DAIKIN

EDUS 39 - 900 - F10_a

R-410A

Engineering Data

FXMQ-MF
Outdoor Air Processing Unit

DAIKIN AC (AMERICAS), INC.

FXMQ-MF
Outdoor Air Processing Unit

1. Features

Outdoor-Air Processing Unit

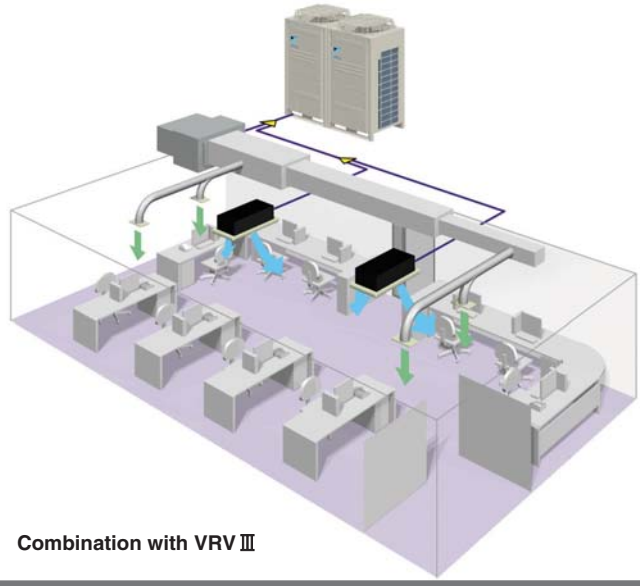
60 Hz only

Combine fresh air treatment and air conditioning, supplied from a single system.

Model Names

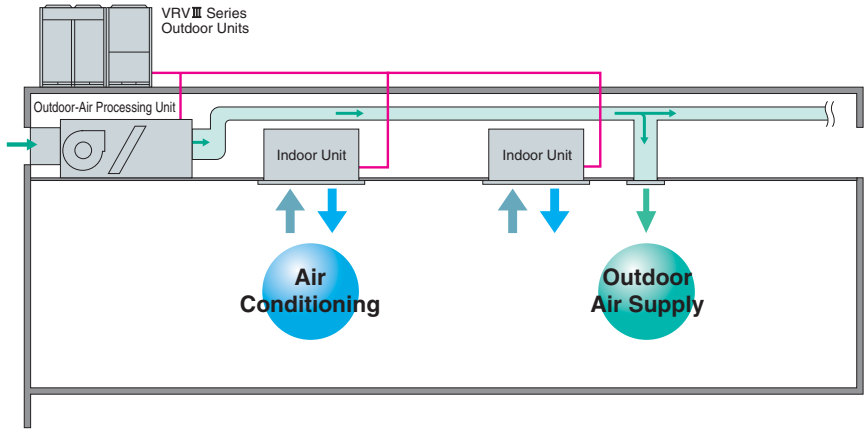
FXMQ48MFVJU, FXMQ72MFVJU, FXMQ96MFVJU

Fresh air treatment and air conditioning can be achieved with a single system by using heat pump technology—without the usual troublesome air supply and air discharge balance design. Fan coil units for air conditioning and an outdoor-air processing unit can be connected to the same refrigerant line. The results are enhanced design flexibility and a significant reduction in total system costs.



Combination with VRV Ⅲ

Air conditioning and outdoor air processing can be accomplished using a single system.



Connection Conditions

The following restrictions must be observed in order to maintain the indoor units connected to the same system.

- When outdoor-air processing units are connected, the total connection capacity must be within 50% to 100% of that of the outdoor units.
- When outdoor-air processing units and standard indoor units are connected, the total connection capacity of the outdoor-air processing units must not exceed 30% of that of the outdoor units.
- Outdoor-air processing units can be used without indoor units.
- Connectable outdoor units: R-410A P series.

•The unit introduces outdoor air and adjusts the outdoor air temperature via fixed discharge temperature control, thereby reducing the air conditioning load.

* The system can operate with outdoor-air temperatures ranging from 23 to 109.4˚F. Heating performance is somewhat adversely affected when the outdoor-air temperature is 32˚F or below.
* When shipped from the factory, the thermostat is set at 64.4˚F for cooling and 77˚F for heating. The set temperature can be varied within the range of 55.4–77˚F during cooling operation, and 64.4–86˚F during heating operation, in the local setting mode using the wired remote controller. The temperature, however, is not displayed on the remote controller.
* While in machine protection mode and depending on outdoor air conditions, discharge air temperature may not be at the set temperature.
* The fan stops when operating in defrosting, oil returning and hot start operations. The fan also may stop due to mechanical protection control.

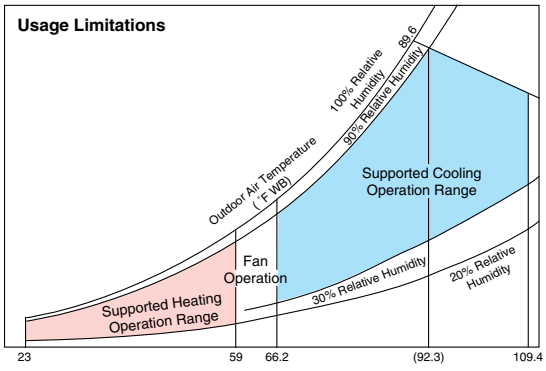
• Ceiling mounted duct units with three differing capacities are available. These can be connected to VRV series outdoor units to meet a variety of different requirements.

Airflow rate (cfm)

FXMQ48MFVJU	635
FXMQ72MFVJU	988
FXMQ96MFVJU	1,236

• Optional equipment includes long-life filters.

• Compatible with outdoor temperatures from 23˚F to 109.4˚F.



Notes
1. The data shown in the graph illustrates the supported operation ranges under the following conditions.
   Indoor and Outdoor Unit
   Effective piping length: 25ft.
   Height differential: 0ft.
2. The discharge temperature can be set using the remote controller. However, the actual temperature may not match the temperature setting under some circumstances due to the outdoor-air processing load or mechanical protection controls.
3. The system will not operate in fan mode when the outdoor air temperature is 41˚F or below.

• High-performance filters with dust collection efficiencies (JIS calorimetry) of 90% and 65% are also available as options.

• As with the VRVⅢ system, a variety of control systems can be deployed, including remote control from distances of up to 1640 ft 5 in.

* Group control is not possible between this unit and standard type indoor units. Connect remote controllers to each unit.

BRC1E71
Wired remote controller
(option)

• The "self-diagnosis function" indicates the occurrence and nature of abnormalities in the system by displaying codes on the remote controller.

• A central control system compatible with the VRVⅢ system can be installed.

* It is not possible to change the discharge air temperature settings from the central control system.
* Do not associate this equipment into zones with standard indoor units, as central control will not be possible.

DCS302CA71
Central remote controller
(option)

• As with the VRVⅢ system, the equipment employs the "super wiring system" so that the wiring linking indoor and outdoor units can also be utilised for central control.

Notes:
* Linked control of the product and the HRV is not supported.
* This equipment is intended for the treatment of outdoor air only. It is not to be used for maintaining indoor air temperature. Install and use with standard indoor units. Be sure to position the air discharge openings of the product in positions where the airflow will not blow on people directly. When outdoor-air processing is in excess, the unit switches to thermo-off mode, and outdoor air flows into the room directly.
* For outdoor ducts, be sure to provide heat insulation to prevent condensation.
* Group control of the product and the standard indoor units is not supported. A separate remote controller should be connected to each individual unit.
* The system will not operate in fan mode when the outdoor air temperature is 41˚F or below.
* If the product is allowed to operate 24 hours a day, maintenance (part replacement, etc.) must be performed periodically.
* Temperature setting and Power Proportional Distribution (PPD) are not possible even if the intelligent Touch Controller or the intelligent Manager III is installed.
* The remote controller wired to the outdoor-air processing unit must not be set as the master remote controller. Otherwise, when set to “Auto,” the operation mode will switch according to the outdoor air conditions, regardless of the indoor temperature.

2. Specifications

Model			FXMQ48MFVJU	FXMQ72MFVJU	FXMQ96MFVJU
★1 Cooling Capacity		Btu/h	48,000	72,000	96,000
★2 Heating Capacity		Btu/h	30,000	47,000	59,000
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (H×W×D)		in.	18’1/2”×29’1/4”×43’5/16”	18’1/2”×54’3/8”×43’5/16”	18’1/2”×54’3/8”×43’5/16”
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	in.	3×26×13	3×26×13	3×26×13
	Face Area	ft²	3.01	7.00	7.00
Fan	Model		D13/4G2DA1	D13/4G2DA1	D13/4G2DA1
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	380×1	380×1	380×1
	Air Flow Rate (H/L)	cfm	635	988	1,236
	External Static Pressure ★4	in. WG	0.88	0.96	1.03
	Drive		Direct Drive	Direct Drive	Direct Drive
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Fiber	Glass Fiber	Glass Fiber
Air Filter			★4	★4	★4
Piping Connections	Liquid Pipes	in.	3/8 (Flare Connection)	3/8 (Flare Connection)	3/8 (Flare Connection)
	Gas Pipes	in.	5/8 (Flare Connection)	3/4 (Brazing Connection)	7/8 (Brazing Connection)
	Drain Pipe		PS1B (female thread)	PS1B (female thread)	PS1B (female thread)
Machine Weight (Mass)		Lbs	190	271	271
Safety Devices			Fuse Thermal Protector for Fan Motor	Fuse Thermal Protector for Fan Motor	Fuse Thermal Protector for Fan Motor
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Standard Accessories			Operation Manual, Installation Manual, Sealing Pads, Screws, Clamps.	Operation Manual, Installation Manual, Sealing Pads, Connection Pipes, Screws, Clamps.	Operation Manual, Installation Manual, Sealing Pads, Connection Pipes, Screws, Clamps.
Connectable Outdoor Units ★5,★6			R-410A P series	R-410A P series	R-410A P series
Drawing No.			C : 3D065463	C : 3D065463	C : 3D065463

Notes:

★ 1 Nominal cooling capacities are based on the following conditions:
Outdoor temperature: 91°FDB, 82°FWB (68%RH)
Discharge set temp: 64°FDB
Equivalent ref. piping: 25ft (Horizontal)

★ 2 Nominal heating capacities are based on the following conditions:
Outdoor temperature: 32°FDB, 27°FWB (50%RH)
Discharge set temp: 77°FDB
Equivalent ref. piping: 25ft (Horizontal)

3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.

