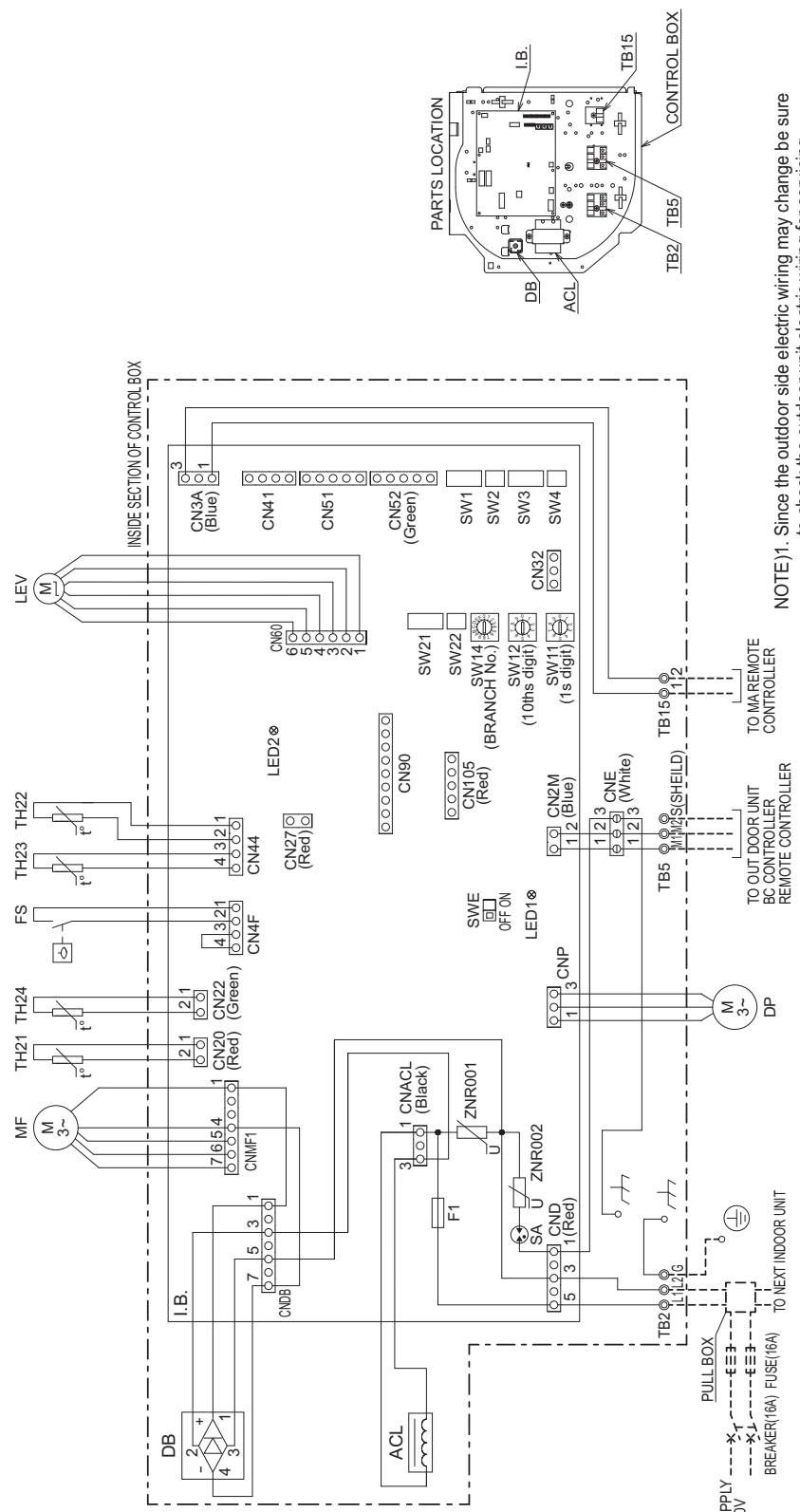


Fig.4 (Viewed from the direction of the arrow Y)

[1] Wiring Diagram

1. PEFY-P36, 48NMHU-E-OA

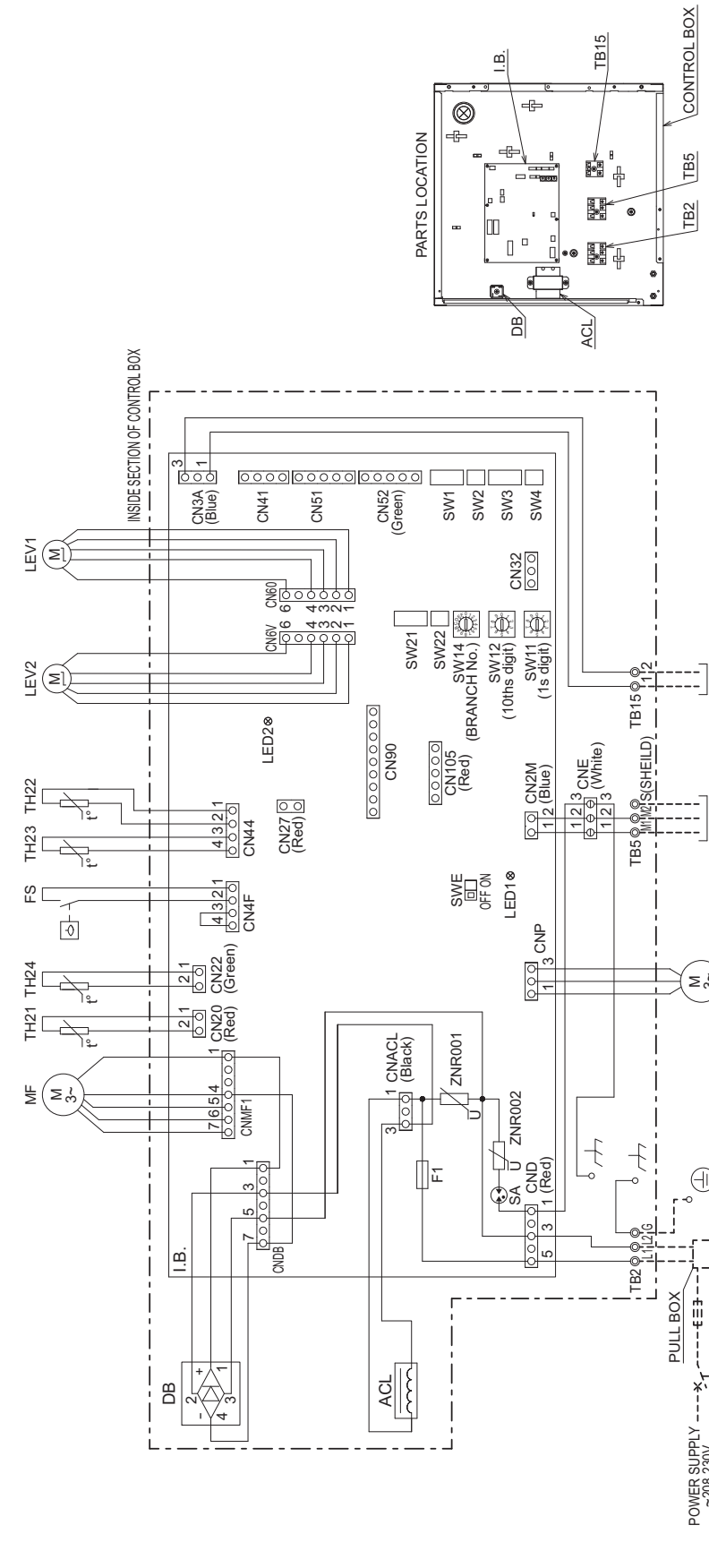


NOTE)1. Since the outdoor side electric wiring may change be sure to check the outdoor unit electric wiring for servicing.
2. Symbols used in wiring diagram are
○ ○ ○ : Connector, □ : Terminal,
------- (Heavy dotted line): Field wiring,
3. Have all electric work done by a licensed electrician according to the local regulations.
4. Earth leakage circuit breaker should be set up on the wiring of the power supply.
5. To perform a drainage test for the drain pump turn on the SWE on the control board while the indoor unit is being powered.
*Be sure to turn off the SWE after completing a drainage test or test run.
6. Use copper supply wires.

SYMBOL EXPLANATION

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
ACL	AC reactor(Power factor improvement)	I.B.	Indoor controller board	I.B.	Indoor controller board
DB	Diode Bridge	SA	Arrester	SW2	Switch (for capacity code)
DP	Drain Pump	F1	Fuse AC250V 6.3A	SW3	Switch (for mode selection)
FS	Float switch	ZNR001,002	Varistor	SW4	Switch (for model selection)
MF	Fan Motor	CN27	Connector (Damper output)	SW11	Switch (1s digit address set)
LEV	Electrical linear expansion valve	CN32	Connector (Remote switch)	SW12	Switch (10ths digit address set)
TB2	Power source terminal block	CN41	Connector (HA terminal-A)	SW14	Switch (BRANCH No.)
TB5	Transmission terminal block	CN51	Connector (Centrally control)	SW21	Switch (for static pressure selection)
TB15	Transmission terminal block	CN52	Connector (Remote indication)	SW22	Switch (Wireless pair No.)
TH21	Thermistor (outlet air temp. detection)	CN90	Connector (Wireless)	SWE	Connector (emergency operation)
TH22	Thermistor (piping temp.detection/liquid)	CN105	Connector (IT terminal)	LED1	LED(Power supply)
TH23	Thermistor (piping temp.detection/gas)	SW1	Switch (for mode selection)	LED2	LED(Remote controller supply)
TH24	Thermistor (inlet air temp. detection)				

2. PEFY-P72, 96NMHU-E-OA



NOTE)1. Since the outdoor side electric wiring may change be sure to check the outdoor unit electric wiring for servicing.
2. Symbols used in wiring diagram are
   ○ ○ ○ : Connector, □ : Terminal.
   ------- (Heavy dotted line): Field wiring,
3. Have all electric work done by a licensed electrician according to the local regulations.
4. Earth leakage circuit breaker should be set up on the wiring of the power supply.
5. To perform a drainage test for the drain pump turn on the SWE on the control board while the indoor unit is being powered.
   *Be sure to turn off the SWE after completing a drainage test or test run.
6. Use copper supply wires.

