MITSUBISHI ELECTRIC

Changes for the Better

AIR CONDITIONERS CITY MULTI

2002

TECHNICAL & SERVICE MANUAL

Series PDFY Ceiling Concealed Built-in

<Indoor unit>

Models **PDFY-10NMU-A,PDFY-16NMU-A**
PDFY-24NMU-A,PDFY-32NMU-A
PDFY-40NMU-A,PDFY-48NMU-A

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CITY MULTI

For use with the R22

SAFETY PRECAUTIONS

1. Before installation and electric work

- **Before installing the unit, make sure you read all the "Safety precautions".**
- **The "Safety precautions" provide very important points regarding safety. Make sure you follow them.**
- **This equipment may not be applicable to EN61000-3-2: 1995 and EN61000-3-3: 1995.**
- **This equipment may have an adverse effect equipment on the same electrical supply system.**
- **Please report to or take consent by the supply authority before connection to the system.**

Symbols used in the text

⚠Warning:
Describes precautions that should be observed to prevent danger of injury or death to the user.

⚠Caution:
Describes precautions that should be observed to prevent damage to the unit.

Symbols used in the illustrations

: Indicates an action that must be avoided.

: Indicates that important instructions must be followed.

: Indicates a part which must be grounded.

: Indicates that caution should be taken with rotating parts. (This symbol is displayed on the main unit label.) <Color: Yellow>

: Beware of electric shock (This symbol is displayed on the main unit label.) <Color: Yellow>

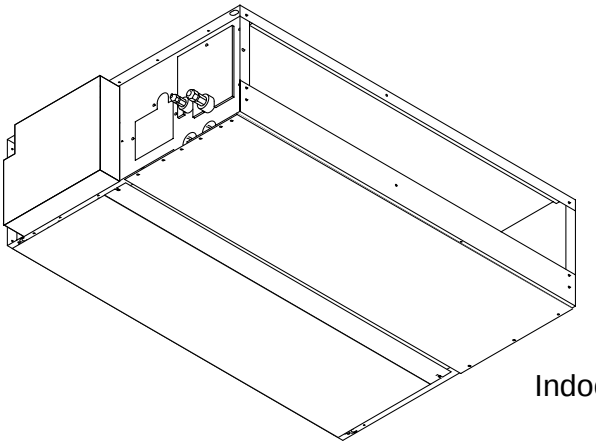
⚠Warning:
Carefully read the labels affixed to the main unit.

⚠Warning:

- **Ask the dealer or an authorized technician to install the air conditioner.**
  - Improper installation by the user may result in water leakage, electric shock, or fire.
- **Install the air unit at a place that can withstand its weight.**
  - Inadequate strength may cause the unit to fall down, resulting in injuries.
- **Use the specified cables for wiring. Make the connections securely so that the outside force of the cable is not applied to the terminals.**
  - Inadequate connection and fastening may generate heat and cause a fire.
- **Prepare for typhoons and other strong winds and earthquakes and install the unit at the specified place.**
  - Improper installation may cause the unit to topple and result in injury.
- **Always use an air cleaner, humidifier, electric heater, and other accessories specified by Mitsubishi Electric.**
  - Ask an authorized technician to install the accessories. Improper installation by the user may result in water leakage, electric shock, or fire.
- **Never repair the unit. If the air conditioner must be repaired, consult the dealer.**
  - If the unit is repaired improperly, water leakage, electric shock, or fire may result.
- **Do not touch the heat exchanger fins.**
  - Improper handling may result in injury.
- **When handling this product, always wear protective equipment. EG : Gloves, full arm protection namely boiler suit, and safety glasses.**
  - Improper handling may result in injury.
- **If refrigerant gas leaks during installation work, ventilate the room.**
  - If the refrigerant gas comes into contact with a flame, poisonous gases will be released.
- **Install the air conditioner according to this Installation Manual.**
  - If the unit is installed improperly, water leakage, electric shock, or fire may result.
- **Have all electric work done by a licensed electrician according to "Electric Facility Engineering Standard" and "Interior Wire Regulations"and the instructions given in this manual and always use a special circuit.**
  - If the power source capacity is inadequate or electric work is performed improperly, electric shock and fire may result.
- **Securely install the cover of control box and the panel.**
  - If the cover and panel are not installed properly, dust or water may enter the outdoor unit and fire or electric shock may result.
- **When installing and moving the air conditioner to another site, do not charge the it with a refrigerant different from the refrigerant (R22) specified on the unit.**
  - If a different refrigerant or air is mixed with the original refrigerant, the refrigerant cycle may malfunction and the unit may be damaged.
- **If the air conditioner is installed in a small room, measures must be taken to prevent the refrigerant concentration from exceeding the safety limit even if the refrigerant should leak.**
  - Consult the dealer regarding the appropriate measures to prevent the safety limit from being exceeded. Should the refrigerant leak and cause the safety limit to be exceeded, hazards due to lack of oxygen in the room could result.
- **When moving and reinstalling the air conditioner, consult the dealer or an authorized technician.**
  - If the air conditioner is installed improperly, water leakage, electric shock, or fire may result.
- **After completing installation work, make sure that refrigerant gas is not leaking.**
  - If the refrigerant gas leaks and is exposed to a fan heater, stove, oven, or other heat source, it may generate noxious gases.
- **Do not reconstruct or change the settings of the protection devices.**
  - If the pressure switch, thermal switch, or other protection device is shorted and operated forcibly, or parts other than those specified by Mitsubishi Electric are used, fire or explosion may result.

1 FEATURES

Series PDFY Ceiling Concealed Built-in

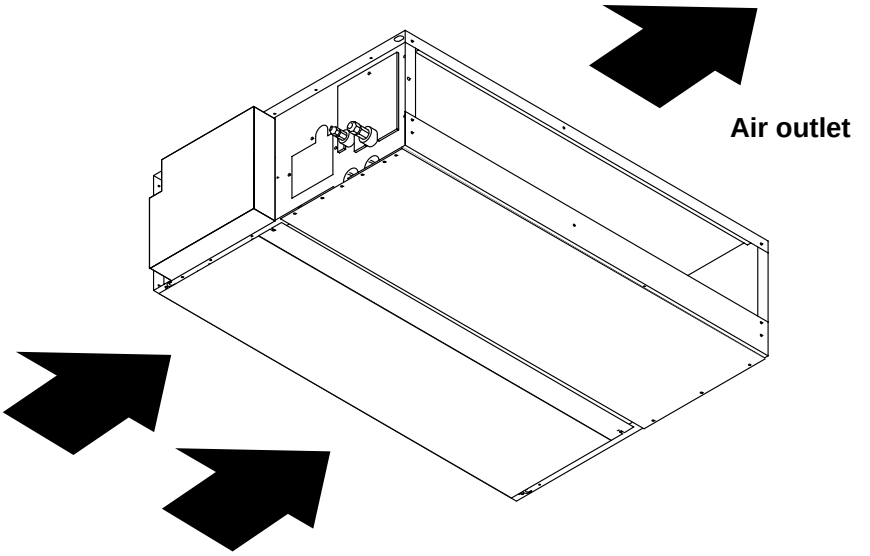


Indoor unit

Models	Cooling capacity/Heating capacity	
	kW	Btu / h
PDFY-10NMU-A	2.8 / 3.2	9500 / 10800
PDFY-16NMU-A	4.6 / 5.5	15700 / 18700
PDFY-24NMU-A	6.9 / 7.4	23600 / 25400
PDFY-32NMU-A	9.1 / 10	31000 / 34000
PDFY-40NMU-A	11.9 / 13.2	40500 / 45000
PDFY-48NMU-A	13.6 / 15.0	46500 / 51000