★ 4 Air filter is not standard accessory, but please mount it in the duct system of the suction side.
Select its duct collection efficiency (gravity method) 50% or more.

★ 5 Within the range that the total capacity of indoor units is 50 to 100%, it is possible to connect to the outdoor unit.

★ 6 This equipment cannot be incorporated into the remote group control of the VRV III system.

3. Dimensions

3.1 Indoor Units

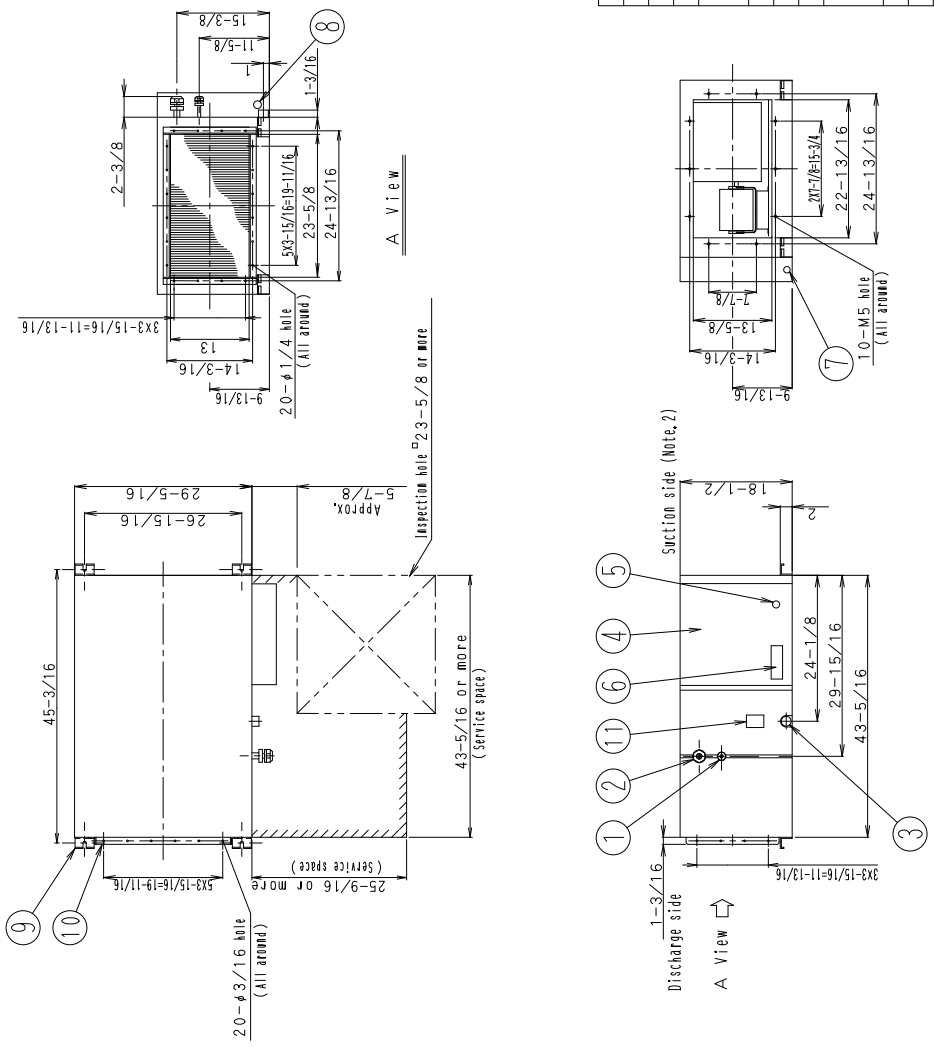
FXMQ48MFVJU

Unit (in.)

3D065452A

Number	Name	Description
11	Water supply port	
10	Discharge companion flange	
9	Hanger bracket	M10
8	Transmission wiring connection	
7	Power supply wiring connection	
6	Name plate	Note. 1
5	Ground terminal	M5(Inside Control box)
4	Control box	
3	Drain piping connection	PS1B Internal thread Major dia. φ1-5/16, Minor dia. φ1-3/16
2	Gas pipe connection	φ5/8 Flare connection
1	Liquid pipe connection	φ3/8 Flare connection

Notes) 1. Location of unit's Name Plates:
Control box surface
2. Mount the air filter at the suction side.
(Select its colorimethod (gravity method) 50% or more.



FXMQ72MFVJU
FXMQ96MFVJU

Unit (in.)

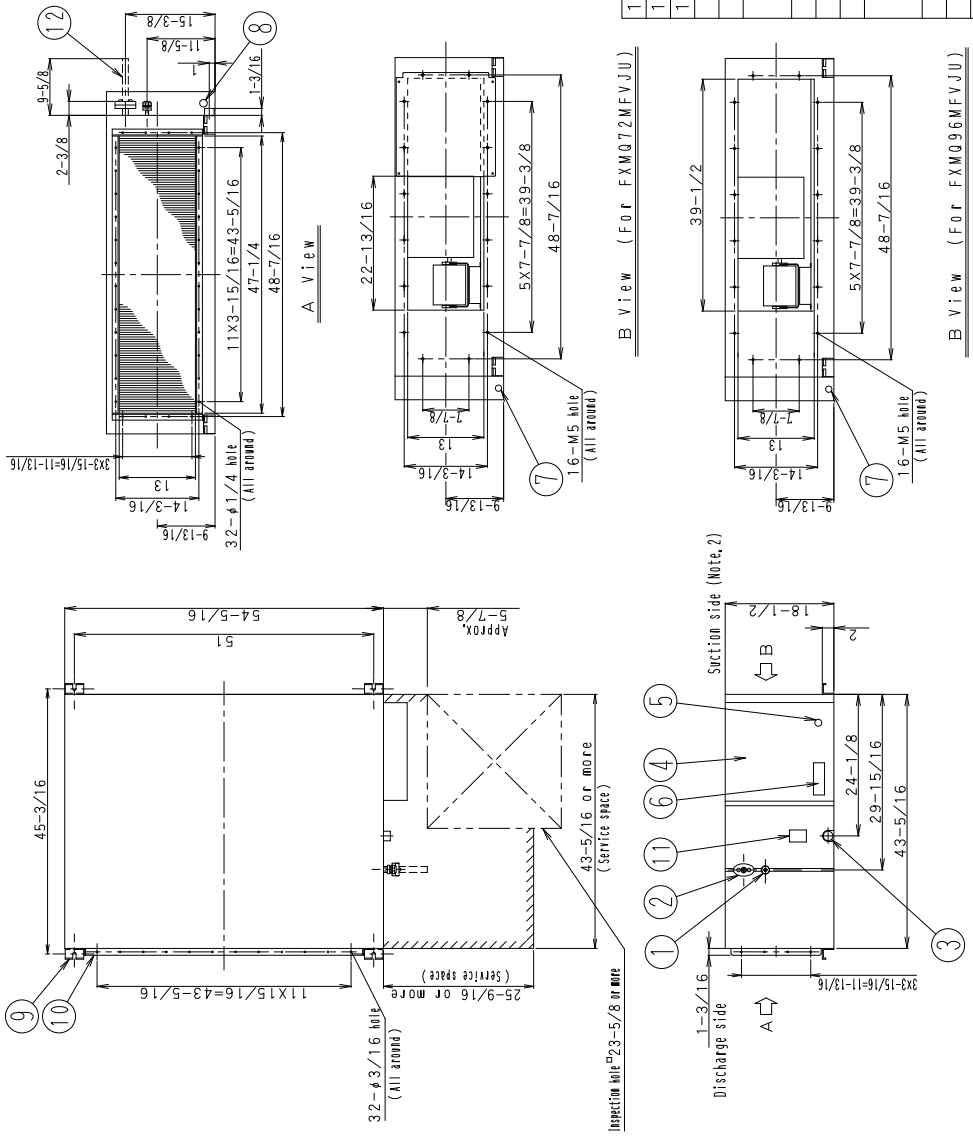
3D065453A

Number	Name	Description
12	Attached piping	Brazing
11	Water supply port	
10	Discharge companion flange	
9	Hanger bracket	M10
8	Transmission wiring connection	
7	Power supply wiring connection	
6	Name plate	Note 1.
5	Ground terminal	M5(Inside Control box)
4	Control box	
3	Drain piping connection	PS1B Internal thread Major dia. φ1-5/16, Minor dia. φ1-3/16
2	Gas pipe connection	Attendant piping connection
1	Liquid pipe connection	Flare connection