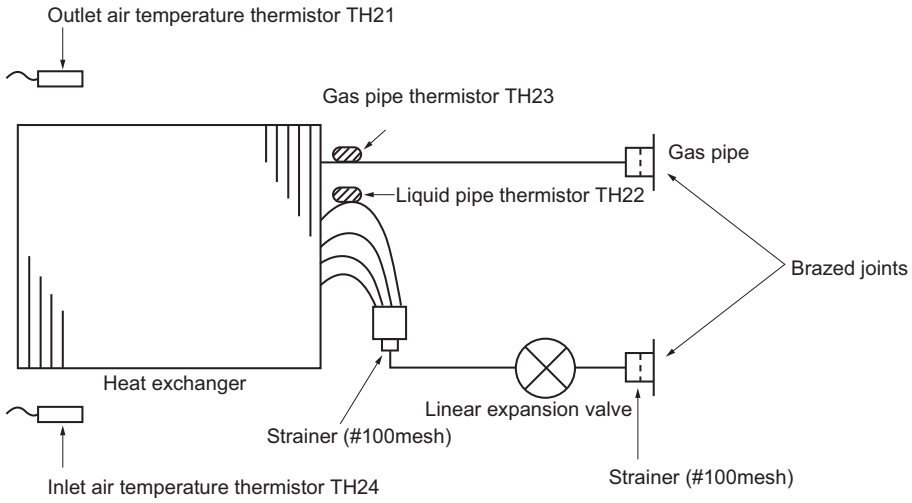
SYMBOL EXPLANATION

SYMBOL	NAME
ACL	AC reactor(Power factor improvement)
DB	Diode Bridge
DP	Drain Pump
FS	Float switch
MF	Fan Motor
LEV1,LEV2	Electrical linear expansion valve
TB2	Power source terminal block
TB5	Transmission terminal block
TB15	Transmission terminal block
TH21	Thermistor (outlet air temp. detection)
TH22	Thermistor (piping temp.detection/liquid)
TH23	Thermistor (piping temp.detection/gas)
TH24	Thermistor (inlet air temp. detection)

SYMBOL	NAME
I.B.	Indoor controller board
SA	Arrester
F1	Fuse AC250V 6.3A
ZNR001,002	Varistor
CN27	Connector (Damper output)
CN32	Connector (Remote switch)
CN41	Connector (HA terminal-A)
CN51	Connector (Centrally control)
CN52	Connector (Remote indication)
CN90	Connector (Wireless)
CN105	Connector (IT terminal)
SW1	Switch (for mode selection)

SYMBOL	NAME
I.B.	Indoor controller board
SW2	Switch (for capacity code)
SW3	Switch (for mode selection)
SW4	Switch (for model selection)
SW11	Switch (1s digit address set)
SW12	Switch (10ths digit address set)
SW14	Switch (BRANCH No.)
SW21	Switch (for static pressure selection)
SW22	Switch (Wireless pair No.)
SWE	Connector (emergency operation)
LED1	LED(Power supply)
LED2	LED(Remote controller supply)

[1] Refrigerant system diagram



Capacity	PEFY-P36, 48NMHU-E-OA	PEFY-P72NMHU-E-OA	PEFY-P96NMHU-E-OA
Gas pipe	ø15.88 [5/8]	ø19.05 [3/4]	ø22.2 [7/8]
Liquid pipe	ø9.52 [3/8]	ø9.52 [3/8]	ø9.52 [3/8]

[1] Troubleshooting

1. Check methods

1. Component and check points

(1) Thermistor

- Inlet air temperature thermistor (TH21)
- Liquid pipe thermistor (TH22)
- Gas pipe thermistor (TH23)
- Outdoor air temperature thermistor (TH24)

Disconnect the connector and measure the resistance between terminals with a tester.
(Ambient temperature 10°C - 30°C)

Normal	Abnormal
4.3kΩ - 9.6kΩ	Open or short

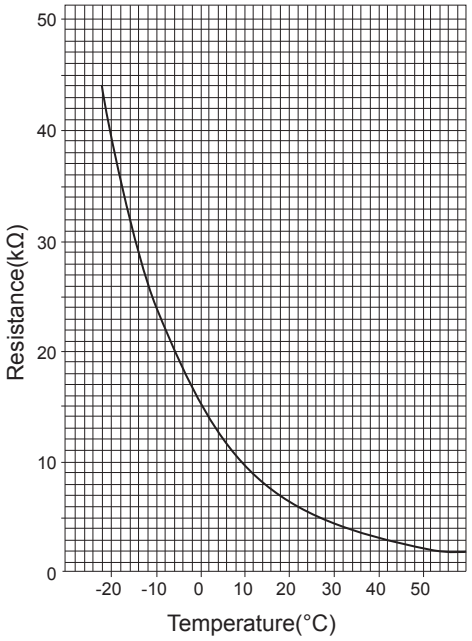
(Refer to the thermistor characteristic graph below.)

1) Thermistor characteristic graph

- Thermistor R_0 = 15 kΩ±3%
- Multiplier of B = 3480 kΩ±2%

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

0°C 15kΩ
10°C 9.6kΩ
20°C 6.3kΩ
25°C 5.2kΩ
30°C 4.3kΩ
40°C 3.0kΩ

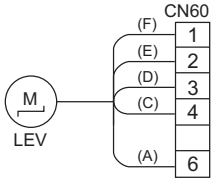


(2) Fan motor (CNMF)

Refer to the page on "DC fan motor (fan motor/indoor control board)."

(3) Linear expansion valve

Disconnect the connector, and measure the resistance between terminals with a tester.
Refer to the next page for details.



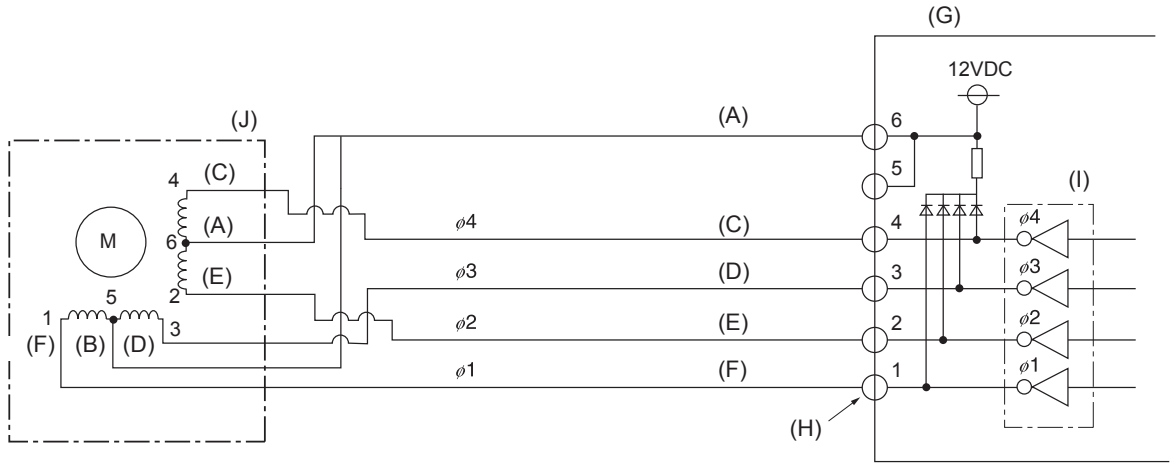
Normal				Abnormal
1-6 White-Red	2-6 Yellow-Red	3-6 Orange-Red	4-6 Blue-Red	Open or short
(150Ω) ±10%				

(A) Red
(C) Blue
(D) Orange
(E) Yellow
(F) White

1) Summary of linear expansion valve (LEV) operation

- The LEV is operated by a stepping motor, which operates by receiving a pulse signal from the indoor control board.
- The LEV position changes in response to the pulse signal.

Indoor control board and LEV connection



(A)	Red	(G)	Control board
(C)	Blue	(H)	Connection (CN60)
(D)	Orange	(I)	Drive circuit
(E)	Yellow	(J)	Linear expansion valve
(F)	White		

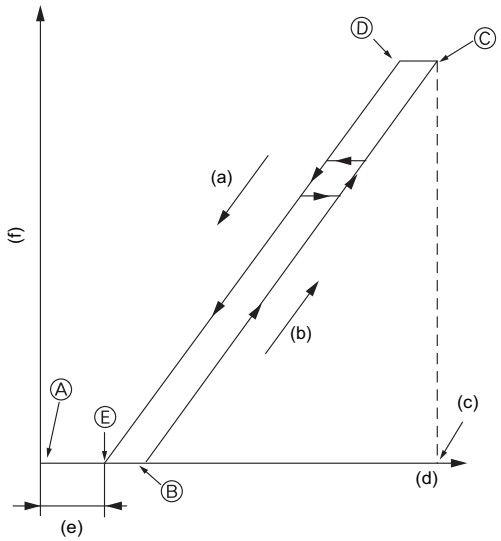
Pulse signal output and valve operation

Phase number	Output pulse			
	1	2	3	4
ø1	ON	OFF	OFF	ON
ø2	ON	ON	OFF	OFF
ø3	OFF	ON	ON	OFF
ø4	OFF	OFF	ON	ON

The output pulse changes in the following order:
When the valve closes 1 -> 2 -> 3 -> 4 -> 1
When the valve opens 4 -> 3 -> 2 -> 1 -> 4

- When the valve position remains the same, all output signals will be OFF.
- If any output signal is missing or if the signal remains ON, the motor vibrates and makes clicking noise.