2 PART NAMES AND FUNCTIONS

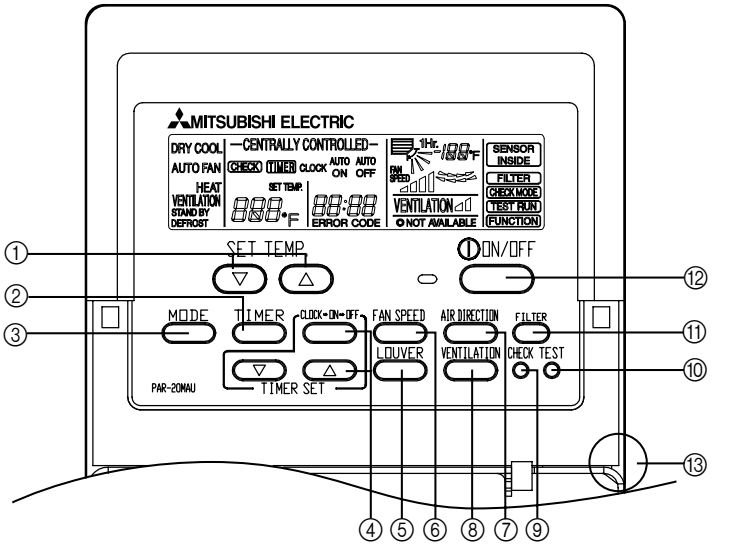
● **Indoor (Main) Unit**



● **Remote controller** **[PAR-20MAA]**

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

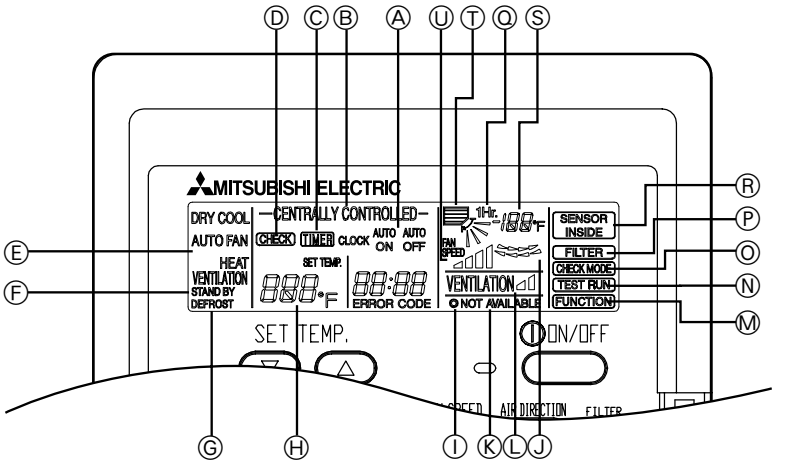
● **Operation buttons**



① [Room temperature adjustment] Button
② [Timer/continuous] Button
③ [Selecting operation] Button
④ [Time selection] Button
[Time-setting] Button
⑤ [Louver] Button
⑥ [Fan speed adjustment] Button
⑦ [Up/down airflow direction] Button
⑧ [Ventilation] Button
⑨ [Checking/built-in] Button
⑩ [Test run] Button
⑪ [Filter] Button
⑫ [ON/OFF] Button
⑬ Position of built-in room temperature

• Never expose the remote controller to direct sunlight. Doing so can result in the erroneous measurement of room temperature.
• Never place any obstacle around the lower right-hand section of the remote controller. Doing so can result in the erroneous measurement of room temperature.

● Display



(A) Current time/Timer
(B) Centralized control
(C) Timer ON
(D) Abnormality occurs
(E) Operation mode: COOL, DRY, AUTO, FAN, HEAT
(F) Preparing for Heating mode
(G) Defrost mode
(H) Set temperature
(I) Power ON
(J) Louver
(K) Not available function
(L) Ventilation
(M) Function setting mode
(N) Test run mode
(O) Error check mode
(P) Filter sign
(Q) Set effective for 1 hr.
(R) Sensor position
(S) Room temperature
(T) Airflow
(U) Fan speed

3 SPECIFICATION

3-1. Specification

			PDFY-10NMU-A	PDFY-16NMU-A	PDFY-24NMU-A
Power sourse	Voltage	~V	~ 208-230V		
	Frequency	Hz	60Hz		
Capacity *1	Cooling	kW	2.8	4.6	6.9
		BTU	9500	15700	23600
	Heating	kW	3.2	5.5	7.4
		BTU	10800	18700	25400
Power input	Cooling	kW	0.12	0.15	0.17
	Heating	kW	0.12	0.15	0.17
Current (208-230V)	Cooling	A	0.61-0.68	0.77-0.85	0.87-0.96
	Heating	A	0.61-0.68	0.77-0.85	0.87-0.96
Extwenal finish(Munsel No.)			Galvanizing		
Dimensions	Height	mm (in)	295(11-5/8)		
	Width	mm (in)	710(27-31/32)	960(37-13/16)	1160(45-11/16)
	Depth	mm (in)	735(28-15/16)		
Net weight		kg	25.5	32	39
		lb	57	71	86
Heat exchanger			Cross fin(Alminium plate fin and copper tube)		
FAN	Type		Sirocco fan X 1	Sirocco fan X 2	
	Airflow rate (Low-Middle2-Middle1-High)		6-6.5-7.5-8.5 [211-229-264-300]	10-11-12.5-14 [353-388-441-494]	12.5-14.0-16.0-18.0 [441-494-565-635]
	External static pressure *2 (208-230V) Pa [in.WG]	208V	30/50/80 [0.120/0.200/0.320]	30/50/80 [0.120/0.200/0.320]	30/50/80 [0.120/0.200/0.320]
		230V	40/60/100 [0.160/0.240/0.401]	40/60/100 [0.160/0.240/0.401]	40/60/100 [0.160/0.240/0.401]
Motor	Type		Single phase induction motor		
	Output	kW	0.075	0.085	0.095
Filter			Standard filter		
Refrigerant pipe dimension	Gas(Flare)	mm (in)	ø 12.7(1/2)		ø 15.88(5/8)
	Liquid(Flare)	mm (in)	ø 6.35(1/4)		ø 9.52(3/8)
Drain pipe dimension		mm (in)	32(1-1/4)		
Noise level (Low-Middle2-Mddle1-High) *3 (208-230V) dB(A)		208V	26-28-31-34	32-34-35-37	28-32-34-37
		230V	28-30-33-36	34-36-37-39	30-34-36-39

			PDFY-32NMU-A	PDFY-40NMU-A	PDFY-48NMU-A
Power sourse	Voltage	~V	~ 208-230V		
	Frequency	Hz	60Hz		
Capacity *1	Cooling	kW	9.1	11.9	13.6
		BTU	31000	40500	46500
	Heating	kW	10.0	13.2	15.0
		BTU	34000	45000	51000
Power input	Cooling	kW	0.21	0.29	0.39
	Heating	kW	0.21	0.29	0.39
Current (208-230V)	Cooling	A	1.07-1.19	1.48-1.64	1.99-2.21
	Heating	A	1.07-1.19	1.48-1.64	1.99-2.21
Extwenal finish(Munsel No.)			Galvanizing		
Dimensions	Height	mm (in)	295(11-5/8)	335(13-7/32)	
	Width	mm (in)	1160(45-11/16)	1510(59-15/32)	
	Depth	mm (in)	735(28-15/16)	775(30-17/32)	
Net weight		kg	39	52(2)	
		lb	86	115	
Heat exchanger			Cross fin(Alminium plate fin and copper tube)		
FAN	Type		Sirocco fan X 2		
	Airflow rate (Low-Middle2-Middle1-High)		14.0-16.5-18.5-21.0 [494-582-653-741]	19.5-28.0 [688-988]	24.0-34.0 [847-1200]
	External static pressure *2 (208-230V) Pa [in.WG]	208V	30-50-100 [0.120/0.200/0.401]	50-100-130 [0.200/0.401/0.521]	50-100-130 [0.200/0.401/0.521]
		230V	40-60-115 [0.160/0.240/0.461]	60-115-150 [0.240/0.461/0.601]	60-115-150 [0.240/0.461/0.601]
Motor	Type		Single phase induction motor		
	Output	kW	0.095	0.140	0.190
Filter			Standard filter		
Refrigerant pipe dimension	Gas(Flare)	mm (in)	ø 15.88(5/8)	ø 19.05(3/4)	
	Liquid(Flare)	mm (in)	ø 9.52(3/8)		
Drain pipe dimension		mm (in)	32(1-1/4)		
Noise level (Low-Middle2-Mddle1-High) *3 (208-230V) dB(A)		208V	32-35-38-40	36-42	40-45
		230V	34-37-40-42	37-44	42-46

Notes:*1 Cooling/Heating capacity indicates the maximum value at operation under the following condition.
Cooling : Indoor 26.7˚C[80˚F]DB/19.4˚C[67˚F]WB outdoor 35˚C[95˚F]DB
Heating : Indoor 21.1˚C[70˚F]DB outdoor 8.3˚C[47˚F]DB/6.1˚C[43˚F]WB

*2 As the factory setting is below.