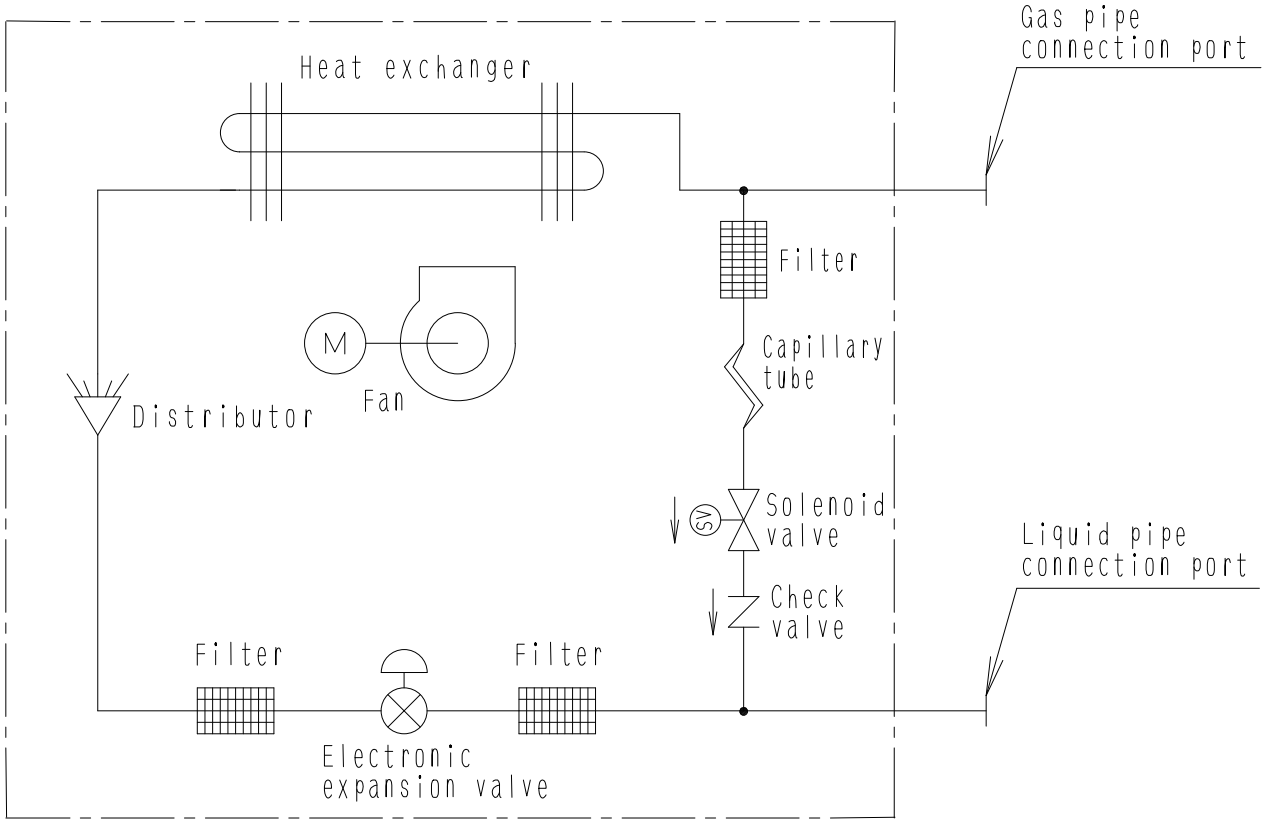
Piping size (Field supply)

Indoor unit	Gas side	Liquid side
FXMQ72MFVJU	φ3/4attached piping	φ3/8
FXMQ96MFVJU	φ7/8attached piping	φ3/8

Notes) 1. Location of unit's Name Plates:
Control box surface
2. Mount the air filter at the suction side.
(Select its colorimethod (gravity method)
50% or more.



4. Piping Diagrams



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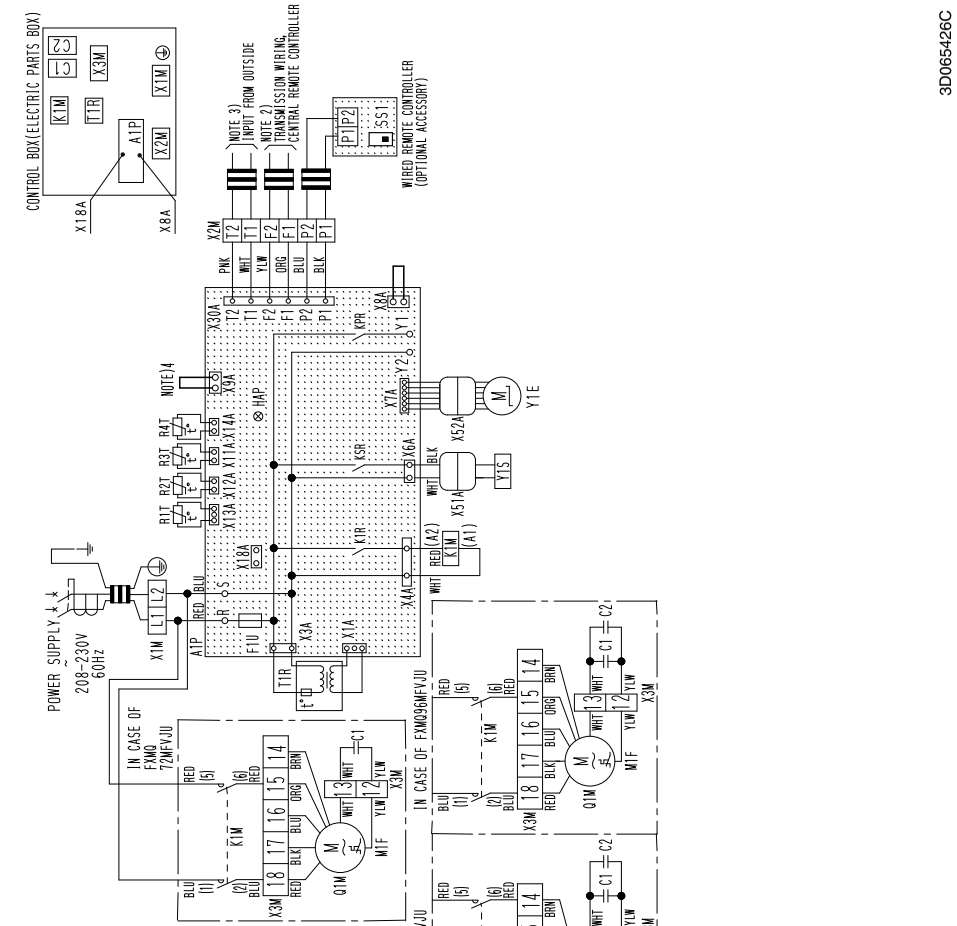
5. Wiring Diagrams

FXMQ48MFVJU
FXMQ72MFVJU
FXMQ96MFVJU



INDOOR UNIT		X1M	TERMINAL BLOCK(POWER)
A1P	PRINTED CIRCUIT BOARD	X2M	TERMINAL BLOCK(CONTROL)
C1, C2	CAPACITOR(M1F)	X3M	TERMINAL BLOCK
F1U	FUSE(Ⓑ, 5A, 250V)(A1P)	X51A, X52A	CONNECTOR
HAP	LIGHT EMMITING DIODE (SERVICE MONITOR-GREEN)	Y1E	ELECTRIC EXPANSION VALVE
		Y1S	SOLENOID VALVE(HOT GAS)
K1M	MAGNETIC RELAY(M1F)		
K1R	MAGNETIC RELAY(M1F)		WIRED REMOTE CONTROLLER
KPR	MAGNETIC RELAY(M1P)	SS1	SELECT SWITCH(MAIN/SUB)
KSR	MAGNETIC RELAY(Y1S)		
M1F	MOTOR(FAN)		CONNECTOR FOR OPTIONAL PARTS
Q1M	THERMAL PROTECTOR (M1F EMBEDDED 135℃)	X18A	CONNECTOR(WIRING ADAPTOR FOR ELECTRICAL APPENDICES)
R1T	THERMISTOR(SUCTION AIR)		
R2T	THERMISTOR(COIL, LIQUID)		
R3T	THERMISTOR(COIL, GAS)		
R4T	THERMISTOR(DISCHARGE AIR)		
T1R	TRANSFORMAR(208V/230V 25VA)		

NOTES)
1. □□: TERMINAL BLOCK, ⊠, D: CONNECTOR, —○— : TERMINAL, ⊠: SHORT CIRCUIT CONNECTOR, —▮▮— : FIELD WIRING.
2. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTRUCTION MANUAL.
3. IN CASE CONNECTING THE INPUT WIRES FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY REMOTE CONTROLLER. IN DETAILS, REFER TO THE INSTALLATION MANUAL ATTACHED TO THE UNIT.
4. DO NOT REMOVE SHORT CIRCUIT CONNECTOR OF X9A.

6. Capacity Tables

FXMQ48MFVJU

Cooling

Outdoor air temp	FWB							
FDB	62	66	70	74	78	82	86	90
	capacity							
	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h
67	13000	15900						
71	13000	15900	18300					
75	13000	15900	18300	23300				
79		15900	18300	22900				
83			18300	22900	37700			
87			17900	22600	37300	48300		
91			17900	22200	37000	48000	56200	
95				21900	36600	47600	55800	59600

Heating

Outdoor air temp	FWB								
FDB	19	23	27	31	35	39	43	51	55
	capacity								
	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h
22	32600	32600	-	-	-	-	-	-	-
32	-	-	30000	-	-	-	-	-	-
37	-	-	26600	26600	26600	-	-	-	-
42	-	-	-	-	21500	21500	21500	-	-
52	-	-	-	-	-	16800	16800	16800	-
57	-	-	-	-	-	-	12100	12100	12100

Notes:

1. The above capacities are based on the following conditions:
   Air discharge temperature setting: 64°F for cooling operation,
   77°F for heating (Factory setting).
   Equivalent piping length: 25ft.
   Level difference: 0ft.
2. The above capacities values are general average values which can be generated by each compressor operation level.
3. A value enclosed in [ ] means rated capacity.

FXMQ72MFVJU

Cooling

Outdoor air temp	FWB							
FDB	62	66	70	74	78	82	86	90
	capacity							
	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h
67	19600	24000	-	-	-	-	-	-
71	19600	24000	27600	-	-	-	-	-
75	19600	24000	27600	34700	-	-	-	-
79	-	24000	27300	34400	-	-	-	-
83	-	-	27300	34000	56500	-	-	-
87	-	-	27000	33700	55900	72600	-	-
91	-	-	27000	33100	55600	72000	84200	-
95	-	-	-	32700	54900	71300	83800	89300

Heating

Outdoor air temp	FWB								
FDB	19	23	27	31	35	39	43	51	55
	capacity								
	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h
22	50700	50700	-	-	-	-	-	-	-
32	-	-	47000	-	-	-	-	-	-
37	-	-	41200	41200	41200	-	-	-	-
42	-	-	-	-	33800	33800	33800	-	-
52	-	-	-	-	-	26300	26300	26300	-
57	-	-	-	-	-	-	18900	18900	18900

Notes:

1. The above capacities are based on the following conditions:
   Air discharge temperature setting: 64°F for cooling operation,
   77°F for heating (Factory setting).
   Equivalent piping length: 25ft.
   Level difference: 0ft.
2. The above capacities values are general average values which can be generated by each compressor operation level.
3. A value enclosed in [ ] means rated capacity.