2) LEV operation



(a) Close

(b) Open

(c) Fully open valve (2000 pulses)

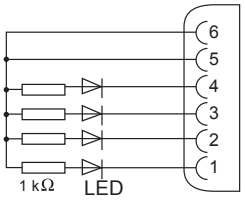
(d) No. of pulses

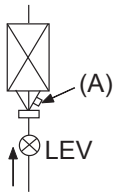
(e) Extra tightening (41 pulses)

(f) Valve opening degree

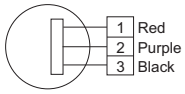
- When the power is turned on, a pulse signal of fully open pulse + 10% pulse is output (valve closure signal), to bring the valve to position A.
- When the valve is operating normally, it is free of vibration noise. If the valve locks or when it goes from point E to A in the figure, it makes louder noise than would be heard when there is an open phase.
- Check for abnormal sound/vibration by placing the metal tip of a screwdriver against the valve and the handle side against your ear.

3) Troubleshooting

Symptom	Checking Criteria	Remedy
Circuit failure on the microcomputer	Disconnect the connectors on the control board, and connect LEDs to test the circuit as shown below.  Pulse signals are output for 10 seconds when the main power is turned on. If there are LEDs that do not light up at all or remain lit after the pulses are turned off, there is a problem with the driving circuit.	Replace the indoor control board if driving circuit failure is detected.
Locked LEV	The motor will idle and make small clicking noise if it is run while the LEV is locked. If this clicking noise is heard both when the valve is fully closed and while it is being opened, it indicates a problem.	Replace the LEV.
Disconnected or shorted LEV motor coils	Measure the resistance between the coils with a tester (red-white, red-orange, Red-yellow, Red-blue). The normal range of resistance is 150Ω±10%	Replace the LEV.

Valve closure failure (leaky valve)	To check the LEV on the indoor unit, check the indoor unit liquid pipe temperature that appears on the operation monitor on the outdoor unit's multi control board while operating the indoor unit in question in the FAN mode and the other indoor units in the cooling mode. (A) Termistor (TH22)  	Replace the LEV if the amount of leakage is great.
	Normally, the LEV is fully closed while the unit is in the FAN mode. If the valve is leaky, liquid pipe thermistor reading will be lower than normal. If it is significantly lower than the inlet temperature on the remote controller, valve closure failure is suspected. If the amount of leakage is insignificant, replacement of LEV is unnecessary unless it is causing a problem.	
Misconnections of connectors or contact failure	Perform a visual check for disconnected connectors. Perform a visual check of lead wire color.	Disconnect the connectors on the control board and perform a continuity test.

(4) Drain pump



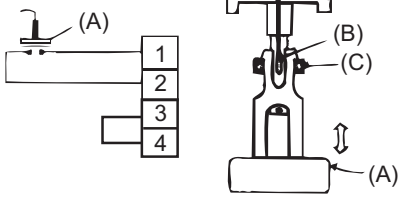
1. Check if the drain float switch works properly.
2. Check if the drain pump works and drains water properly in cooling operation.
3. If no water drains, confirm that the check code 2502 will not be displayed 10 minutes after the operation starts.

Note: The drain pump for this model is driven by the internal DC motor of controller board, so it is not possible to measure the resistance between the terminals.

Normal
Red–Black: Input 13V DC → The fan starts to rotate.
Purple–Black: Abnormal (check code 2502) if it outputs 0–13 V square wave (5 pulses/rotation), and the number of rotaion is not normal.

(5) Drain float switch (CN4F)

Disconnect the connector, and measure the resistance between terminals with a tester.



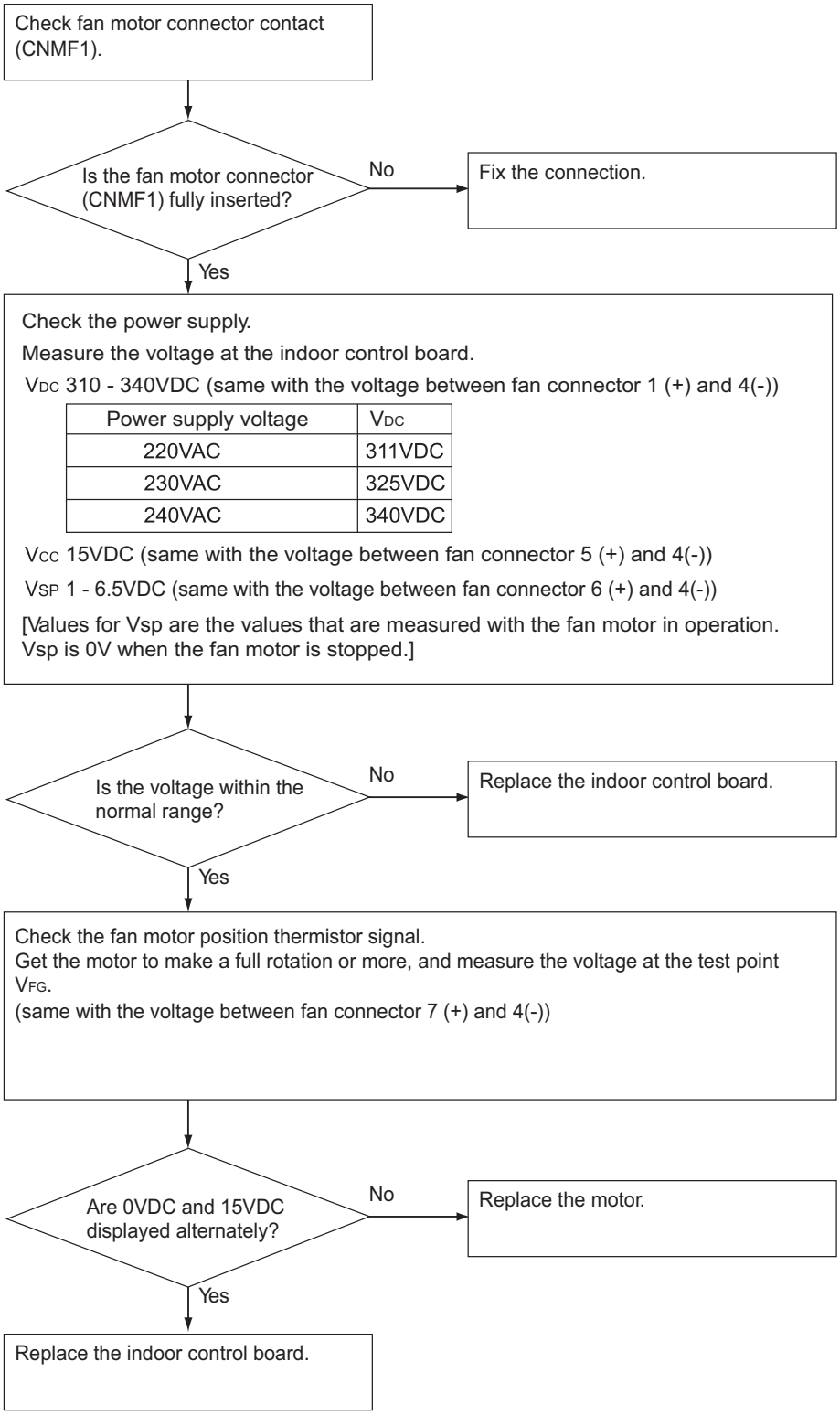
(A) Moving part
(B) Switch
(C) Magnet

Position of the moving part	Normal	Abnormal
Up	Short	(any position but short)
Down	Open	(any position but open)

2. DC fan motor (fan motor/indoor control board)

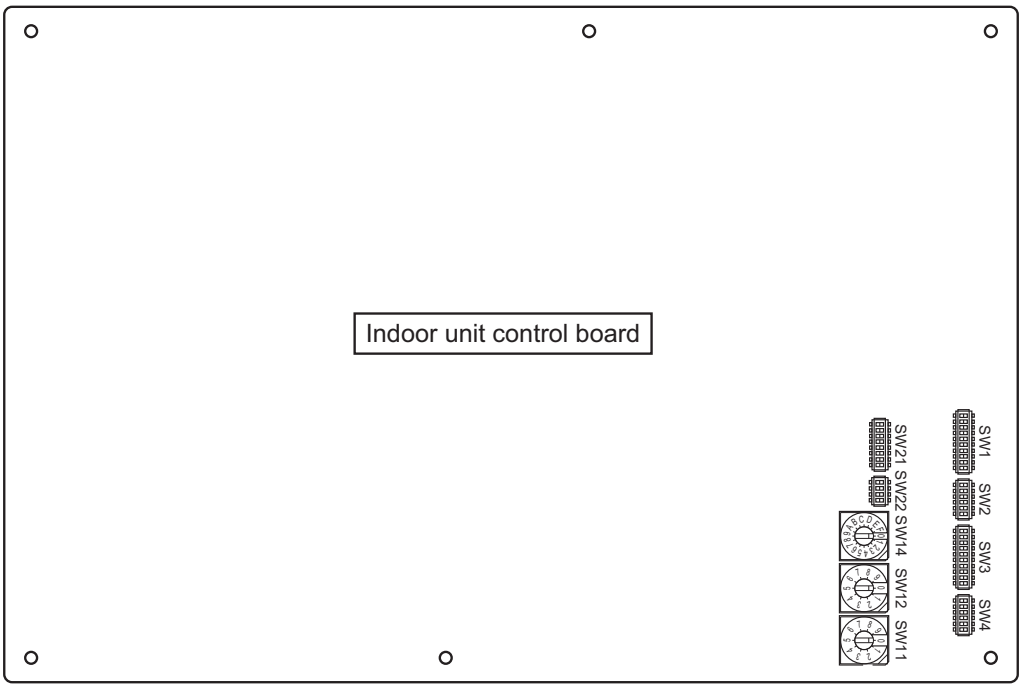
1. CAUTION
   - A high voltage is applied to the connector for connection to the fan motor (CNMF1).
   - Do not unplug the connector CNMF1 with the unit energized to avoid damage to the indoor control board and fan motor.
   - Electric shock hazard. Do not touch the motor when energized.