PDFY-10NMU-A		PDFY-16NMU-A		PDFY-24NMU-A		PDFY-32NMU-A		PDFY-40NMU-A		PDFY-48NMU-A	
208V	230V	208V	230V	208V	230V	208V	230V	208V	230V	208V	230V
50Pa	60Pa	80Pa	100Pa	80Pa	100Pa	50Pa	60Pa	50Pa	60Pa	50Pa	60Pa

Operation temperature
Cooling mode:15˚C[59˚F]WB-24˚C[75˚F]WB
Heating mode:15˚C[59˚F]DB-27˚C[80˚F]DB

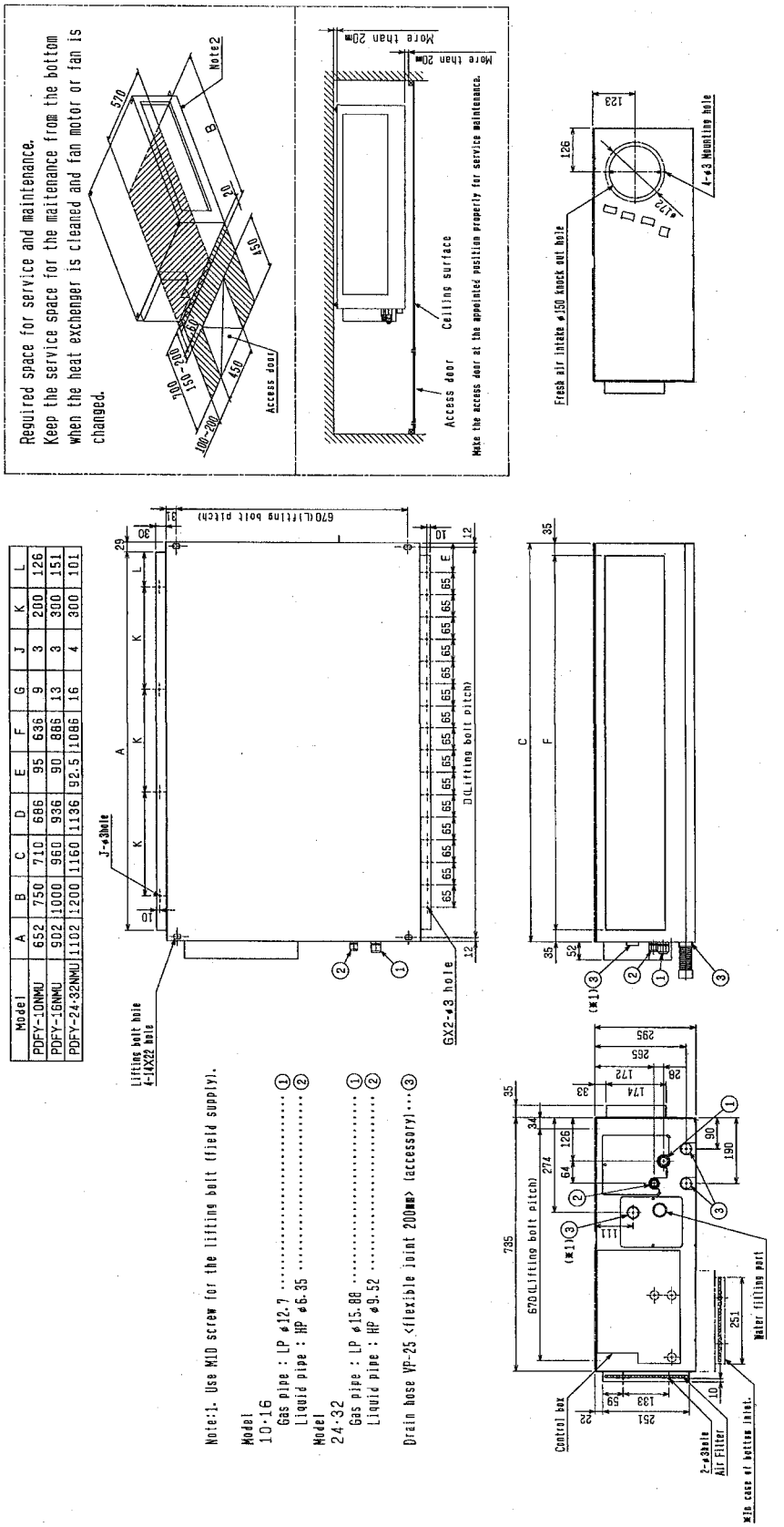
*3 The operation noise is the data that was obtained in an anechoic room.

3-2. Electrical parts specifications

Parts name \ Model	Symbol	PDFY-10NMU-A	PDFY-16NMU-A	PDFY-24NMU-A	PDFY-32NMU-A	PDFY-40NMU-A	PDFY-48NMU-A
Tranrsformer	T	(Primary) 240V 60Hz (Secondary) (23.5V 0.9A)					
Room 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					
Fuse (Indoor controller board)	FUSE	250V 6.3A					
Fan motor (with Inner-thermostat)	MF1	4-pole Output 75W D104P75MW	4-pole Output 85W D104P85MW	4-pole Output 95W D104P95MW		4-pole Output 140W NC-100VM1	4-pole Output 190W NC-125VM1
Inner-thermostat (Fan motor)		OFF 130˚C±5˚C ON 90˚C±20˚C				OFF 150˚C±5˚C ON 96˚C±15˚C	
Fan motor capacitor	C1	3.0μF X 440V	5.0μF X 440V	6.0μF X 440V		5.0μF X 440V	8.0μF X 440V
Linear expansion valve	LEV	DC12V Stepping motor drive port dimension 3.2Ω (0~2000pulse) EDM-402MD			DC12V Stepping motor drive port dimension 5.2Ω (0~2000pulse) EDM-804MD		
Power supply terminal bed	TB2	(L1,L2,G) 330V 30A					
Transmission terminal bed	TB5 TB15	(1,2),(M1,M2,S) 330V 30A					