FXMQ96MFVJU

Cooling

Outdoor air temp	FWB							
FDB	62	66	70	74	78	82	86	90
	capacity							
	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h
67	26000	31800						
71	26000	31800	36700					
75	26000	31800	36700	46200				
79		31800	36300	45900				
83			36300	45600	75400			
87			36000	44900	74700	96600		
91			36000	44200	74000	96000	112400	
95				43800	73300	95300	111700	119300

Heating

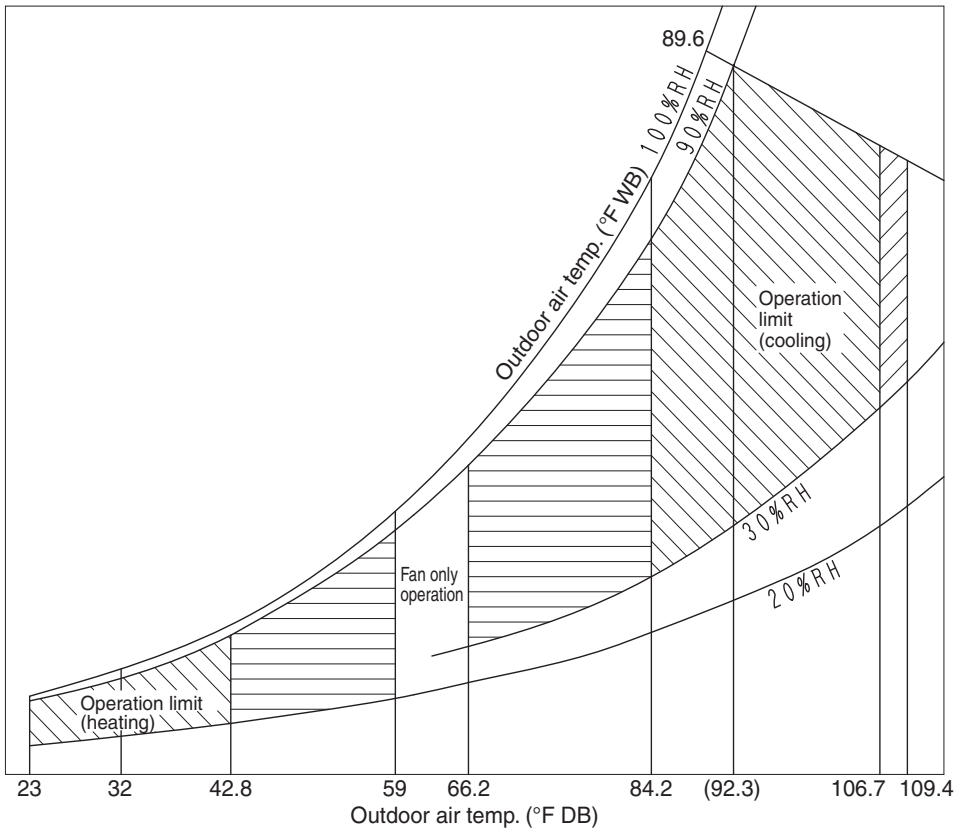
Outdoor air temp	FWB								
FDB	19	23	27	31	35	39	43	51	55
	capacity								
	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h	Btu/h
22	63700	63700							
32			59000						
37			51800	51800	51800				
42					42300	42300	42300		
52						33200	33200	33200	
57							23700	23700	23700

Notes:

1. The above capacities are based on the following conditions:
   Air discharge temperature setting: 64°F for cooling operation,
   77°F for heating (Factory setting).
   Equivalent piping length: 25ft.
   Level difference: 0ft.
2. The above capacities values are general average values which can be generated by each compressor operation level.
3. A value enclosed in [ ] means rated capacity.

7. Operation Limit

FXMQ48MFVJU



NOTE
1) These figures assume the following operating conditions. (Indoor and outdoor units)
Equivalent pipe length: 25ft.
Level difference: 0ft.

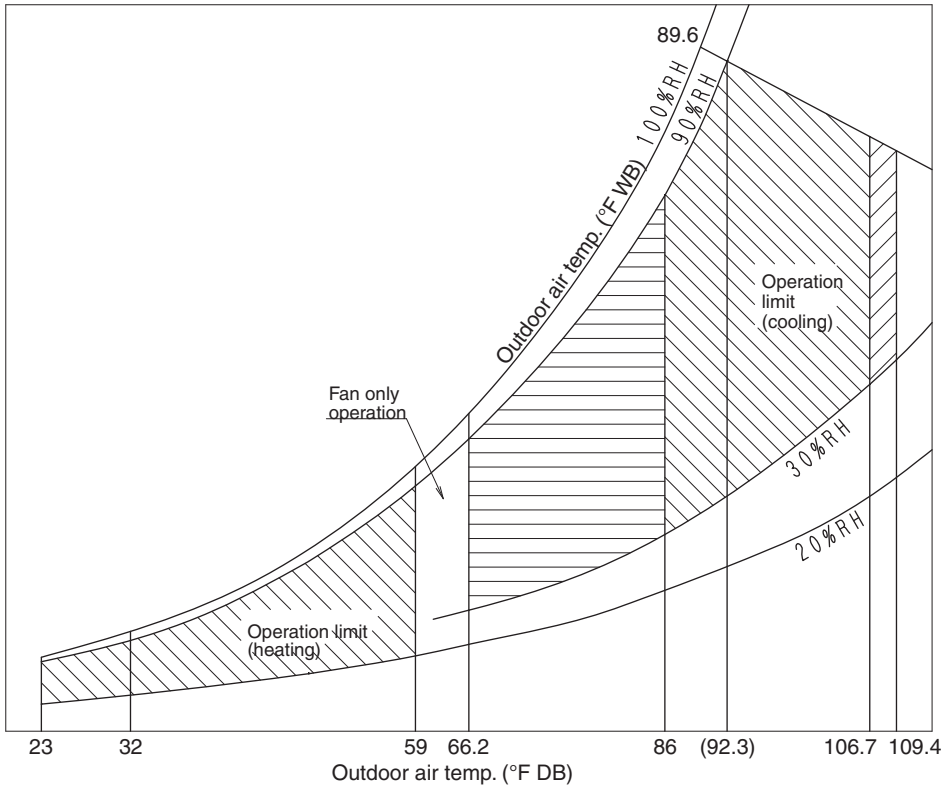
2) ▭ :The discharge air temperature may not match the temperature setting for too large outdoor-air processing capacity.
Thermostat OFF may be carried out.

3) ▨: The discharge air temperature may not match the temperature setting for too small outdoor-air processing capacity.

4) The system will not operate in fan mode when the outdoor-air temperature is 41°F or below.

C : 3D046312

FXMQ72MFVJU



NOTE
1) These figures assume the following operating conditions. (Indoor and outdoor units)
Equivalent pipe length: 25ft.
Level difference: 0ft.

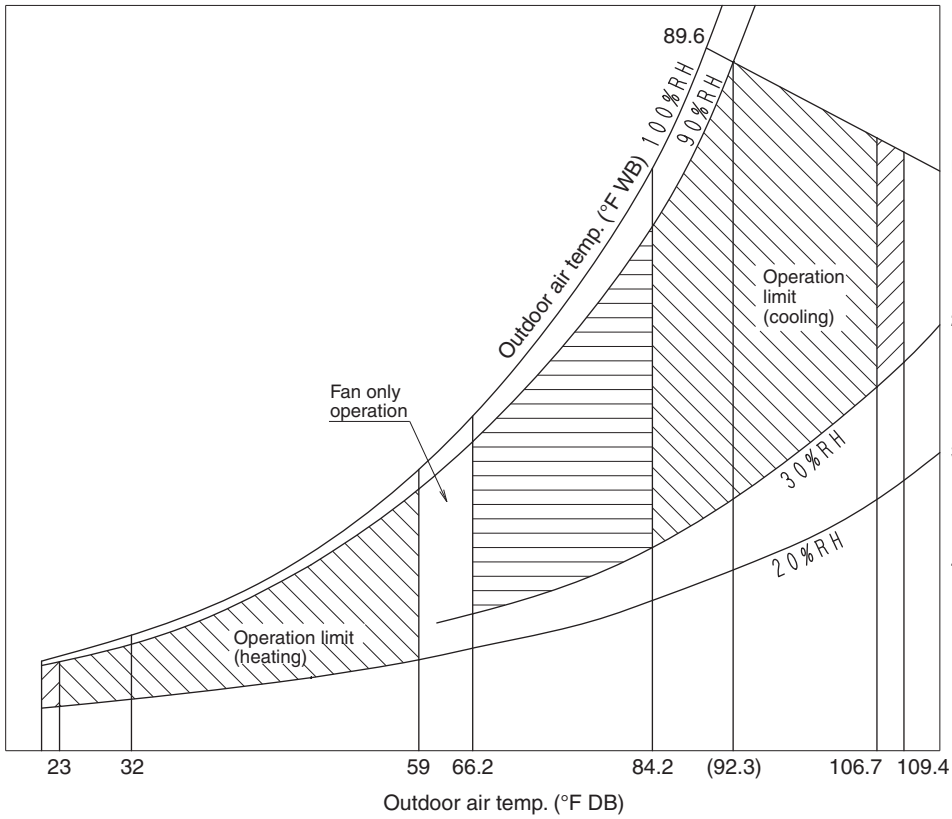
2) ▭ :The discharge air temperature may not match the temperature setting for too large outdoor-air processing capacity.
Thermostat OFF may be carried out.

3) ▨: The discharge air temperature may not match the temperature setting for too small outdoor-air processing capacity.

4) The system will not operate in fan mode when the outdoor-air temperature is 41°F or below.

C : 3D047750

FXMQ96MFVJU



NOTE
1) These figures assume the following operating conditions. (Indoor and outdoor units)
Equivalent pipe length: 25ft.
Level difference: 0ft.