2. Troubleshooting
   - Symptom: Indoor unit fan does not run.



3. Setting of address switch

Make sure that power source is turning off.



1) Incase using network remote controller, address is set by rotary switches. (SW11,SW12)

∗It is not necessary setting address in case of using unit remote controller.

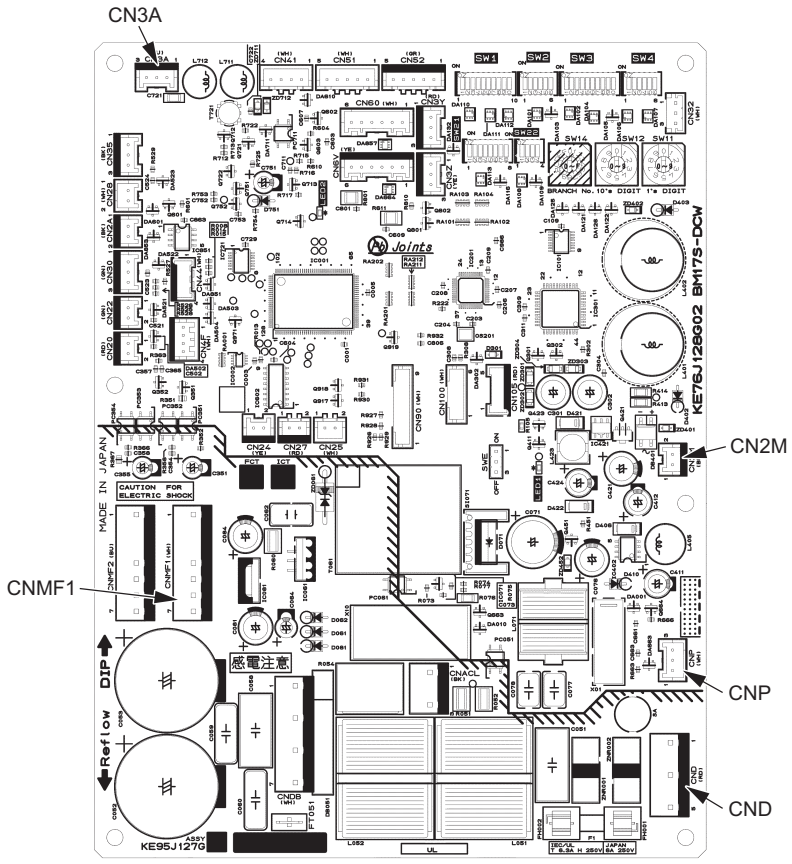
Indoor unit do not run without address setting in field.

2) Indoor unit address setting rule is different by each field work.
Refer to install manual of outdoor unit, operate the address setting.

3) Setting the address is combination of SW11 (1st digit address setting) and SW12 (2nd digit address setting).

Address " 3 " setting is composed SW11 " 3 " and SW12 " 0 ".
Address " 25 " setting is composed SW11 " 5 " and SW12 " 2 ".

4. Voltage test points on the control board



CND Power supply voltage (208 - 230VAC)

CN2M For M-NET transmission cable connection (24 - 30VDC)

CN3A For MA remote controller cable connection
(10 - 13 VDC (Between 1 and 3.))

CNP Drain-up mechanism output (13VDC)

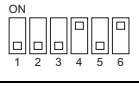
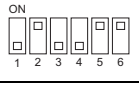
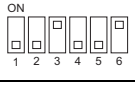
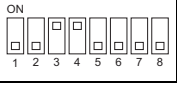
CNMF1 Fan motor output
1 - 4: 294 - 340 VDC
5 - 4: 15 VDC
6 - 4: 0 - 6.5 VDC
7 - 4: Stop 0 or 15 VDC
Run 7.5 VDC
(0 - 15 pulse)

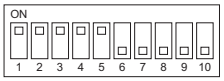
V_{FG} Voltage on 3 of PC352 and the (-) side of C351
(Same with the voltage between 7 (+) and 4 (-) of CNMF)

V_{CC} Voltage between the C084 pins 15 VDC
(Same with the voltage between 5 (+) and 4 (-) of CNMF)

Vsp Voltage between the C351 pins 0VDC (with the fan stopped)
1 - 6.5VDC (with the fan in operation)
(Same with the voltage between 6 (+) and 4 (-) of CNMF)

5. Setting of Dip-switch (at delivery)

Models	SW1	SW2	SW3	SW4	SW21	SW22	SWE
PEFY-P36NMHU-E-OA							
PEFY-P48NMHU-E-OA							
PEFY-P72NMHU-E-OA							
PEFY-P96NMHU-E-OA							



The figure at left shows that the switches 1 through 5 are set to ON and 6 through 10 are set to OFF.

6. Function setting

(1) SW1

Switch position	Function	Switch setting	
		ON	OFF
1	Active Thermistor	-	Indoor unit
2	Filter clogging detection	Available	Unavailable
3	Filter life	2500 hr	100 hr
4	-	-	-
5	Remote display	Thermo-ON signal	Fan output
6	-	-	-
7	-	-	-
8	-	-	-
9	Auto restart after power failure	Enabled	Disabled
10	Power start/stop	Enabled	Disabled

(2) SW3

Switch position	Function	Switch setting	
		ON	OFF
1	Unit type	Cooling only	Heat pump
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	Thermo-OFF temperature for cooling	63°F (17.2°C)	57.2°F (14°C)

7. Selecting external static pressure

This indoor unit supports three external static pressure settings.

Notes:

- When the static pressure setting were set from the remote controller, the actual setting and the switch setting on the control board may not match because the latest setting from the remote controller overrides the previous setting. To check the latest static pressure setting, check them on the remote controller, not on the switch.
- If the static pressure setting for the duct is lower than that for the unit, the fan of the unit may repeat start/stop, and the outdoor unit may remain in a stopped state. Match the static pressure settings for the unit to that for the duct.

To set the static pressure setting with the switches on the control board

External static pressure	SW21-1	SW21-2
0.6 in.WG (150 Pa)	OFF	ON
0.8 in.WG (200 Pa)	OFF	OFF
1.0 in.WG (250 Pa)	ON	OFF

Set the switches on the control board (SW21-1, and SW21-2) as shown in the table at left.

To set the static pressure setting from the function selection screen on the remote controller (Some remote controllers do not support the function selection function. Refer to the Instruction Book of a given remote controller.)

Follow the instructions below and the instructions detailed in the remote controller manual for how to set the switches.

1. Set the function setting No. 32 (Switch setting/Function selection) to “2”.
2. Set the function setting No. 8 to appropriate values, according to the airflow mode and the static pressure setting.

Selection	Function setting No.	Initial Setting	Current setting
	No. 32		
Switch setting	1	○	
Function selection	2		

External static pressure setting	Function setting No.	Initial setting	Current setting
	No. 8		
0.6 in.WG (150 Pa)	1		
0.8 in.WG (200 Pa)	2	○	
1.0 in.WG (250 Pa)	3		

[Important]
Be sure to write down the settings for all functions in the “Current setting” row if any of the initial settings has been changed.

8. Enabling the function to prevent cold draft (during heating operation)

This indoor unit features a function that automatically changes the fan speed to Very Low when the outside temperature reaches at or below the preset temperature to reduce the undesired effect of cold outside air to the supply air. This function can be enabled or disabled and the trigger threshold temperature can also be selected by setting the function No. 117 to the desired setting. Refer to the table below for details.

Function setting No.	Setting	Initial setting	Current setting
No. 117			
1	Disabled		
2	Triggered at outside temperature of 23°F (-5°C) or below		
3	Triggered at outside temperature of 21.2°F (-6°C) or below		
4	Triggered at outside temperature of 19.4°F (-7°C) or below		
5	Triggered at outside temperature of 17.6°F (-8°C) or below		
6	Triggered at outside temperature of 15.8°F (-9°C) or below		
7	Triggered at outside temperature of 14°F (-10°C) or below	○	
15	Initialize the setting		

[Important]
Be sure to write down the settings for all functions in the “Current setting” row if any of the initial settings has been changed.

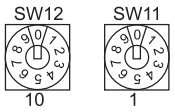
9. Setting addresses

(Be sure to operate with the main power turned OFF.)

- There are two types of rotary switch setting available: setting addresses 1 to 9 and over 10, and setting branch numbers.

1) How to set addresses
   Example: If Address is “3”, remain SW12 (for over 10) at “0”, and match SW11 (for 1 to 9) with “3”.

Factory setting



2) How to set branch numbers SW14 (Series R2 only)
   The branch number assigned to each indoor unit is the port number of the BC controller to which the indoor unit is connected.
   Leave it to “0” on the non-R2 series of units.

Factory setting



- The rotary switches are all set to “0” when shipped from the factory. These switches can be used to set unit addresses and branch numbers at will.
- The determination of indoor unit addresses varies with the system at site. Set them referring to the Data Book.

10. Function the LED of the indoor unit service board

Symbol	Silk display	LED operation under normal state
LED1	Main power source	At applying main power source (indoor unit 200V) → Lighting
LED2	Transmission power source	At receiving M-NET transmission power source → Lighting

[1] Disassembly Procedure (PEFY-P36, 48NMHU-E-OA)

1. Control box

Be careful on removing heavy parts.