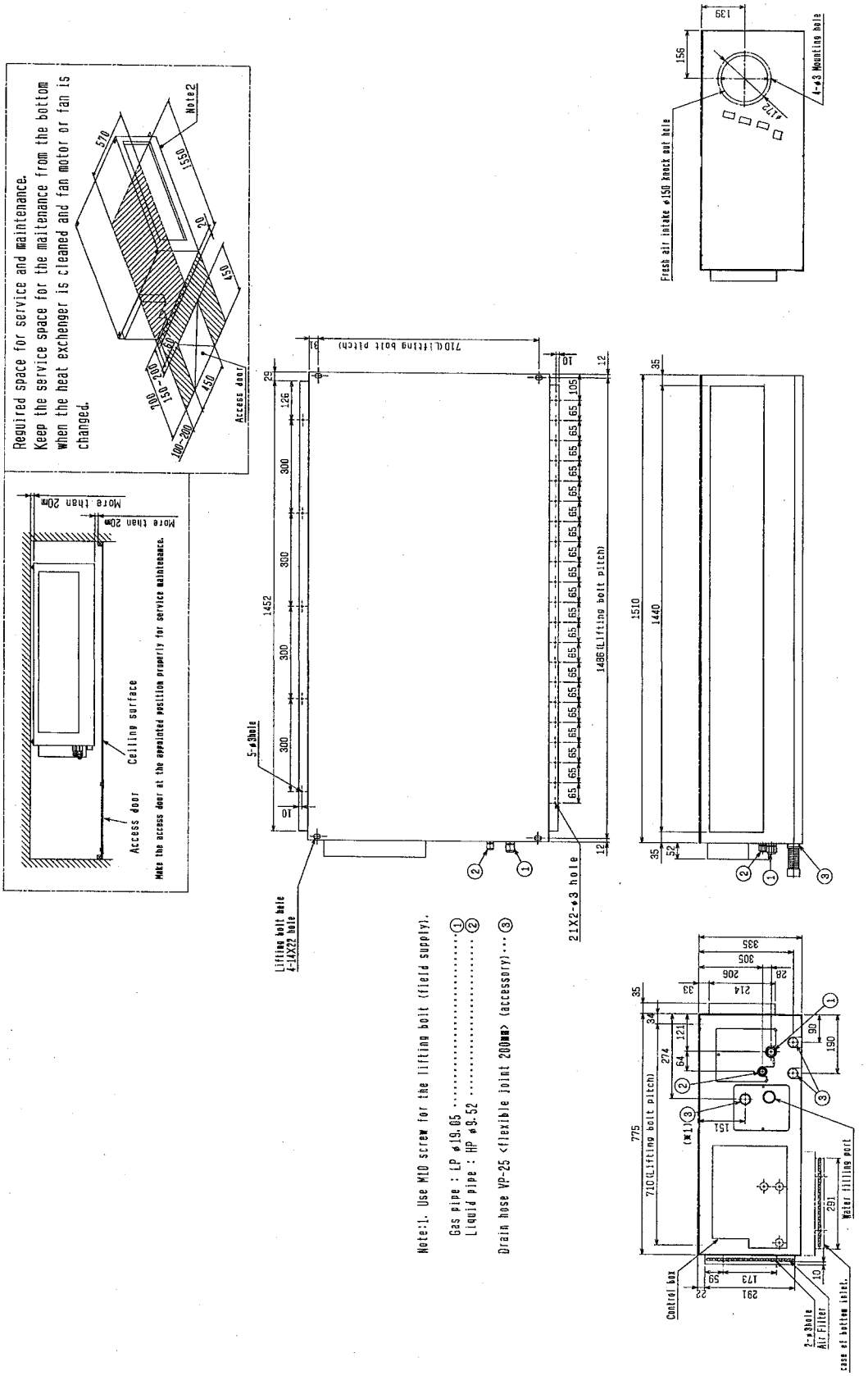
4 OUTLINES AND DIMENSIONS

PDFY-10,16,24,32NMU-A



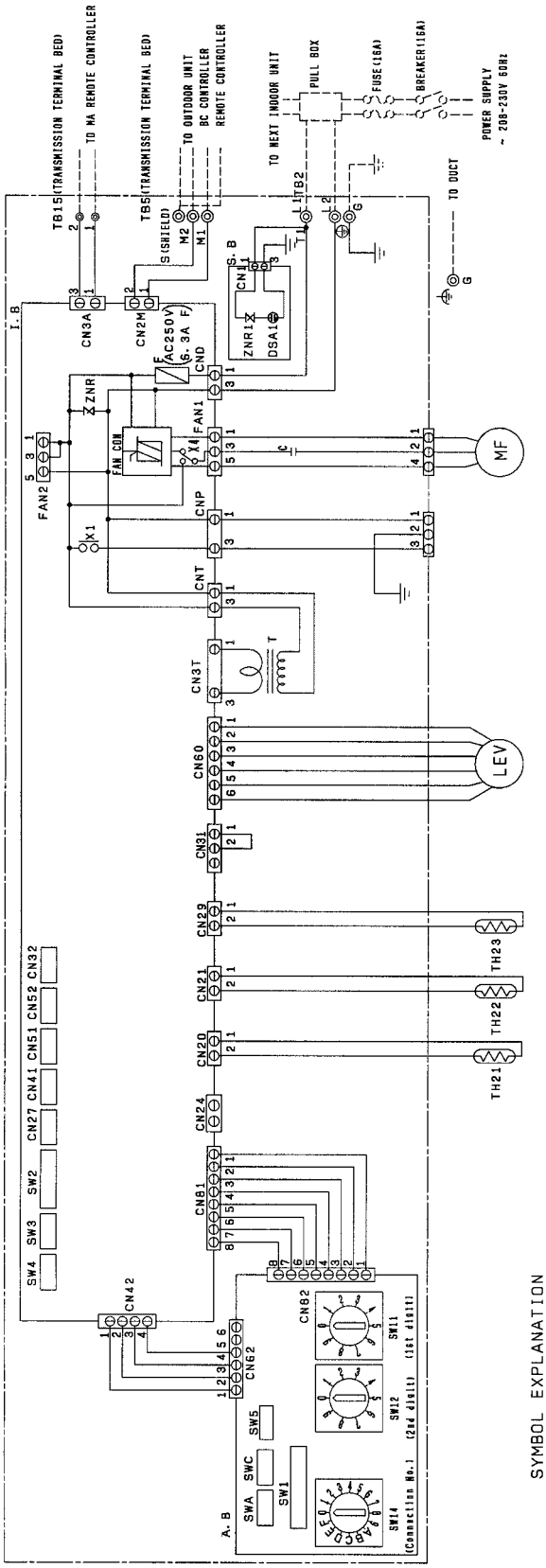
Model	A	B	C	D	E	F	G	J	K	L
PDFY-10NMU	652	750	710	686	95	636	9	3	200	126
PDFY-16NMU	902	1000	960	936	90	886	13	3	300	151
PDFY-24·32NMU	1102	1200	1160	1136	92.5	1086	16	4	300	101

PDFY-40,48NMU-A



5 WIRING DIAGRAM

PDFY-10,16,24,32NMU-A



NOTE: 1. TB2, TB5 and TB15 shown in dotted line are field work.
2. Mark ◎ indicates terminal bed, ⊖ connector, ⊟ board insertion connector or fastening connector of control board.