2) ▭ :The discharge air temperature may not match the temperature setting for too large outdoor-air processing capacity.
Thermostat OFF may be carried out.

3) ▨: The discharge air temperature may not match the temperature setting for too small outdoor-air processing capacity.

4) The system will not operate in fan mode when the outdoor-air temperature is 41°F or below.

C: 3D046313

8. Electric Characteristics

Units					Power supply		IFM		Input(W)	
Model	Type	Hz	Volts	Voltage range	MCA	MOP	KW	FLA	Cooling	Heating
FXMQ48MF	VJ	60	208-230	MAX. 253 Min. 187	2.1	15	0.380	1.7	359	359
FXMQ72MF					3.6	15	0.380	2.9	548	548
FXMQ96MF					4.1	15	0.380	3.3	638	638

Symbols:

MCA : Min. Circuit Amps (A)
MOP : Max. Overcurrent Protection (A) See Note 5
KW : Fan Motor Rated Output(kW)
FLA : Full Load Amps(A)
IFM : Indoor Fan Motor

Note:

1. Voltage range

   Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.

2. Maximum allowable voltage unbalance between phases is 2%.

3. MCA / MOP

   MCA = 1.25 X FLA

   MOP ≦ 4 X FLA

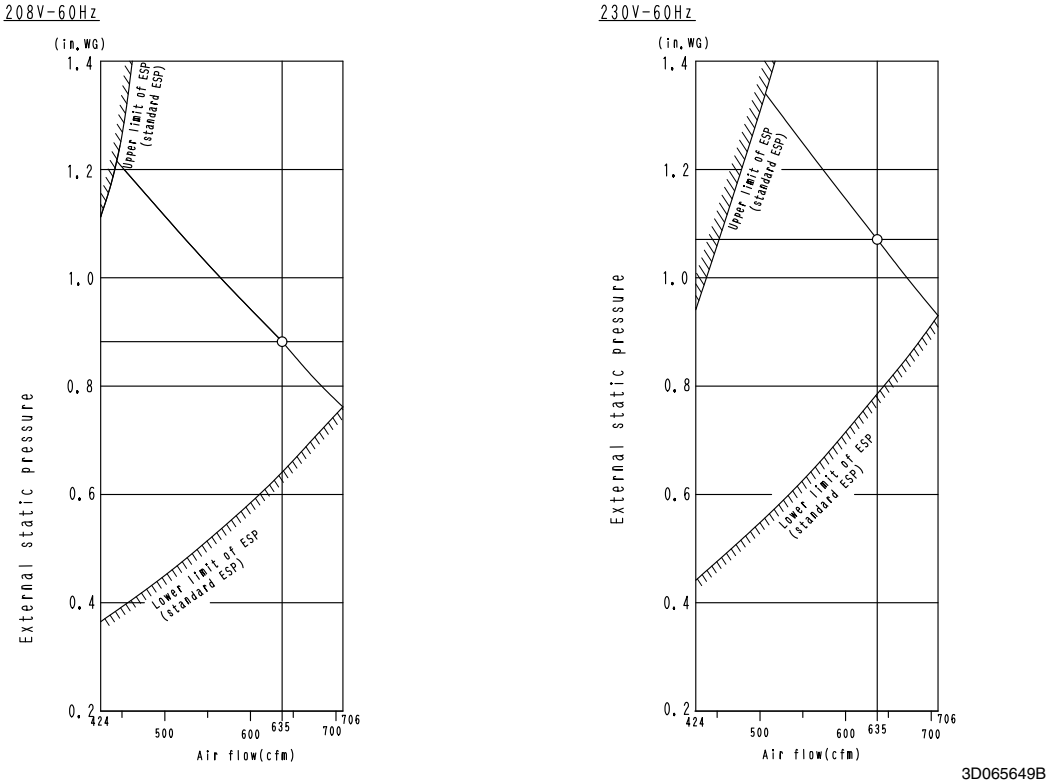
   (Next lower standard fuse rating. Min. 15A)

4. Select wire size based on the MCA.

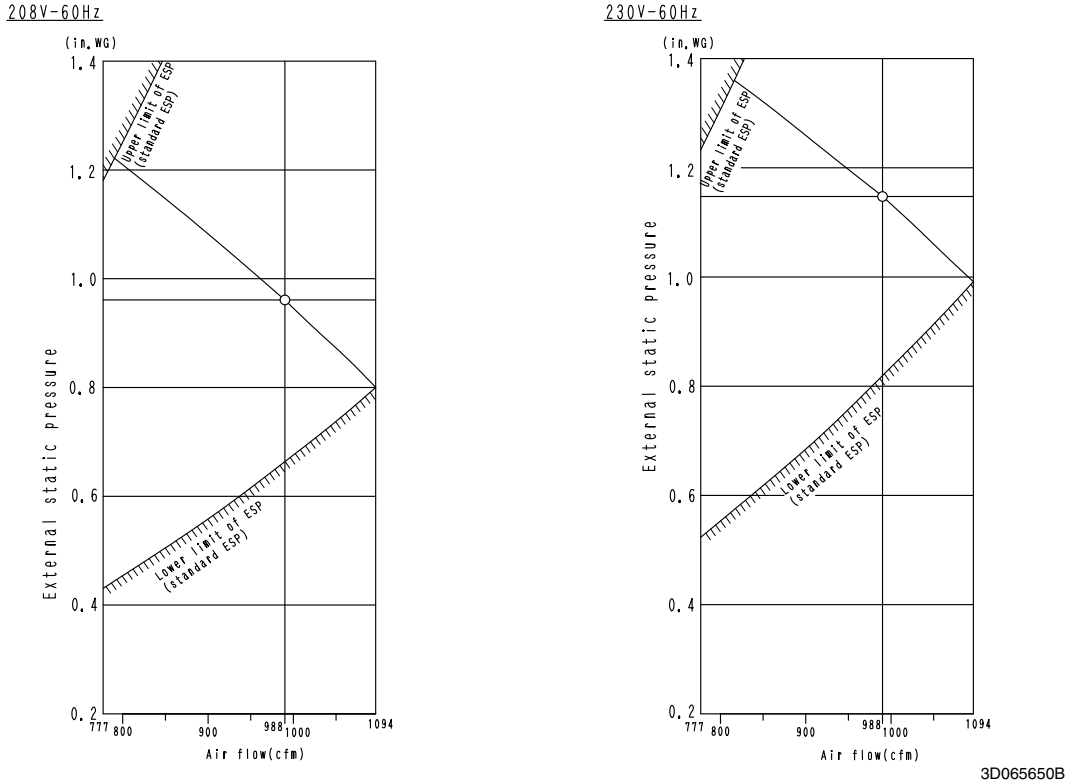
5. Instead of fuse, use Circuit Breaker.

9. Fan Performances

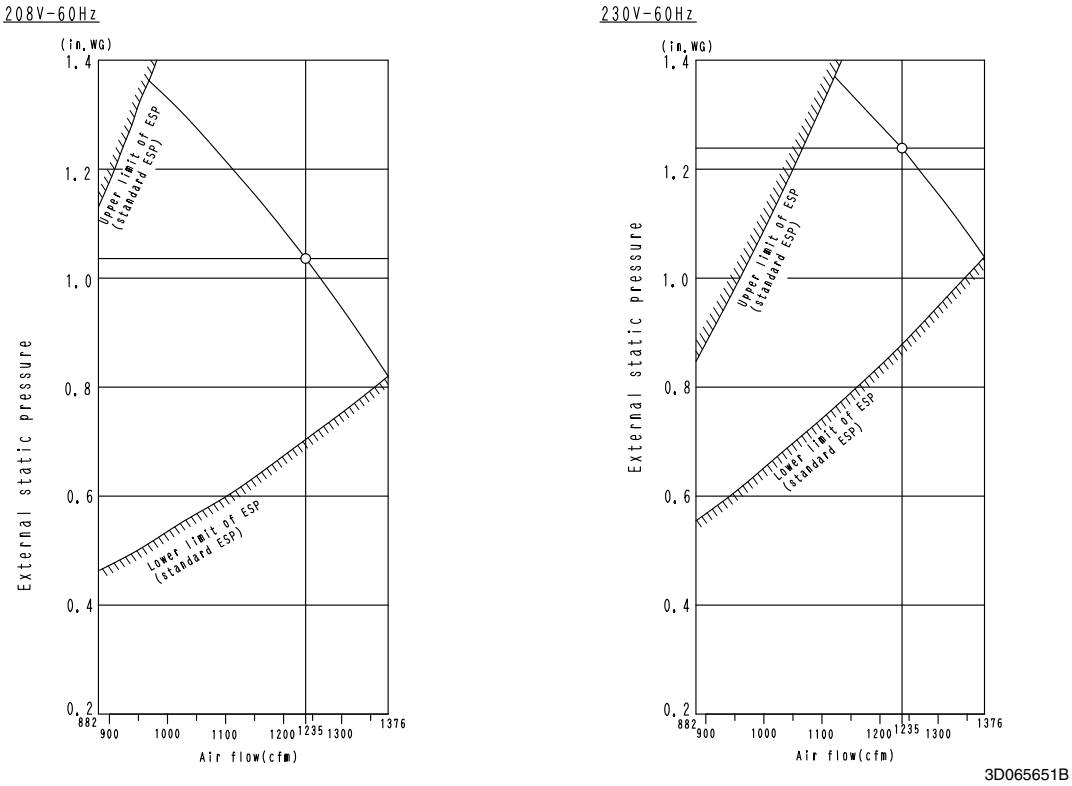
FXMQ48MFVJU



FXMQ72MFVJU



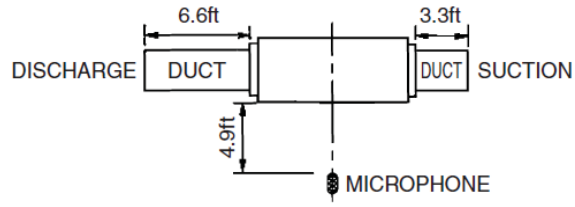
FXMQ96MFVJU



10. Sound Levels (Reference)

10.1 Overall

■ **Location of microphone**



Notes:

1. The operating conditions are assumed to be standard (JIS conditions). Power source 208-230V, 60hz.
2. The operating values were obtained in an anechoic chamber (conversion values).
1. Sound levels will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipment is installed.