1. Removing the control box cover

(1) Remove the fixing screws (two) of the control box (A), and remove the cover. (Fig.1)

*At this stage, the following servicing is possible. (Fig.2)

1) Operation and check of the switches (listed below) which are on the control board.
- Dip switch SW1 . . . . . Function change
- Dip switch SW2 . . . . . Capacity code setting
- Dip switch SW3 . . . . . Function change
- Dip switch SW4 . . . . . Model code setting
- Dip switch SW21 . . . . . Static pressure setting
- Dip switch SW22 . . . . . Function setting
- Rotary switches SW11, 12 . . . . Address setting
- Rotary switch SW14 . . . . . Branch port setting

2) Connection check of the lead wires (listed below) which are connected to the controller board.
- Power supply lead wire.
- Transmission lead wire x 2
- Fan motor lead wire.
- LEV lead wire
- Inlet air temperature thermistor lead wire
- Outlet air temperature thermistor
- Liquid piping temperature thermistor lead wire
- Gas piping temperature thermistor lead wire
- Drain pump lead wire
- Float switch lead wire

3) Control board exchange
4) Reactor exchange
5) Thermistor (inlet air, outlet air, liquid piping, gas piping) exchange
6) Power supply terminal bed exchange
7) Transmission terminal bed exchange x 2

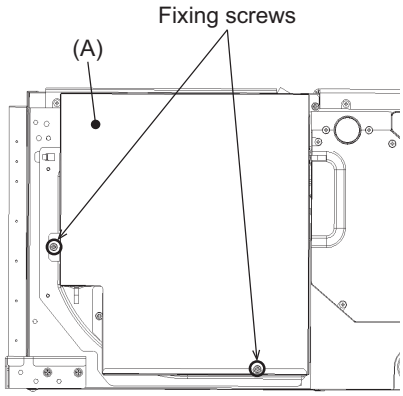
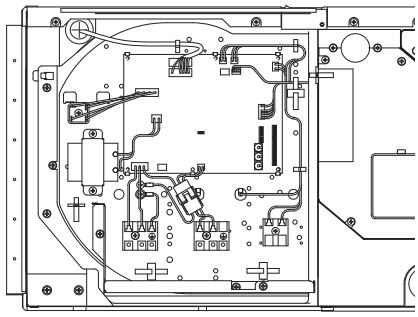


Fig.1


Fig.2

2. Fan and fan motor

Be careful on removing heavy parts.
Electric shock hazard. Before performing any work, shut off the power supply.

1. Remove the control box cover according to the procedure in section **[1]-1.** CONTROL BOX.

2. Removing the fan motor cable
(1) Disconnect the connector (CNMF1) from the control board.
(2) Remove the cable through the rubber bush.

3. Removing the bottom plate (Fig.1)
(1) Remove the fifteen fixing screws on the bottom plate to remove it.

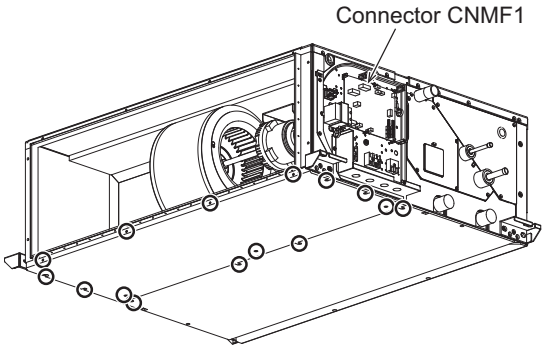


Fig.1

4. Removing the fan case (Fig.2)
(1) Remove the four fixing screws on the fan case to remove it.

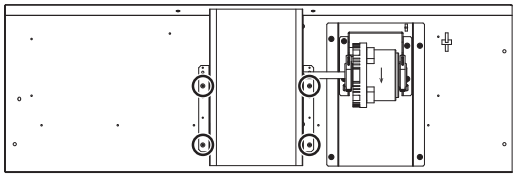


Fig.2

5. Removing the fan and fan motor (Fig.3)
(1) Remove the two fixing screws and attachment on the fan motor.
(2) Pull out the fan motor in the direction of the arrow.

Exercise caution when removing heavy parts.

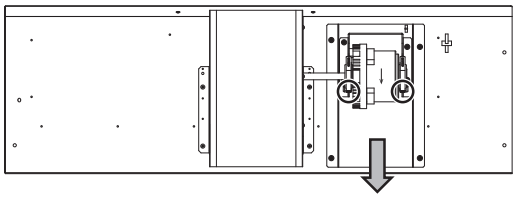


Fig.3

6. Precautions for reinstalling the removed motor in its original position
(1) As shown in Fig. 4, reinstall the motor cable in its original position and reset it on the control board.
(2) Fix the motor in place so that the heat radiating fins on the motor and the stopper of the motor leg are positioned as shown in Fig. 5.

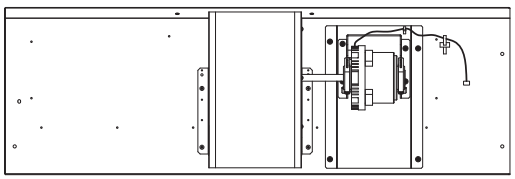


Fig.4

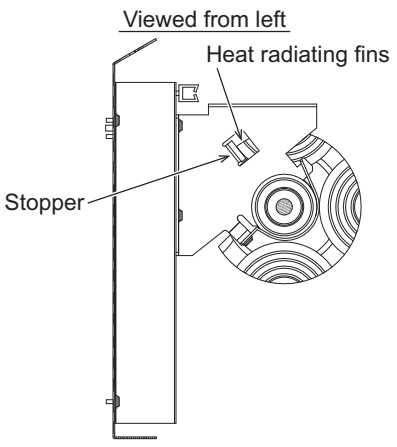


Fig.5

3. LEV, thermistor (Liquid/Gas piping temperature detection)

Be careful on removing heavy parts.

1. Removing the LEV.
(1) Remove the control box cover with procedure **[1]-1**.
(2) Remove the fixing screws (five) of the heat exchanger cover (A), and remove the cover (A). (Fig.1)
(3) Remove the LEV driving motor. (Fig.2)

2. Removing the liquid pipe and gas pipe thermistor.
(1) Remove the thermistors from the thermistor holders which are installed on the piping. (Fig.3)

3. Removing the outlet air temperature thermistor.
(1) Remove control box cover with procedure **[1]-1**.
(2) Remove the fixing screws (five) of the heat exchanger cover (A), and remove the cover (A). (Fig.1)
(3) Remove the fixing screws (four) of maintenance cover (B), and remove the cover (B). (Fig.1)
(4) Remove the cable bush from the panel, and pull the outlet air temperature thermistor through the hole. (Fig.4)

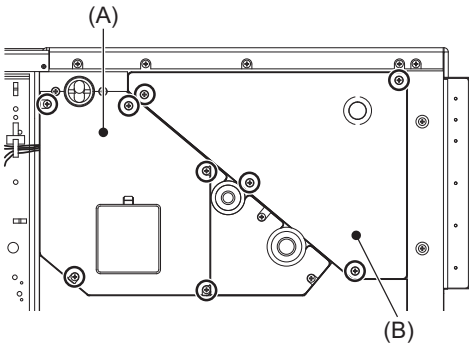


Fig.1

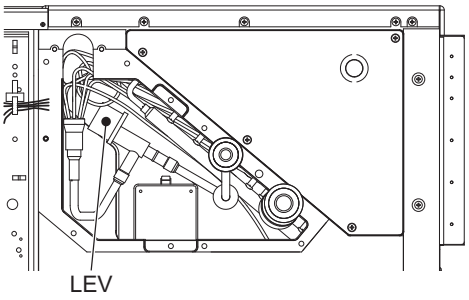


Fig.2

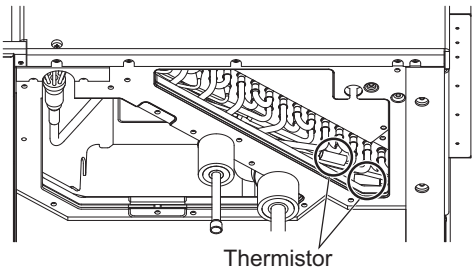


Fig.3

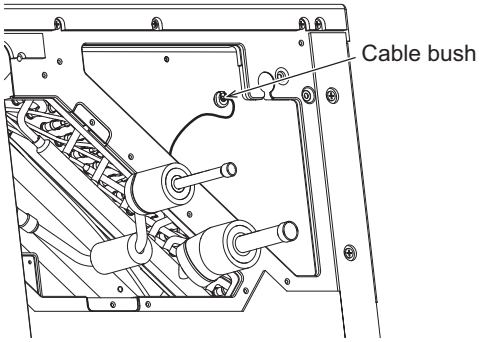


Fig.4

4. Drain Pump

1. Remove the fixing screws shown in Fig. 1, and remove the control box cover.

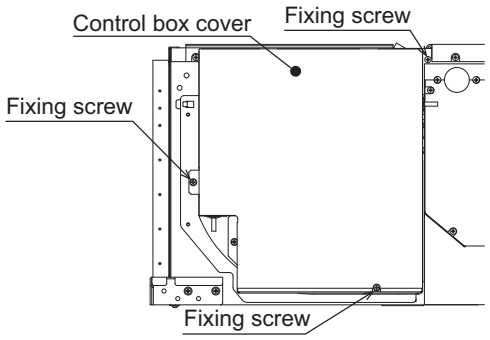


Fig.1

2. Remove the connector from CN4F and CNP on the control board, shown in Fig. 2.

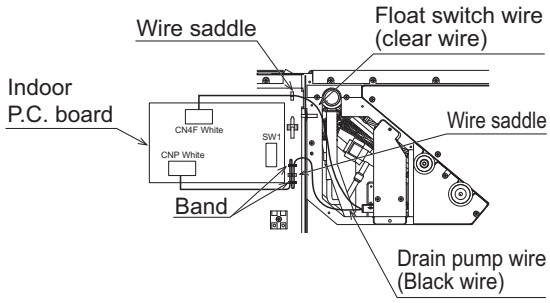


Fig.2

3. Remove the fixing screws shown in Fig. 3, and remove the maintenance cover.

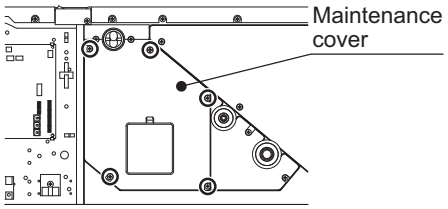


Fig.3

4. Remove the fixing screws holding the drain hose and the drain pump assy shown in Fig. 4.

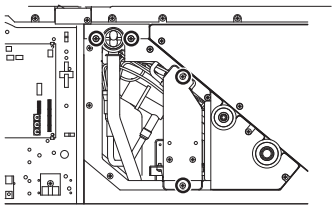


Fig.4

5. Remove the fixing screws and cut the band shown in Fig. 5, by doing so, the drain pump and the float switch can be disassembled.