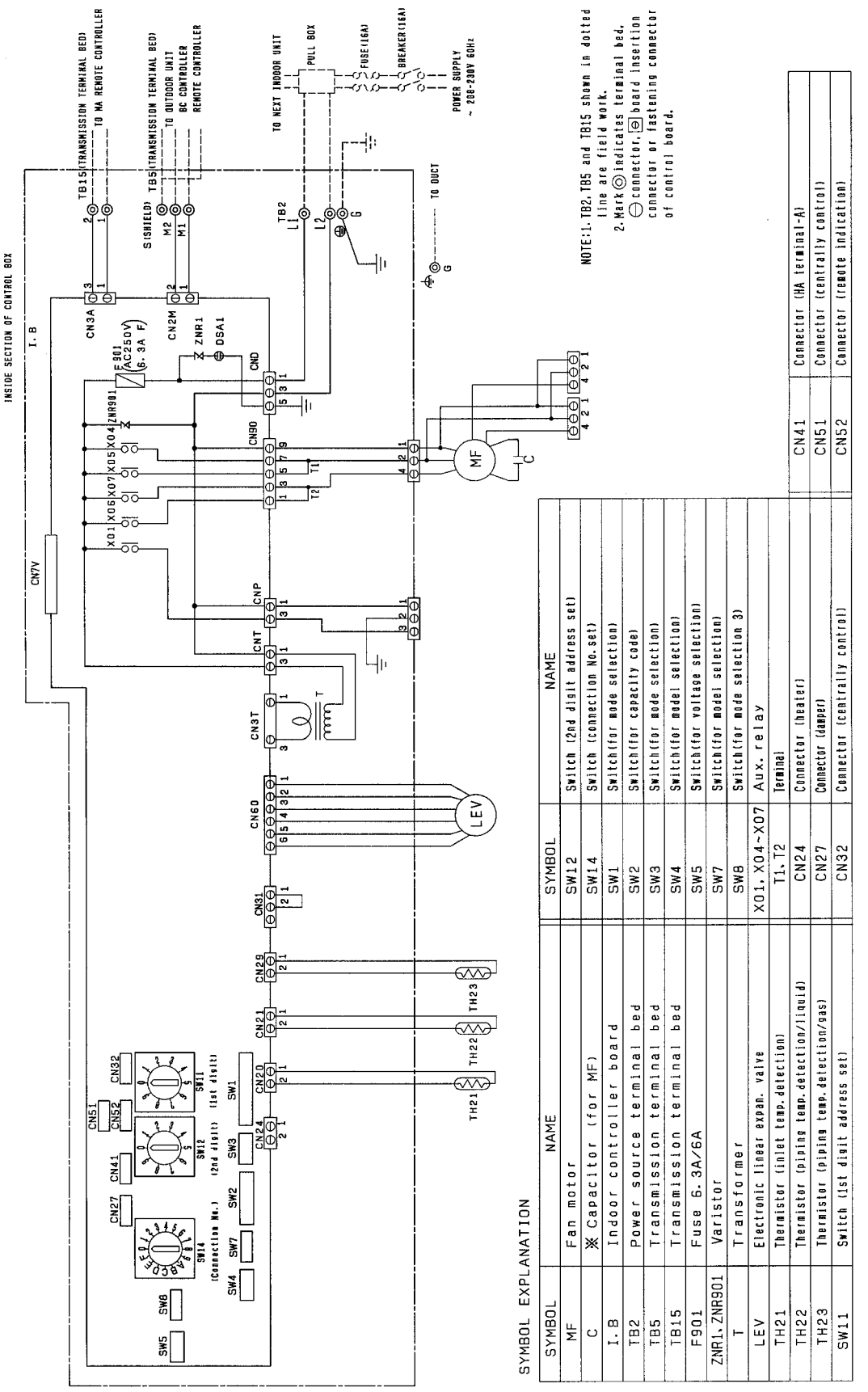
SYMBOL EXPLANATION

SYMBOL	NAME
MF	Fan motor
C	※ Capacitor (for MF)
I.B	Indoor controller board
A.B	Address board
TB2	Power source terminal bed
TB5	Transmission terminal bed
TB15	Transmission terminal bed
F	Fuse AC250V 6.3A F
T	Transformer
LEV	Electronic linear expan. valve
TH21	Thermistor (inlet temp. detection)
TH22	Thermistor (piping temp. detection/liquid)
TH23	Thermistor (piping temp. detection/gas)
SWA(A.B)	Switch (optional parts)

SYMBOL	NAME
SWC(A.B)	Switch (optional parts)
SW11(A.B)	Switch (1st digit address set)
SW12(A.B)	Switch (2nd digit address set)
SW14(A.B)	Switch (connection No. set)
SW1(A.B)	Switch(for mode selection)
SW2(I.B)	Switch(for capacity code)
SW3(I.B)	Switch(for mode selection)
SW4(I.B)	Switch(for model selection)
SW5(A.B)	Switch(for voltage selection)
X1, X4	Aux. relay
S.B	Surge absorber board
T1	Terminal
CN24	Connector (heater)
CN27	Connector (damper)
CN32	Connector (centrally control)

CN41	Connector (HA terminal-A)
CN51	Connector (centrally control)
CN52	Connector (remote indication)

PDFY-40,48NMU-A



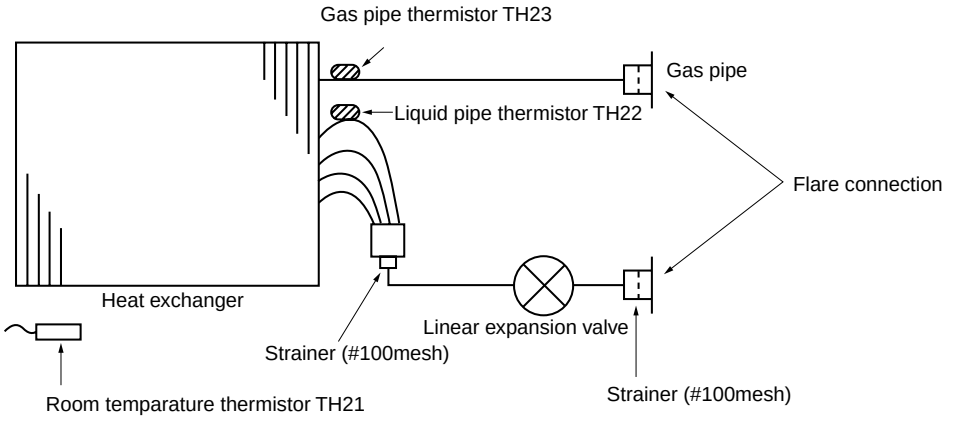
SYMBOL EXPLANATION

SYMBOL	NAME
MF	Fan motor
C	※ Capacitor (for MF)
I.B	Indoor controller board
TB2	Power source terminal bed
TB5	Transmission terminal bed
TB15	Transmission terminal bed
F901	Fuse 6.3A/6A
ZNR1,ZNR901	Varistor
T	Transformer
LEV	Electronic linear expan. valve
TH21	Thermistor (inlet temp.detection)
TH22	Thermistor (piping temp.detection/liquid)
TH23	Thermistor (piping temp.detection/gas)
SW11	Switch (1st digit address set)

SYMBOL	NAME
SW12	Switch (2nd digit address set)
SW14	Switch (connection No.set)
SW1	Switch(for mode selection)
SW2	Switch(for capacity code)
SW3	Switch(for mode selection)
SW4	Switch(for model selection)
SW5	Switch(for voltage selection)
SW7	Switch(for model selection)
SW8	Switch(for mode selection 3)
X01,X04~X07	Aux. relay
T1,T2	Terminal
CN24	Connector (heater)
CN27	Connector (damper)
CN32	Connector (centrally control)

CN41	Connector (MA terminal-A)
CN51	Connector (centrally control)
CN52	Connector (remote indication)

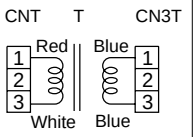
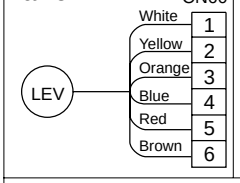
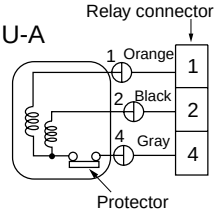
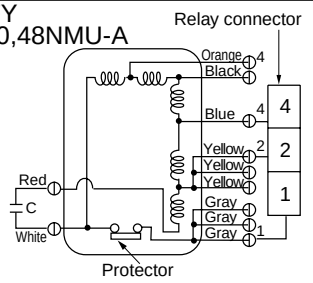
6 REFRIGERANT SYSTEM DIAGRAM



Item \ Capacity	PDFY-10,16NMU-A	PDFY-24,32NMU-A	PDFY-40,48NMU-A
Gas pipe	ø12.7<1/2F>	ø15.88<5/8F>	ø19.05<3/4F>
Liquid pipe	ø6.35<1/4F>	ø9.52<3/8F>	ø9.52<3/8F>

7 TROUBLE SHOOTING

7-1. How to check the parts

<table>
<tr><th>Parts name</th><th>Check points</th></tr>
<tr><td>Room temparature thermistor (TH21)
Liquid pipe thermistor (TH22)
Gas pipe thermistor (TH23)</td><td>Disconnect the connector, then measure the resistance using a tester.
(Sorrounding temperature 10˚C~30˚C)
<table><tr><th>Normal</th><th>Abnormal</th></tr><tr><td>4.3kΩ ~9.6kΩ</td><td>Open or short</td></tr></table>(Refer to the thermistor)</td></tr>
<tr><td>Transformer

</td><td>Disconnect the connector and measure the resistance using a tester.
<table><tr><th></th><th>Normal</th><th>Abnormal</th></tr><tr><td>CNT(1)-(3)</td><td>App.45Ω</td><td rowspan="2">Open or short</td></tr><tr><td>CN3T(1)-(3)</td><td>App.1Ω</td></tr></table></td></tr>
<tr><td>Linear expansion valve

</td><td>Disconnect the connector then measure the resistance valve using a tester.
Refer to the next page for a detail.
<table><tr><th colspan="4">Normal</th><th>Abnormal</th></tr><tr><td>(1)-(5)
White-Red</td><td>(2)-(6)
Yellow-Blown</td><td>(3)-(5)
Orange-Red</td><td>(4)-(6)
Blue-Brown</td><td rowspan="2">Open or short</td></tr><tr><td colspan="4">150Ω ±10%</td></tr></table></td></tr>
<tr><td>Fan motor
PDFY
- 10~32NMU-A