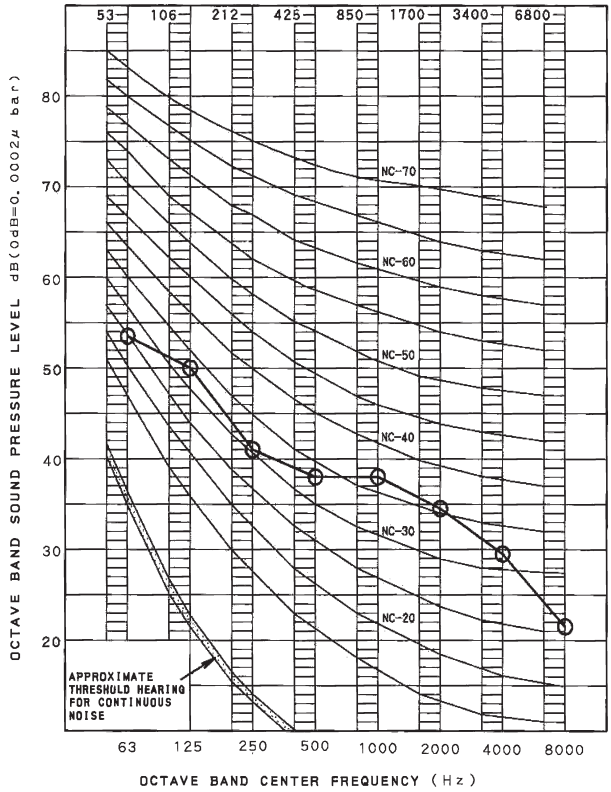
dBA

Model	208-230V, 60Hz
FXMQ48MFVJU	43
FXMQ72MFVJU	48
FXMQ96MFVJU	48

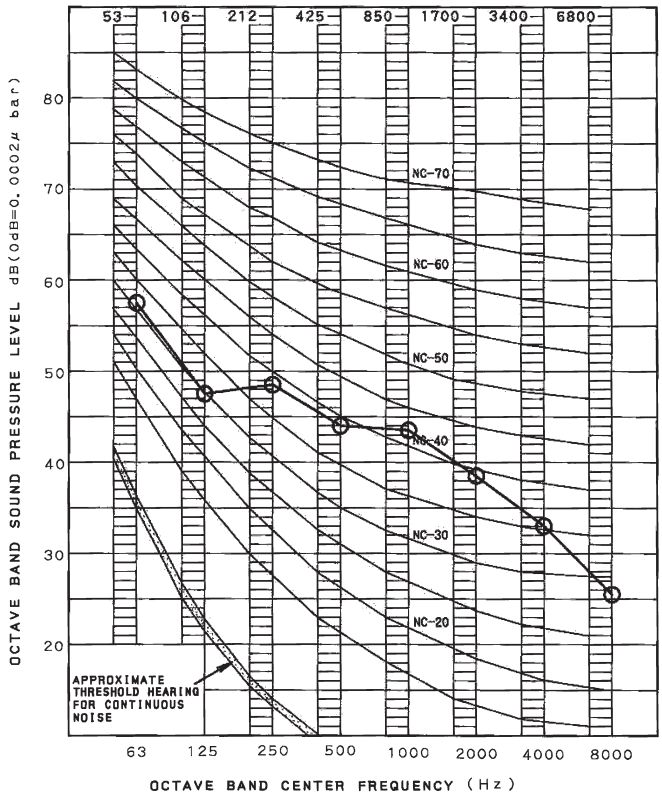
10.2 Octave Band Level

○——○ 208V-230V, 60Hz

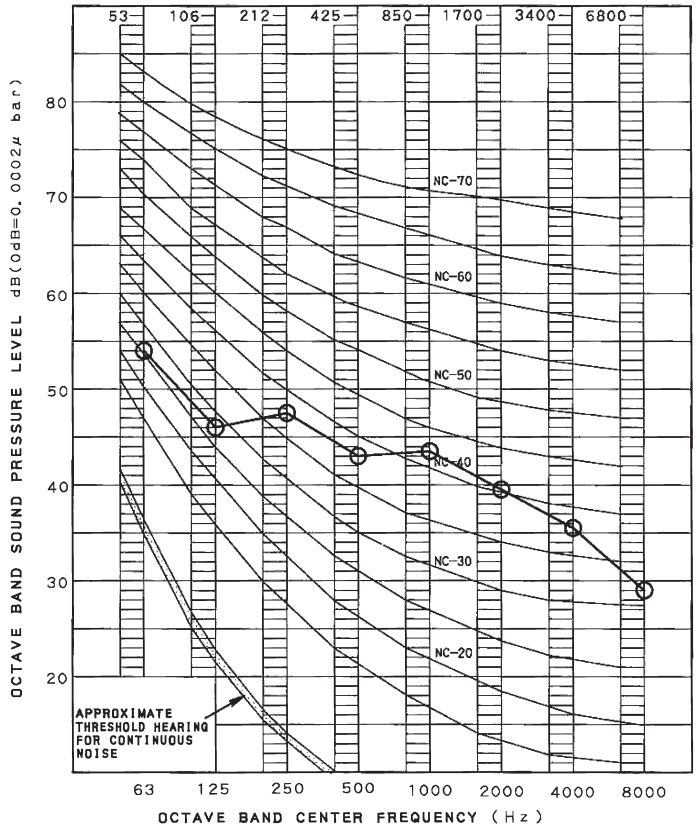
FXMQ48MFVJU



FXMQ72MFVJU



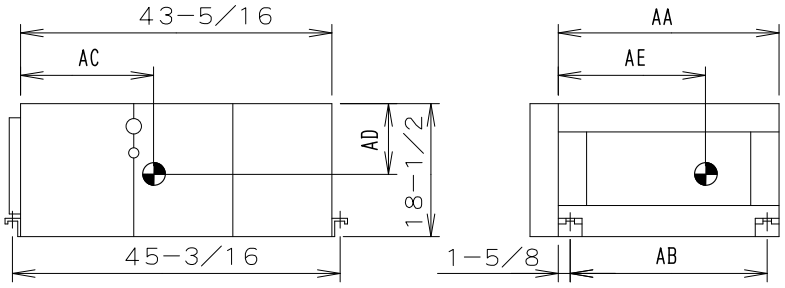
FXMQ96MFVJU



11. Installation

Center of Gravity
FXMQ48MFVJU
FXMQ72MFVJU
FXMQ96MFVJU

Unit (in.)



Model	Product Mass	AA	AB	AC	AD	AE
FXMQ48MFVJU	190Lbs	30-11/16	27-3/8	23-5/8	9-13/16	13
FXMQ72MFVJU	271Lbs	54-5/16	51	22-7/16	9-13/16	23-5/8
FXMQ96MFVJU	271Lbs	54-9/16	51	22-7/16	9-13/16	23-5/8

4D065444

Service Space
Selecting Installation Site
When it may exceed 86°F and RH80% in the ceiling or fresh air is inducted into the ceiling, an additional insulation (Thickness 3/8in. or more of glasswool or polyethylene form) is required.

1. Select an installation site where the following conditions are fulfilled and that meets with your customer's approval.

- Where is resistible against weight of the unit.
- In the upper space (including the back of the ceiling) of the unit where there is no possible dripping of water from the refrigerant pipe, drain pipe, water pipe, etc.
- Where optimum air distribution can be ensured.
- Where nothing blocks the air passage.
- Where condensate can be properly drained.
- If supporting structural members are not strong enough to take the unit's weight, the unit could fall out of place and cause serious injury.
- Where the false ceiling is not noticeably on an incline.
- Where there is no risk of combustible gas leakage.
- Where sufficient clearance for maintenance and service can be ensured. **(Refer to Fig. 1)**
- Where the total piping length involving indoor unit and outdoor unit is below the allowable piping length. (See the installation mamual included with the outdoor unit for "REFRIGERANT PIPING.")
- Locations where a maintenance hole can be installed. **(Refer to Fig. 2)**

CAUTION

- Install the indoor and outdoor units, power supply wires and transmission wires at least 3.3ft. away from televisions or radios in order to prevent image interference or noise.
  (Depending on the radio waves, a distance of 3.3ft. may not be sufficient enough to eliminate the noise.)

2. Use suspension bolts for installation. Check whether the ceiling is strong enough to support the weight of the unit or not. If there is a risk, reinforce the ceiling before installing the unit.

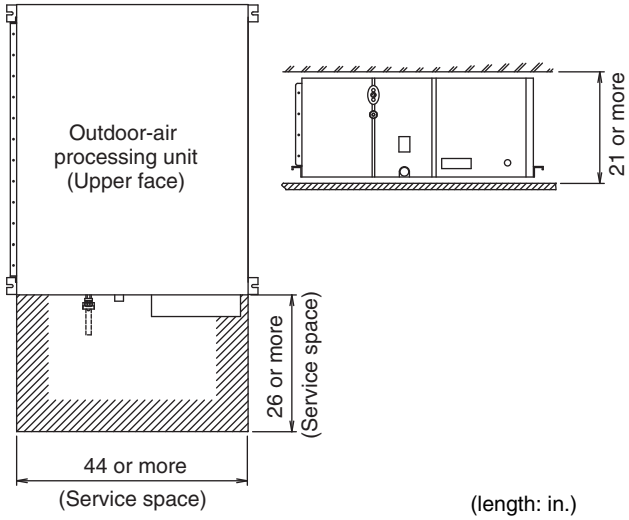
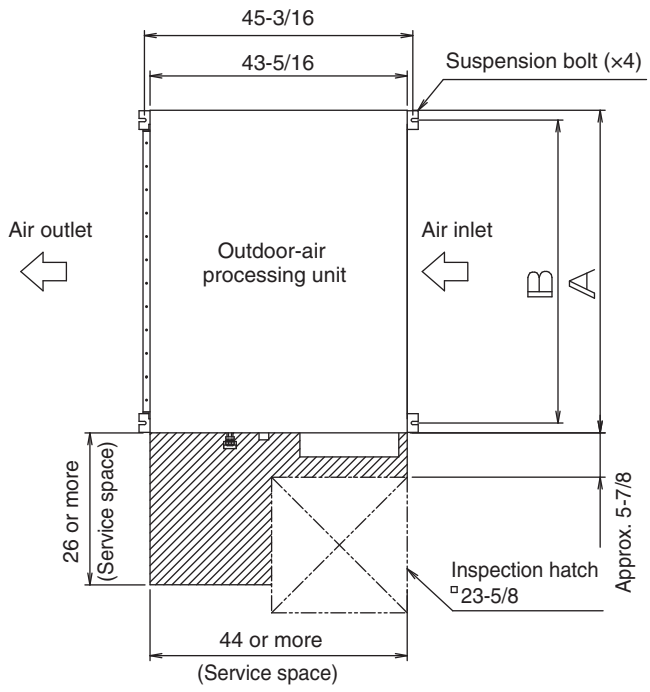


Fig. 1

Bolt Pitch

Preparations Before Installation

1. Relative positions of the unit and suspension bolt. **(Refer to Fig. 2)**



Unit	A	B
FXMQ48MFVJU	29-9/32	27
FXMQ72·96MFVJU	50-3/8	51

Fig. 2 (length: in.)