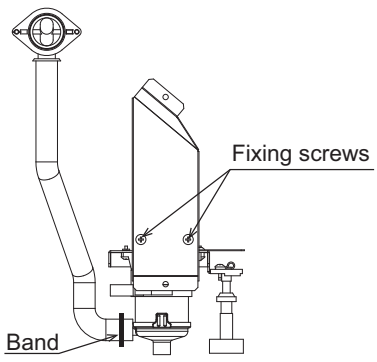


Fig.5

5. Heat exchanger

Be careful on removing heavy parts.

1. Removing the heat exchanger.

(1) Remove the heat exchanger cover (A) with procedure **[1]-3**-1.

(2) Remove the bottom plate which is air outlet side. (fixing screws: twelve) (Fig.1)

(3) Remove the drainpan. (Fig.2)

(4) Remove the cover (A), (B). (fixing screws: two x 2) (Fig.3)

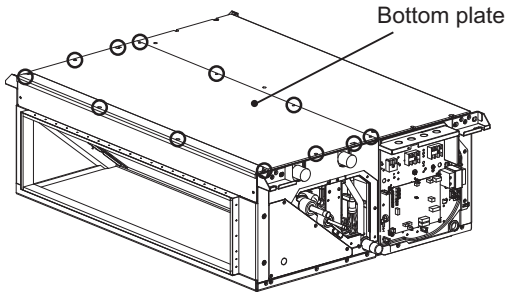


Fig.1

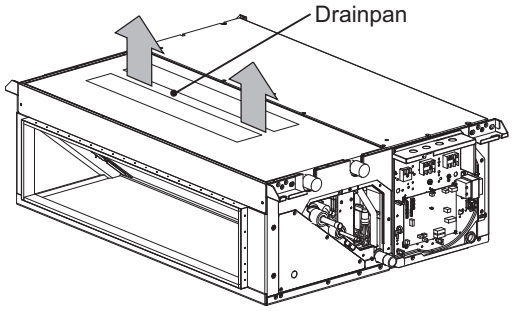


Fig.2

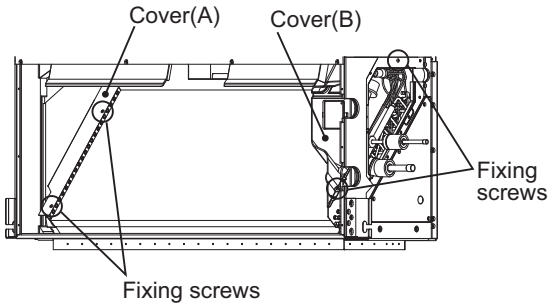


Fig.3

(5) Remove the maintenance cover. (fixing screws: four) (Fig.4)

(6) Remove the heat exchanger. (fixing screws: two) (Fig.5,6)

*Removerd heat exchanger is as shown Fig.7

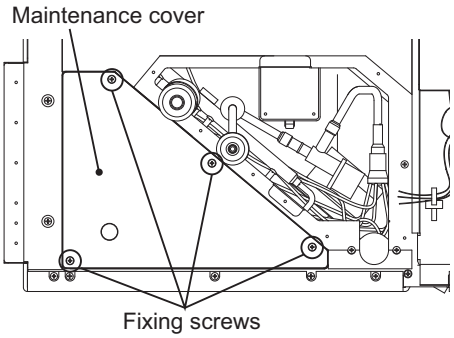


Fig.4

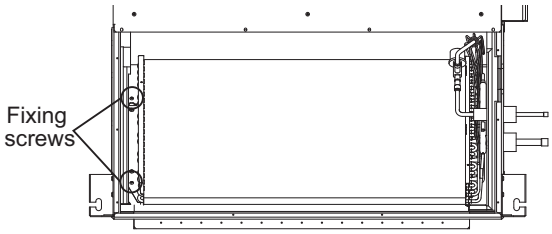


Fig.5

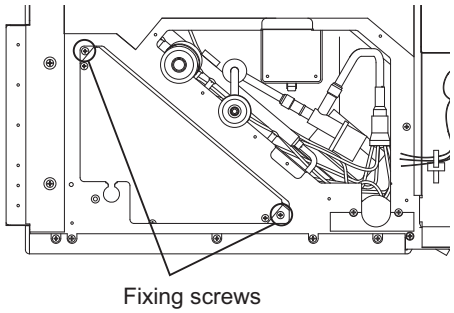


Fig.6

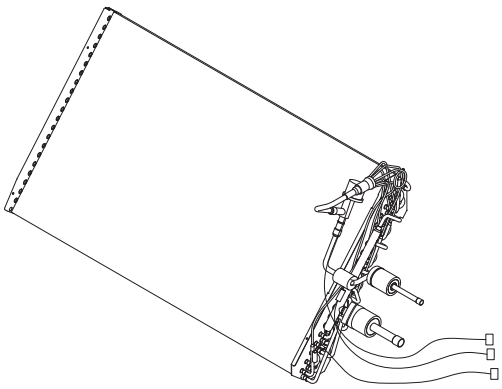
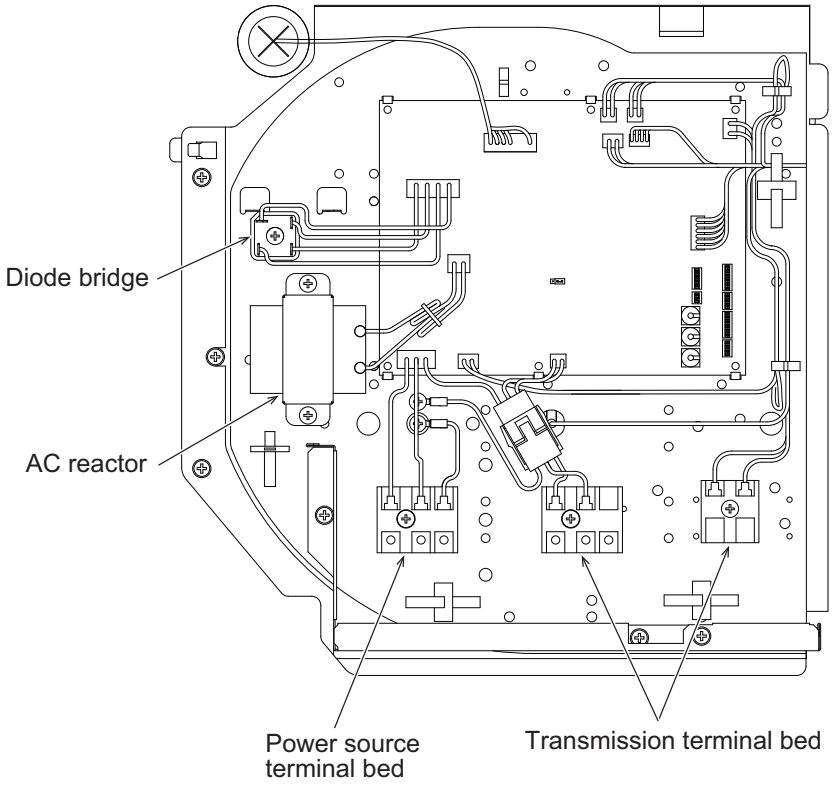


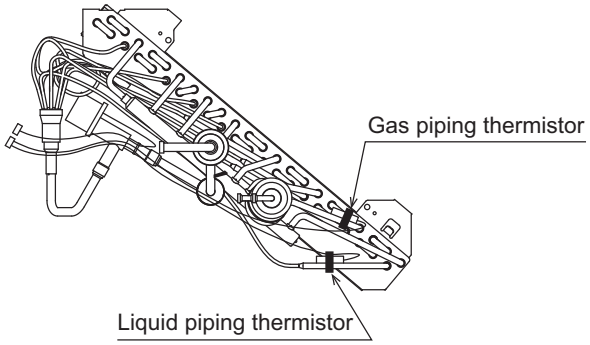
Fig.7

6. Control box inside layout



7. Thermistor position

PEFY-P36, 48NMHU-E-OA



[2] Disassembly Procedure (PEFY-P72, 96NMHU-E-OA)

1. Control box

Be careful on removing heavy parts.