</td><td>Measure the resistance between the terminals using a tester. (at 20˚C)
<table><tr><th rowspan="2">Motor terminal
or
Relay connector</th><th colspan="2">Normal</th><th rowspan="2">Abnormal</th></tr><tr><th>10,16</th><th>24~32</th></tr><tr><td>Orange-Gray</td><td>43.1Ω</td><td>40.5Ω</td><td rowspan="2">Open or short</td></tr><tr><td>Brack-Gray</td><td>53.6Ω</td><td>48.8Ω</td></tr></table></td></tr>
<tr><td>PDFY
- 40,48NMU-A

</td><td>Measure the resistance between the terminals using a tester. (at 20˚C)
<table><tr><th rowspan="2">Motor terminal
or
Relay connector</th><th colspan="2">Normal</th><th rowspan="2">Abnormal</th></tr><tr><th>40</th><th>48</th></tr><tr><td>Gray-Orange</td><td>23.5Ω</td><td>16.45Ω</td><td rowspan="5">Open or short</td></tr><tr><td>Orange-Black</td><td>4.79Ω</td><td>8.30Ω</td></tr><tr><td>Black-Blue</td><td>6.78Ω</td><td>1.454Ω</td></tr><tr><td>Blue-Yellow</td><td>13.77Ω</td><td>7.94Ω</td></tr><tr><td>Yellow-Red</td><td>29.8Ω</td><td>21.9Ω</td></tr></table></td></tr>
</table>

<Thermistor Characteristic graph>

Thermistor for lower temperature

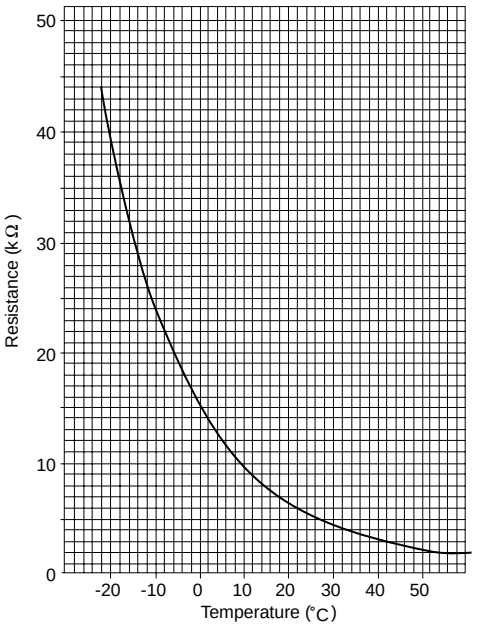
Room temparature thermistor(TH21)
Liquid pipe thermistor(TH22)
Gas pipe temparature thermistor(TH23)
Drain sensor(DS)

Thermistor R_0=15kΩ ± 3%
Fixed number of B=3480kΩ ± 2%

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

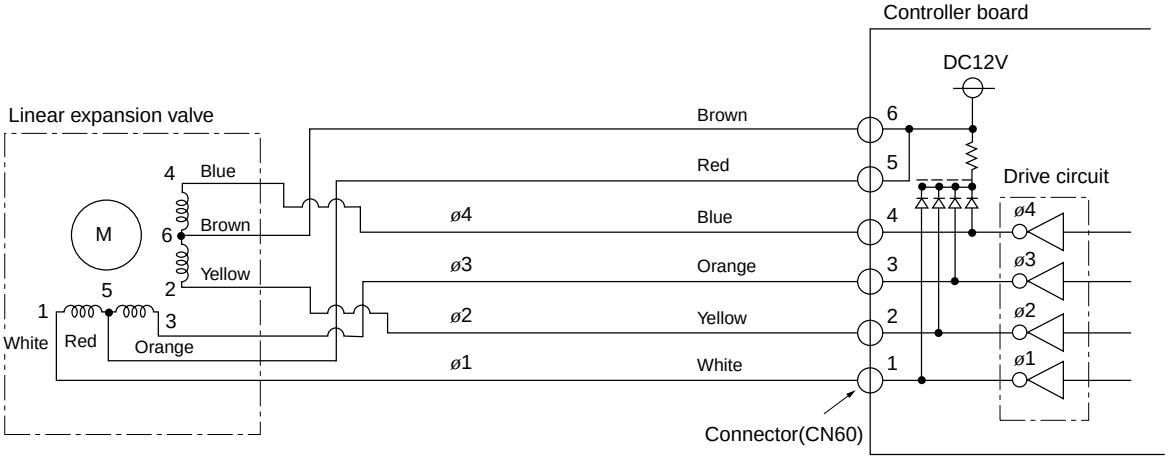
0˚C	15kΩ
10˚C	9.6kΩ
20˚C	6.3kΩ
25˚C	5.2kΩ
30˚C	4.3kΩ
40	3.0kΩ

< 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 expasion valve>



<Output pulse signal and the valve operation>

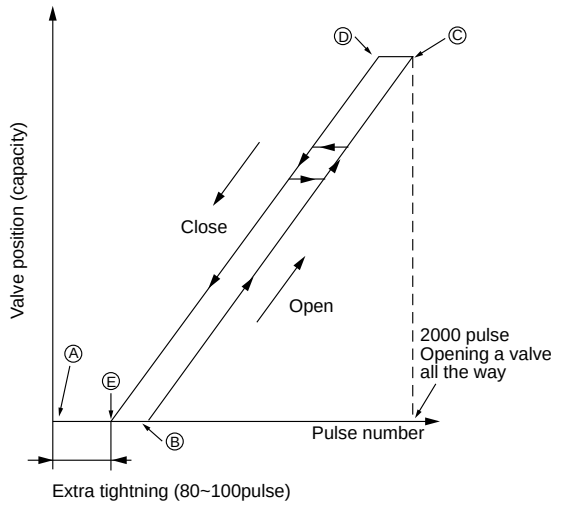
Output (Phase)	Output			
	1	2	3	4
ø1	ON	OFF	OFF	ON
ø2	ON	ON	OFF	OFF
ø3	OFF	ON	ON	OFF
ø4	OFF	OFF	ON	ON

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 locks and vibrates.

② Linear expansion valve operation

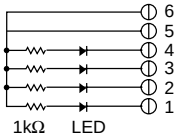
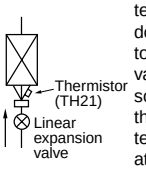


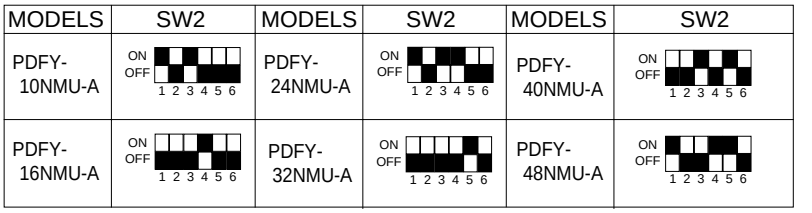
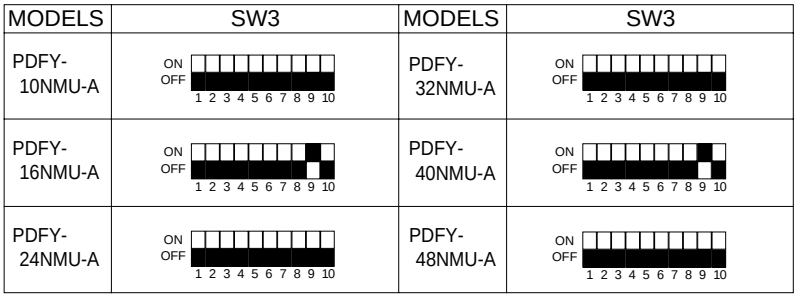
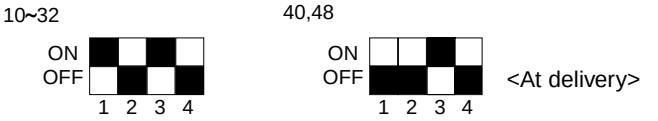
* When the switch is turned on, 2200 pulse closing valve signal will be send till it goes to Ⓐ point in order to define the valve position.

When the valve move smoothly, there is no noise or vibration occurring from the linear expansion valve : however, when the pulse number moves from Ⓔ to Ⓐ 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 150Ω ± 10%.	Exchange the linear expansion valve.
Valve doesn´t close completely (thermistor 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 refrigeration 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.