2. Install a canvas duct to the air outlet and air inlet so that vibration from the unit isn't transmitted to the duct or ceiling. You should also apply acoustic (insulation material) to the inside of the duct, and vibration insulation rubber to the suspension bolts.
3. Open the installation hole. (Pre-set ceilings)

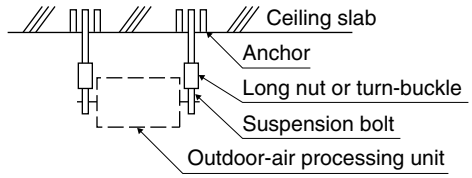
■ Once the installation hole is opened in the ceiling where the unit is to be installed, pass refrigerant and drain pipe and the power supply, transmission, and remote controller wire to the unit's pipe and wire connection ports.

■ After opening the ceiling hole, it might be necessary to reinforce the ceiling frame to prevent shaking or to maintain the levelness of the ceiling.
Consult an architect or carpenter for details.

4. Install suspension bolts.
(Use bolts of 3/8in. diameter.)

■ Install the unit where supporting structures are strong enough to bear the unit's weight. Use embedded inserts or anchor bolts with new buildings and hole-in-anchors with old buildings. Adjust the distance to the ceiling beforehand.

〈Installation example〉



Note) All the above parts are field supplied.

Fig. 3

Installation

Unit Installation

Installing optional accessories before installing the unit is easier. See the installation manuals included with the optional accessories.

As for the parts to be used for installation work, be sure to use the provided accessories and specified parts designated by our company.

1. Temporarily install the unit.

■ Mount the hanger brackets to suspension bolts. Secure the hanger brackets on the top and the bottom with nuts <1>~<3> (M10, field supplied) and washers (M10, accessory 10)).

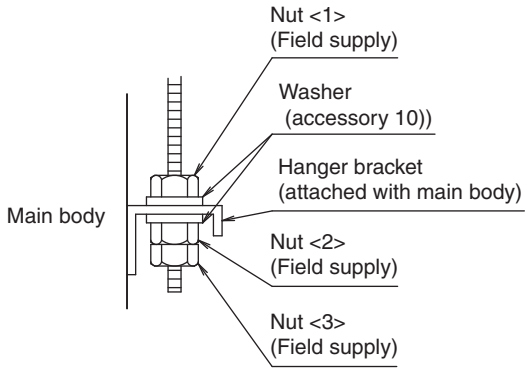


Fig. 4

2. Adjust the height of the unit with the nut <2>.
   (Refer to Fig. 4)
3. Make sure the unit is level.

■ Use a level or a vinyl tube filled with water to make sure that the unit is level and that the tilt (downward slope) to the drain socket and air inlet side is within 1°.
(Refer to Fig. 5)

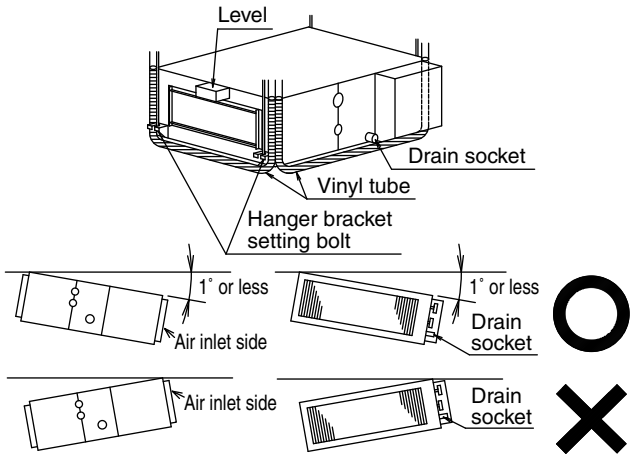


Fig. 5

4. Tighten both upper and lower nuts <1>, <3>.
   (Refer to Fig. 4)
5. Insulate the four hanger brackets with the sealing pad. (accessory 6)) Insulate the hanger brackets so that the surface and edges of the hanger brackets cannot be seen. **(Refer to Fig. 6)**

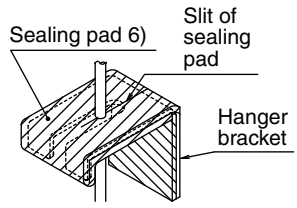


Fig. 6

CAUTION

Setting the unit at an angle opposite to the drain socket or air inlet side might cause leaks.

Refrigerant Piping Work

<For refrigerant piping between outdoor unit and this unit, see the installation manual attached to the outdoor unit. (Refer to Table 1)>

<Execute heat insulation work completely on both sides of the gas pipe and the liquid pipe. Otherwise, a water leakage can result sometimes.>

<Be sure to use insulation that is designed for use with HVAC Systems.>

<Improve the insulation on the refrigerant piping depending on the installation environment. If the insulation is not sufficient, condensate may form on the surface of the insulation.>

<Before refrigerant piping work, check which type of refrigerant is used. Proper operation is not possible if the types of refrigerant are not the same.>

CAUTION

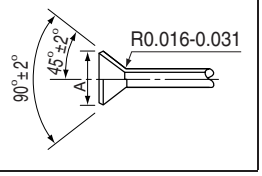
- **Use a pipe cutter and flare suitable for the type of refrigerant.**
- **Apply ester oil or ether oil inside the flare portions before connecting. (Refer to Fig. 7)**
- **To prevent dust, moisture or other foreign matter from infiltrating the tube, either pinch the end or cover it with tape.**
- **Do not allow anything other than the designated refrigerant to get mixed into the refrigerant circuit, such as ir, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.**

- TThe outdoor unit is charged with refrigerant.
- Be sure to use both a spanner and torque wrench together, as shown in the drawing, when connecting or disconnecting pipes to/from the unit. **(Refer to Fig. 8)**
- Refer to Table 2 for the dimensions of flare nut spaces.
- When connecting the flare nut, coat the flare section inside with ester oil or ether oil, rotate three or four times first, then screw in. **(Refer to Fig. 7)**
- Refer to Table 2 for tightening torque.

Table 1

Unit to be connected	Gas pipe diameter	Liquid pipe diameter
FXMQ48MFVJU	ϕ 5/8	ϕ 3/8
FXMQ72MFVJU	ϕ 3/4 Use attached pipe.	
FXMQ96MFVJU	ϕ 7/8 Use attached pipe.	

Table 2

Pipe size	Tightening torque (ft·lbf)	Flare dimensions A (in.)	Flare shape (in.)
ϕ 3/8”	24.1 – 29.4	0.504 – 0.520	
ϕ 5/8”	45.6 – 55.6	0.760 – 0.776	

Note:

Use the flare nuts attached with the unit.

CAUTION

Over-tightening may damage the flare and cause a refrigerant leakage.

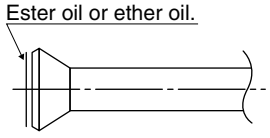


Fig. 7

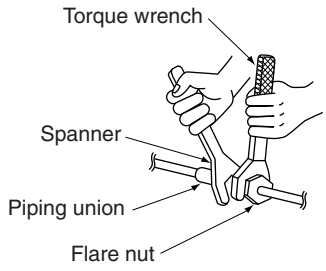


Fig. 8

Not recommended but in case of emergency

You must use a torque wrench but if you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.

After the work is finished, make sure to check that there is no gas leak.

When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases. From that position, further tighten the flare nut the angle shown below:

Table 3

Pipe size	Further tightening angle	Recommended arm length of tool
ϕ 3/8"	60 to 90 degrees	Approx. 7-7/8in.
ϕ 5/8"	30 to 60 degrees	Approx. 11-13/16in.

- After checking the pipe-connection for gas leakage, be sure to insulate the liquid and gas pipe, referring to Fig.9, 10 and the following points.

FXMQ48MFVJU

1. Insulate the liquid and gas pipes using the insulation for fitting (accessory 3), 4)) (Tighten both edges with clamping material.)
2. Make sure the insulation for fitting (accessory 4)) on the gas pipe has its seams facing up.
3. For the gas pipe, wrap the sealing pad (accessory 5)) around the insulation for fitting (accessory 4)) (flare nut part)

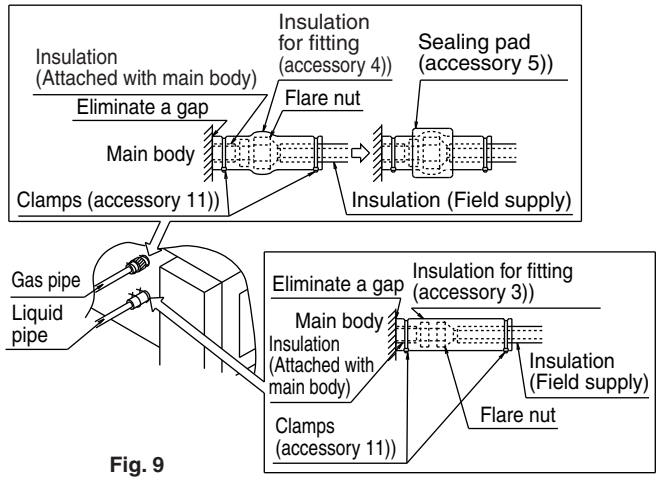


Fig. 9

FXMQ72 · 96MFVJU

1. Insulate the liquid pipe using the insulation for fitting (accessory 3)). (Tighten both edges with clamping material.)
2. Use the attached pipe (accessory 1)) for connecting the gas pipes and make sure to insulate the gas pipes (using field supplied insulation) all the way to the base where they connect to the unit.
3. The turning torque of the hexagon head bolts (accessory 8)) to connect the attached pipe (accessory 1)) to the unit is 15.9 - 21.3ft/lbf.