1. Removing the control box cover

(1) Remove the fixing screws (two) of the control box (A), and remove the cover. (Fig.1)

*At this stage, the following servicing is possible. (Fig.2)

1) Operation and check of the switches (listed below) which are on the control board.
- Dip switch SW1 . . . . . Function change
- Dip switch SW2 . . . . . Capacity code setting
- Dip switch SW3 . . . . . Function change
- Dip switch SW4 . . . . . Model code setting
- Dip switch SW21 . . . . . Static pressure setting
- Dip switch SW22 . . . . . Function setting
- Rotary switches SW11, 12 . . . . Address setting
- Rotary switch SW14 . . . . . Branch port setting

2) Connection check of the lead wires (listed below) which are connected to the controller board.
- Power supply lead wire.
- Transmission lead wire x 2
- Fan motor lead wire.
- LEV lead wire
- Inlet air temperature thermistor lead wire
- Outlet air temperature thermistor
- Liquid piping temperature thermistor lead wire
- Gas piping temperature thermistor lead wire
- Drain pump lead wire
- Float switch lead wire

3) Control board exchange
4) Reactor exchange
5) Thermistor (inlet air, outlet air, liquid piping, gas piping) exchange
6) Power supply terminal bed exchange
7) Tranersmission tminal bed exchange x 2

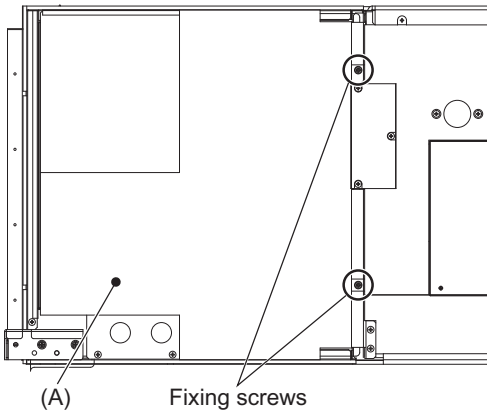


Fig.1

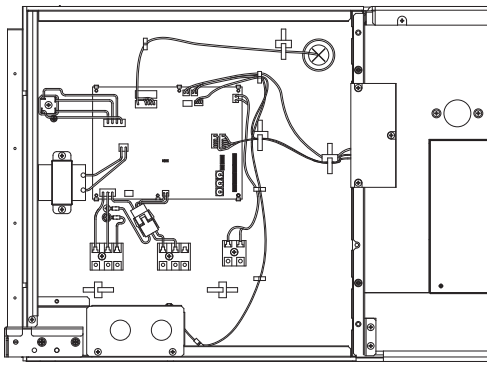


Fig.2

2. Fan and fan motor

Be careful on removing heavy parts.
Electric shock hazard. Before performing any work, shut off the power supply.

1. Remove the control box cover according to the procedure in section **[2]-1**. CONTROL BOX.

2. Removing the fan motor cable
(1) Disconnect the connector (CNMF1) from the control board.
(2) Remove the cable through the rubber bush.

3. Removing the bottom plate
(1) Remove the thirteen fixing screws on the bottom plate to remove it.

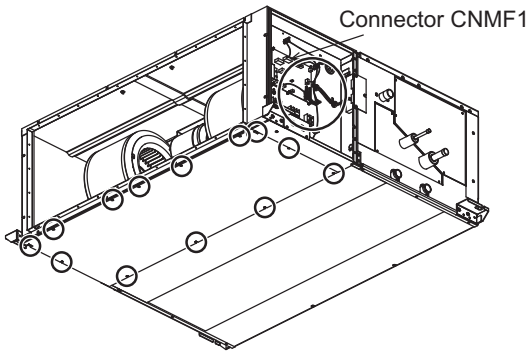


Fig.1

4. Removing the fan case
(1) Remove the eight fixing screws on the fan case to remove it.

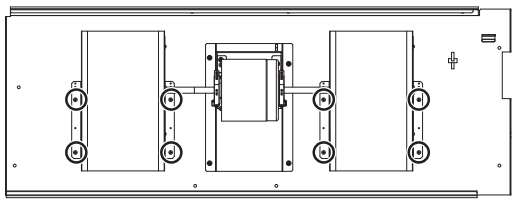


Fig.2

5. Removing the fan and fan motor
(1) Remove the two fixing screws and attachment on the fan motor.
(2) Pull out the fan motor in the direction of the arrow.

Exercise caution when removing heavy parts.

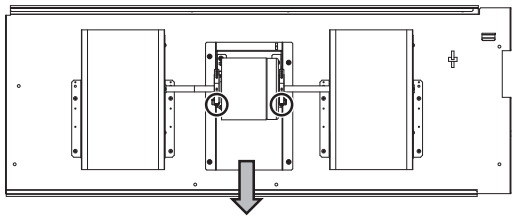


Fig.3

6. Precautions for reinstalling the removed motor in its original position
(1) As shown in Fig. 4, reinstall the motor cable in its original position and reset it on the control board.
(2) Fix the motor in place so that the heat radiating fins on the motor and the stopper of the motor leg are positioned as shown in Fig. 5.

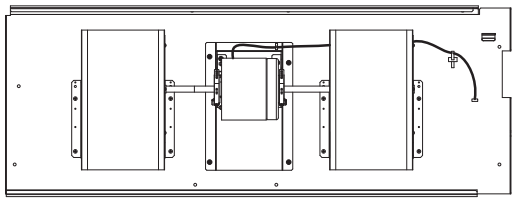


Fig.4

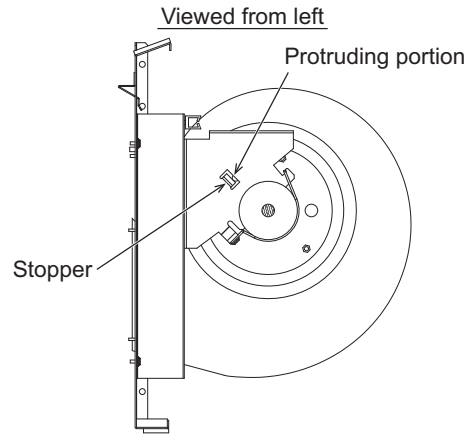


Fig.5

3. LEV, thermistor (Liquid/Gas piping temperature detection)

Be careful on removing heavy parts.

1. Removing the LEV.
(1) Remove the control box cover with procedure **[2]-1**.
(2) Remove the fixing screws (three) of the heat exchanger cover (A), and remove the cover (A). (Fig.1)
(3) Remove the LEV driving motor. (Fig.2)

2. Removing the liquid pipe and gas pipe thermistor.
(1) Remove the thermistors from the thermistor holders which are installed on the piping. (Fig.3)

3. Removing the outlet air temperature thermistor.
(1) Remove control box cover with procedure **[2]-1**.
(2) Remove the fixing screws (three) of the heat exchanger cover (A), and remove the cover (A). (Fig.1)
(3) Remove the fixing screws (four) of maintenance cover (B), and remove the cover (B). (Fig.1)
(4) Remove the cable bush from the panel, and pull the outlet air temperature thermistor through the hole. (Fig.4)