Switch	Pole	Function	Operation by switch		Remarks
			ON	OFF	
SW1 Mode Selection	1	Thermistor<Intake temperature detection>position	Built-in remote controller	Indoor unit	Address board <At delivery> 
	2	Filter crogging detection	Provided	Not provided	
	3	Filter life	2,500hr	100hr	
	4	Air intake	Effective	Not effective	
	5	Remote indication switching	Thermostat ON signal indication	Fan output indication	
	6	Humidifier control	Always operated while the heat is ON	Operated depends on the condition	
	7	Air flow st	Low	Extra low	
	8	Heat thermostat OFF	Setting air flow	Reset to SW1-7	
	9	Auto reset function	Effective	Not effective	
	10	Power ON/OFF	Effective	Not effective	
SW2 Capacity code setting	1~6				Indoor controller board Set while the unit is off. <At delivery> Set for each capacity.
SW3 Function Selection	1~10				Indoor controller board Set while the unit is off.
SW4 Unit Selection	1~4				Indoor controller board Set while the unit is off.

Note :The DipSW setting is effective during unit stopping (remote controller OFF) for SW1,2,3 and 4 commonly and the power source is not required to reset.

<table>
<tr><th>Switch</th><th>Pole</th><th>Operation by switch</th><th>Remarks</th></tr>
<tr>
<td>SWA
Option

Note:1</td>
<td>1~3</td>
<td>
<table>
<tr><th></th><th colspan="2">10</th><th colspan="2">16</th><th colspan="2">24</th><th colspan="2">32</th></tr>
<tr><th></th><th>208V</th><th>230V</th><th>208V</th><th>230V</th><th>208V</th><th>230V</th><th>208V</th><th>230V</th></tr>
<tr><td>3
2
1</td><td>80Pa
50Pa
30Pa</td><td>100Pa
60Pa
40Pa</td><td>50Pa
80Pa
30Pa</td><td>60Pa
100Pa
40Pa</td><td>50Pa
80Pa
30Pa</td><td>60Pa
100Pa
40Pa</td><td>-
50Pa,100Pa
30Pa</td><td>-
60Pa,115Pa
40Pa</td></tr>
</table>
※ For other models, change the setting of static pressure by replacing the connector.
</td>
<td>Address board

<At delivery>
3
2
1</td>
</tr>
<tr>
<td>SWC
Option

Note:1</td>
<td>2</td>
<td>
<table>
<tr><th colspan="2">10~24</th><th colspan="2">32</th></tr>
<tr><td>Option

Standard</td><td></td><td>Option

Standard</td><td>208V 230V
100Pa 115Pa
30Pa,50Pa 40Pa,60Pa</td></tr>
</table>
</td>
<td>Address board

<At delivery>
“オプション”
(Option)
“標準”
(Standard)</td>
</tr>
<tr>
<td>SW11
1st digit address setting
SW12
2nd degit address setting

Note:2</td>
<td>Rotary switch</td>
<td>SW12 SW11
10 1
Address setting should be done when network remote controller (PAR-F25MA) is being used.</td>
<td>Address board
Address can be set while the unit is stopped.
<At delivery>
SW12 SW11</td>
</tr>
<tr>
<td>SW14
Connection No. setting

Note:2</td>
<td>Rotary switch</td>
<td>SW14
This is the switch to be used when the indoor unit is operated with R2 series outdoor unit as a set.</td>
<td>Address board

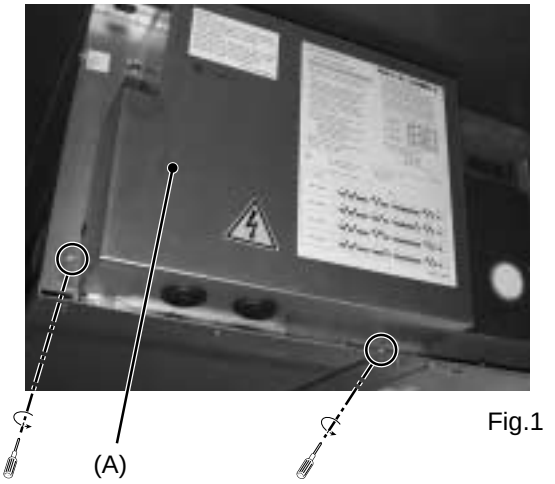
<At delivery>
SW14</td>
</tr>
</table>

Note 1:The DipSW setting is effective always after powering (remote controller ON) for SWA and SWC.
2:The DipSW setting is effective during unit stopping (remote controller OFF) for SW11,12,14 and 5

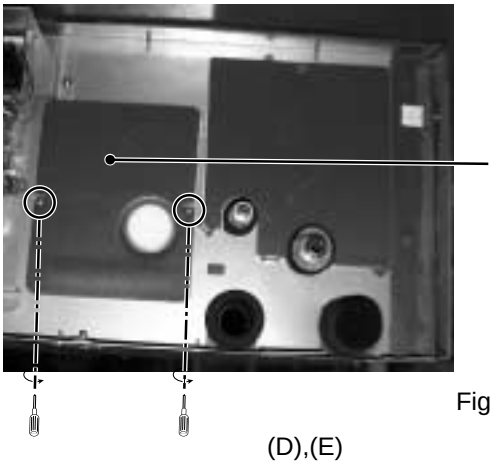
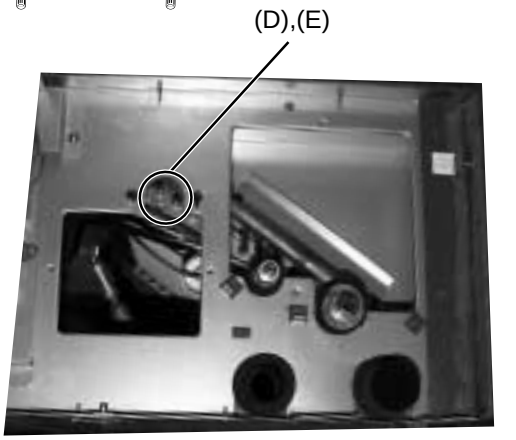
8 DISASSEMBLY PROCEDURE

8-1 CONTROL BOX

Be careful removing heavy parts.

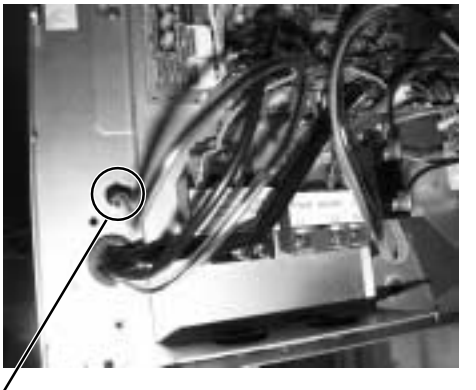
OPERATING PROCEDURE	PHOTOS
1.Removing the control box cover (1)Remove the fixing screws(two) of the cover(A) and remove the cover.	 Fig.1

8-2 THERMISTOR (Liquid piping temperature detection)

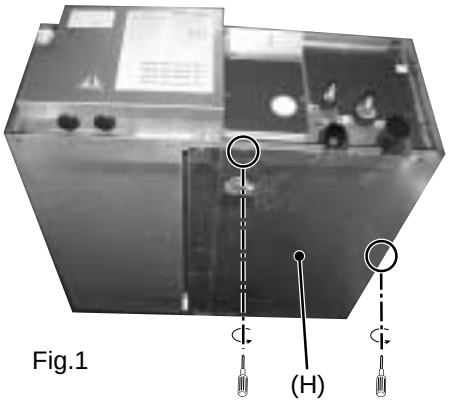
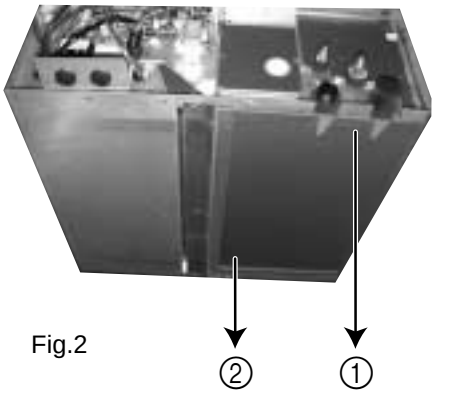
OPERATING PROCEDURE	PHOTOS
1.Removing the cover (1)Remove the fixing screws(two) of the cover(C) and remove the cover. **2.Removing the thermistor** (1)Remove the thermistor(D), from the thermistor holder(E), which are installed on the copper tube.	 Fig.1  Fig.2