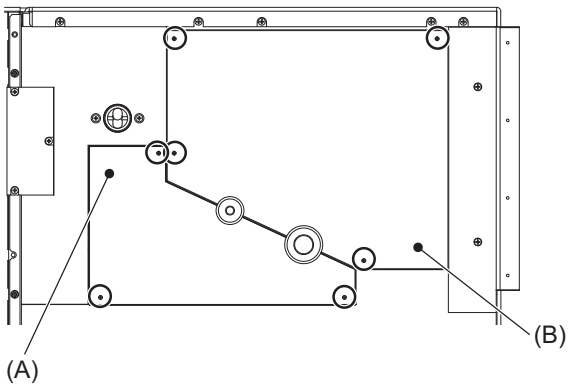


Fig.1

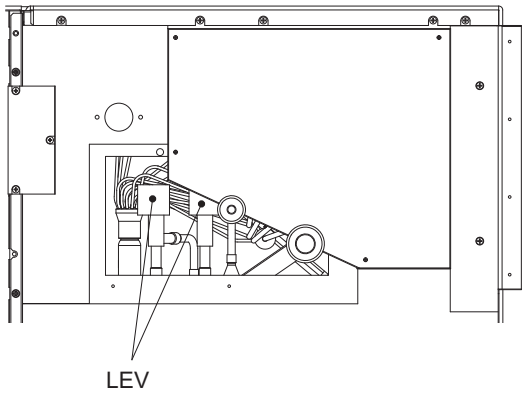


Fig.2

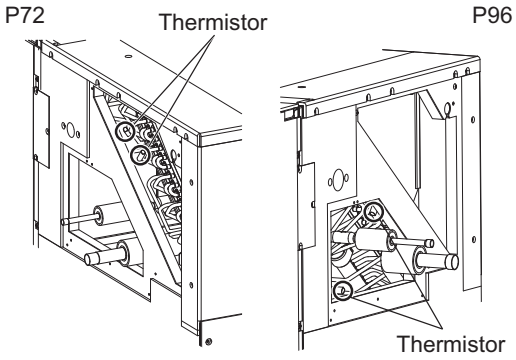


Fig.3

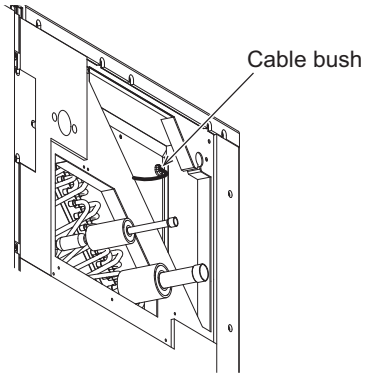


Fig.4

4. Drain Pump

1. Remove the fixing screws shown in Fig. 1, and remove the control box cover.

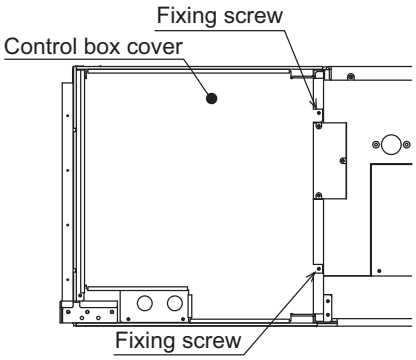


Fig.1

2. Remove the connector into CN4F and CNP on the control board shown in Fig. 2.

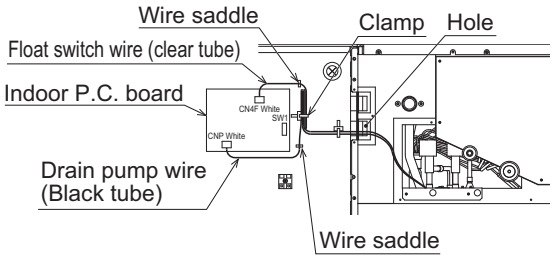


Fig.2

3. Remove the fixing screws shown in Fig. 3, and remove the wire cover.

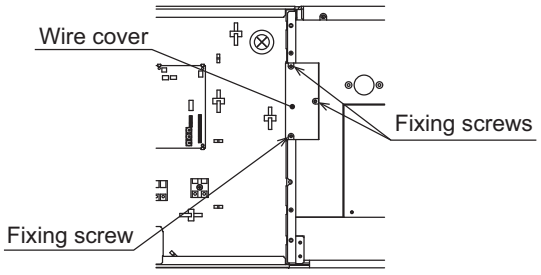


Fig.3

4. Remove the fixing screws shown in Fig. 4, and remove the maintenance cover.

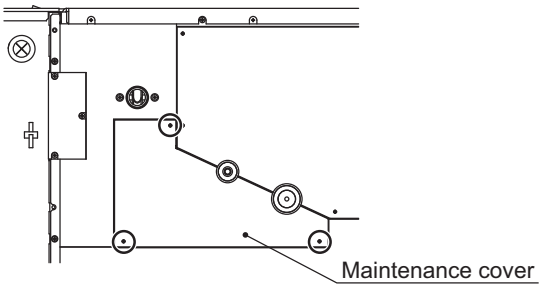


Fig.4

5. Remove the fixing screws holding the drain hose and the drain pump assy shown in Fig. 5.

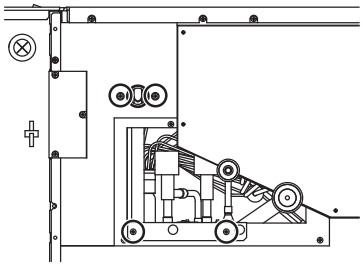


Fig.5

6. Remove the fixing screws and cut the band shown in Fig. 6, by doing so, the drain pump and the float switch can be disassembled.

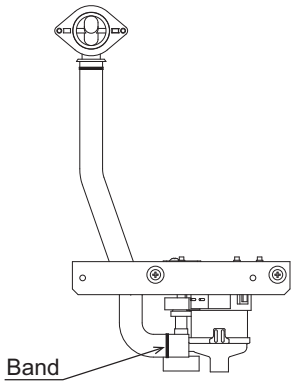


Fig.6

5. Heat exchanger

Be careful on removing heavy parts.

1. Removing the heat exchanger.

(1) Remove the heat exchanger cover (A) with procedure **[2]-3-**1.

(2) Remove the bottom plate which is air outlet side. (fixing screws: twelve) (Fig.1)

(3) Remove the drainpan. (Fig.2)

(4) Remove the two fixing screws. (Fig.3)

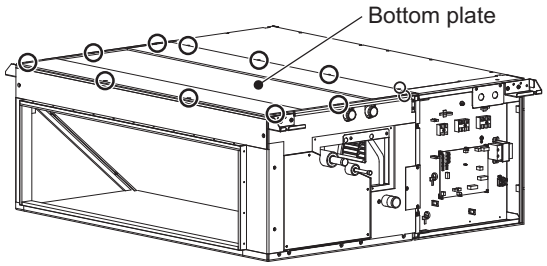


Fig.1

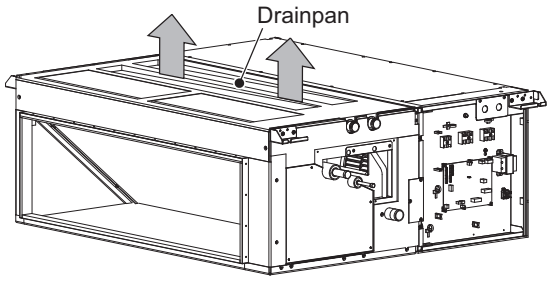


Fig.2

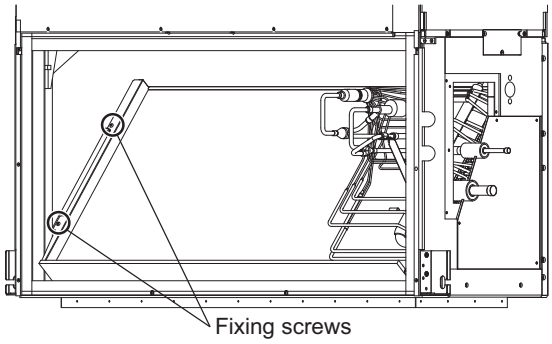


Fig.3

(5) Remove the maintenance cover. (fixing screws: four) (Fig.4)

(6) Remove the heat exchanger. (fixing screws: two) (Fig.5)

*Removerd heat exchanger is as shown Fig.6

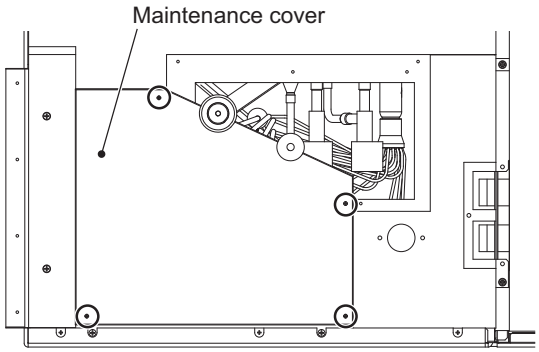


Fig.4

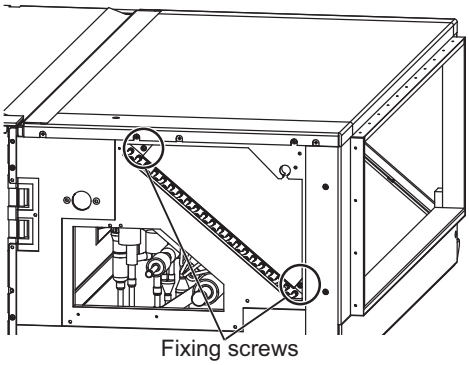


Fig.5

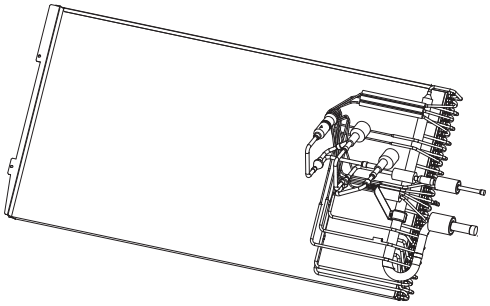
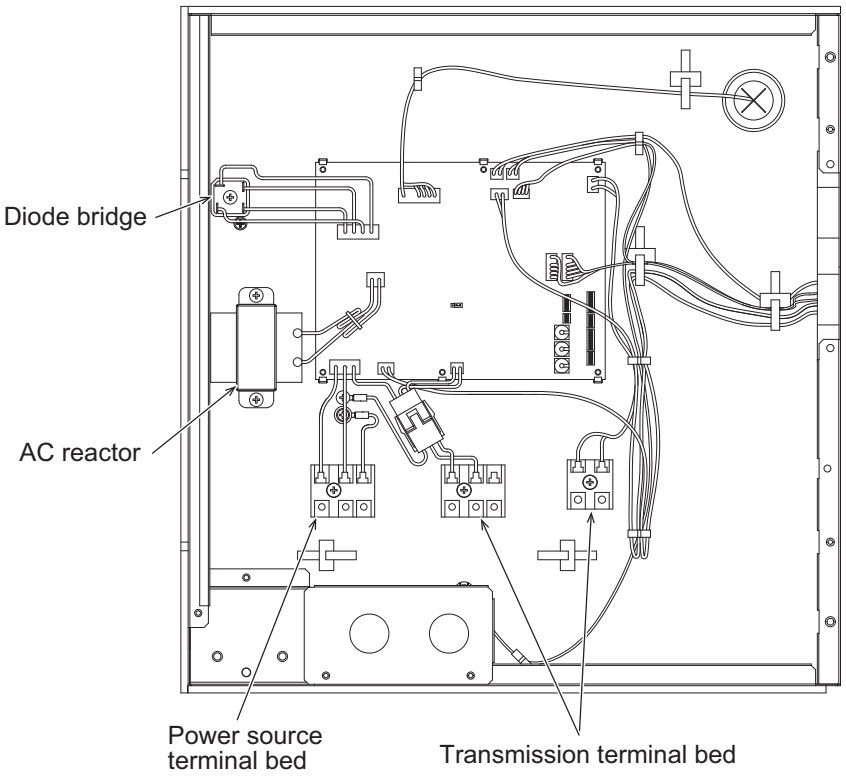


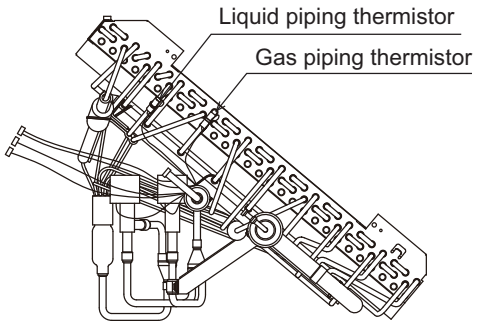
Fig.6

6. Control box inside layout

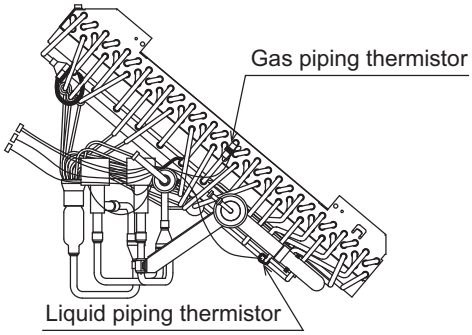


7. Thermistor position

PEFY-P72NMHU-E-OA



PEFY-P96NMHU-E-OA



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