8-3 THERMISTOR (Intake air temperature detection)

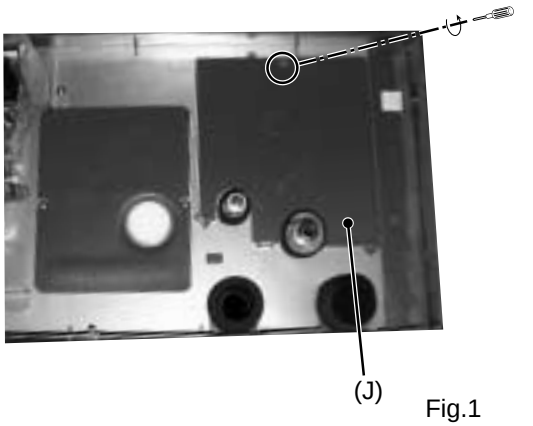
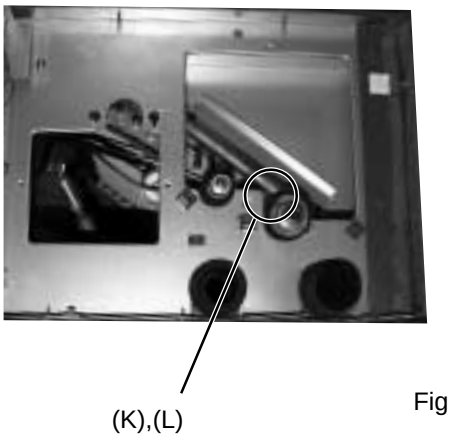
Be careful removing heavy parts.

OPERATING PROCEDURE	PHOTOS
1.Removing the thermistor and thermistor holder (1)Pull out the thermistor holder(F) and thermistor (G) which are fixed the control box.	 (F),(G) Fig.1

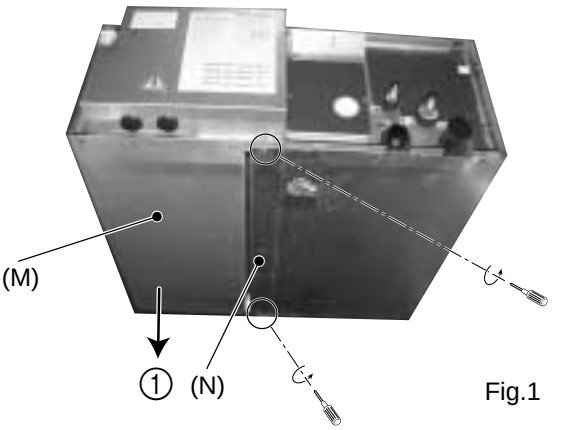
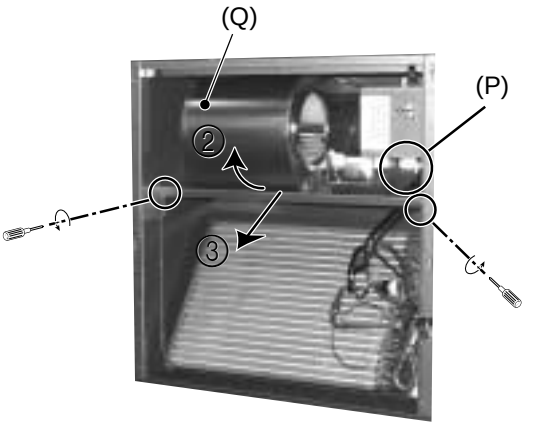
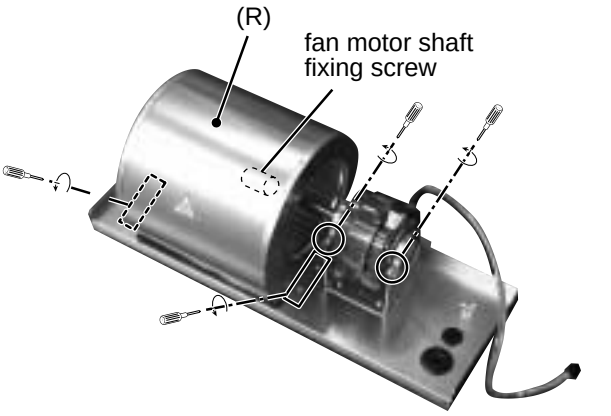
8-4 DRAINPAN

OPERATING PROCEDURE	PHOTOS
1.Removing the cover (1)Remove the fixing screws of the cover(H) and remove the cover. **2.Removing the drainpan** (1)Pull and remove the drainpan in the direction of the arrow ① and ② alternatively.	 Fig.1 (H)  Fig.2 ② ①

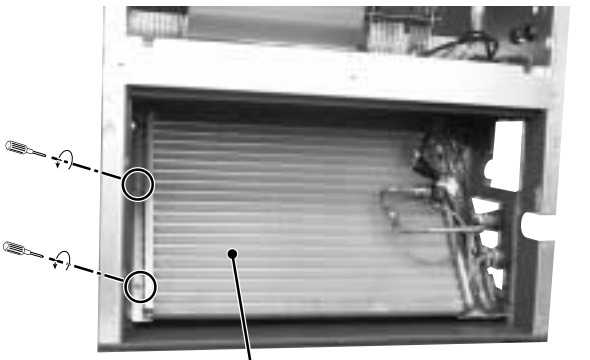
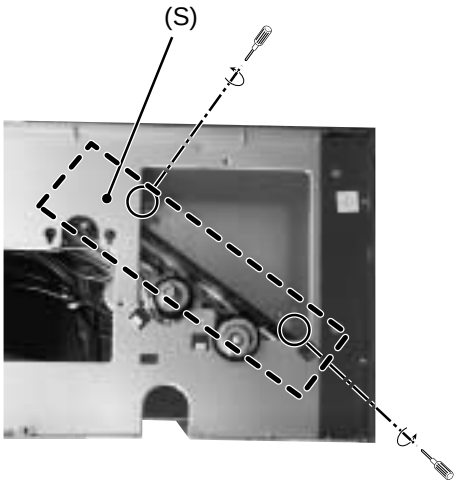
8-5 THERMISTOR (Gus piping temperature detection)

OPERATING PROCEDURE	PHOTOS
1.Removing the cover (1)Remove the fixing screw of the cover(J) and remove the cover. **2.Removing the thermistor** (1)Remove the thermistor(K), from the thermistor holder(L), which are installed on the copper tube.	 Fig.1  Fig.2

8-6 FAN and FAN MOTOR

OPERATING PROCEDURE	PHOTOS
1.Removing the filter (1)Press the tabs of the filter and remove the filter in the direction of the arrow ①. **2.Removing the bottom plate** (1)Remove the fixing screws (two) of the bottom plate(N) and remove the plate. **3.Removing the cable** (1)Remove the cable(P) threw the rubber bush. **4.Sliding the fan section** (1)Remove the fixing screws(two) of the fan base plate. (2)Pull up the fan section(Q) in direction of the arrow ② and slide the direction of the arrow ③. **5.Removing fan casing and sirroco fan** (1)Remove the fixing screws (four) of the fan casing(R). (2)Remove the fan motor shaft fixing screw and remove the fan casing(R) and sirroco fan. **6.Removing the fan motor** (1)Remove the condensor cable (in case of Model:PDFY-40,48NMU-A) (2)Remove the fixing screws of the motor fixtures (two) and remove the motor. Notice:Incase of the Model(PDFY-16~48NMU-A) stick out the motor shafts on both side of the motor.	 Fig.1  Fig.2  Fig.3

8-7 HEAT EXCHANGER

OPERATING PROCEDURE	PHOTOS
1.Removing the drainpan with procedure 8-4 **2.Removing the cover(J) with procedure 8-5** **3.Removing the Heat exchanger** (1)Remove the fixing screws of the heat exchanger(S) and remove the heat exchanger.	 Fig.1  (S) Fig.2

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