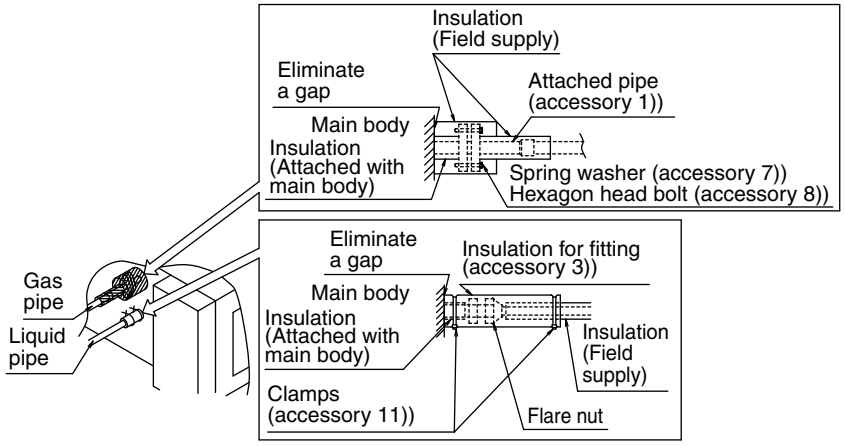


Fig. 10

CAUTION

Be sure to insulate any field pipe all the way to the pipe connection inside the unit. Any exposed pipe may cause cndensate or burns if touched.

CAUTION

CAUTION TO BE TAKEN WHEN BRAZING REFRIGERANT PIPING

Do not use flux when brazing refrigerant piping. Therefore, use the phosphor copper brazing filler metal (BCuP-2/ B-Cu93P-710/795) which does not require flux.

(Flux has extremely harmful infulence on refrigerant piping systems. For instance, if the chlorine based flux is used, it will cause pipe corrosion or, in particular, if the flux contains fluorine, it will damage the refrigerant oil.)

- Before brazing local refrigerant piping, nitrogen gas shall be blown through the piping to expel air from the piping. If your brazing is done without nitrogen gas blowing, a large amount of oxide film develops inside the piping, and could cause system malfunction.
- When brazing the refrigerant piping, only begin brazing after having carried out nitrogen substitution or while inserting nitrogen into the refrigerant piping. Once this is done, connect the unit with a flared or a flanged connection.
- Nitrogen should be set to 2.90PSI with a pressure-reducing valve if brazing while inserting nitrogen into the piping.

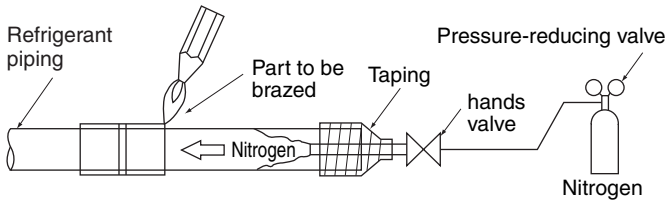


Fig. 11

Drain Piping Work

<<Rig the drain pipe as shown below and take measures against condensate. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.>>
<<Insulate the drain pipes inside the building and the drain sockets.>>

1. Carry out the drain piping.

- The drain pipe should be short with a downward slope lower than 1/100 and should prevent air pockets from forming.
- The diameter of the pipe is the same as that of the connecting pipe (PS1B), and should be kept equal to or greater than that of the connecting pipe.

Note:

- If converging multiple drain pipes, install according to the procedure shown below. (Select an appropriate central drain pipe thickness for the units they will be connected to.)

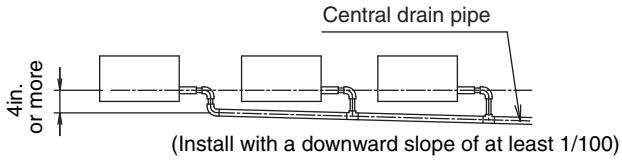


Fig. 12

2. After piping work is finished, check drainage flow smoothly.

- Open the water supply port, add approximately 61in^3. of water slowly into the drain pan and check drainage flow. **(Refer to Fig. 13)**
  Pools of drainage can cause the drain pipes to clog.

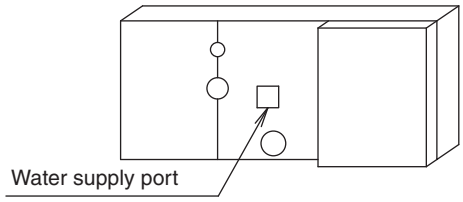


Fig. 13

CAUTION

- Do not connect the drain pipe directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the unit through the drain pipes and corrode the heat exchanger.

Electric Wiring Work

GENERAL INSTRUCTIONS

- wAll field supplied parts and materials and electric works must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer to also “WIRING DIAGRAM” label attached to the electrical components box lid.
- For remote controller wiring details, refer to the installation manual attached to the remote controller.
- All wiring must be performed by an authorized electrician.
- This system consists of multiple indoor units. Mark each indoor unit as unit A, unit B..., and be sure the terminal board wiring to the outdoor unit is properly matched. If wiring and piping between the outdoor unit and the indoor unit are mismatched, the system may cause a malfunction.
- A ground fault circuit interrupter capable of shutting down power supply to the entire system must be installed.
- Refer to the installation manual attached to the outdoor unit for the size of power supply wire connected to the outdoor unit, the capacity of the ground fault circuit interrupter and switch, and wire instructions.
- Be sure to ground the unit.
- Do not connect the ground wire to gas and water pipes, lightning rods, or telephone ground wires.
  - Gas pipes : might cause explosions or fire if gas leaks.
  - Water pipes : no grounding effect if hard vinyl piping is used.
  - Telephone ground wires or lightning rods : might cause abnormally high electric potential in the ground during lightning.

ELECTRICAL CHARACTERISTICS

Units				Power supply		Fan motor	
Model	Hz	Volts	Voltage range	MCA	MOP	W	FLA
FXMQ48MFVJU	60	208-230	Max. 253 Min. 187	2.1	15	380	1.7
FXMQ72MFVJU				3.6	15	380	2.9
FXMQ96MFVJU				4.1	15	380	3.3

MCA: Min. Circuit Amps (A); MOP: Max. Overcurrent Protection (A)
W: Fan Motor Rated Output (W); FLA: Full Load Amps (A)

SPECIFICATIONS FOR FIELD SUPPLIED FUSES AND WIRE

Model	Power supply wire		Remote controller wire Transmission wire	
	Breaker	Size	Wire	Size
FXMQ48MFVJU	15A	Size must comply with local codes.	2- conductor, stranded non-shielded copper cable/PVC or vinyl jacket	AWG 18-2
FXMQ72MFVJU				
FXMQ96MFVJU				

Notes:

1. Select the particular size of electrical wire for power supply wire in accordance with the standards of the given nation and region.
2. Allowable length of transmission wire between indoor/outdoor units and between the indoor unit and the remote controller is as follows.
   (1) Outdoor unit – Indoor unit:
   Max. 3280ft. (Total wiring length: 6560ft.)
   (2) Indoor unit – Remote controller:
   Max. 1640ft.
   (3) Max. branches No. of branches :16
3. Up to 16 branches are possible for unit-to unit cabling. No branch is allowed after first branch. **(Refer to Fig. 15)**

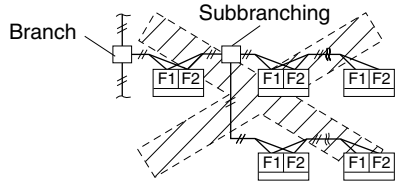


Fig. 15

Wiring Example And How To Set The Remote Controller

HOW TO CONNECT WIRINGS (Remove the electric parts box lid and wire as shown in the figure below.)

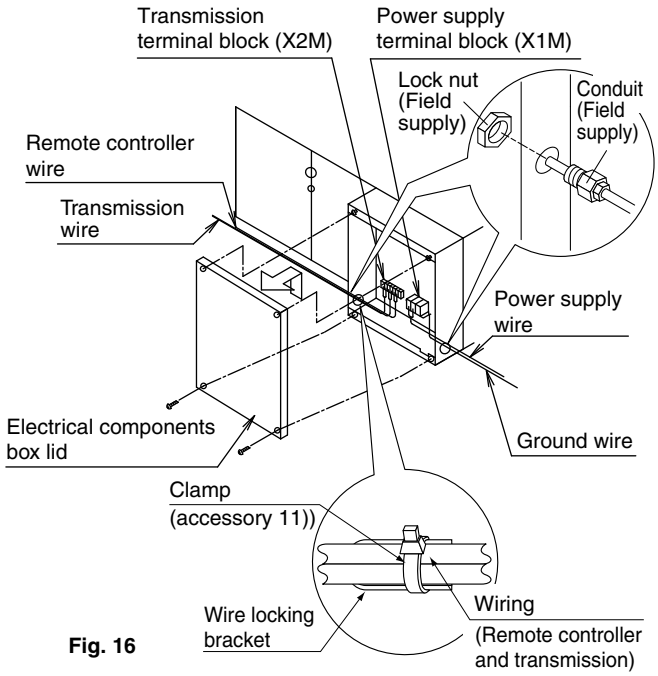


Fig. 16

- **Power supply wire, Ground wire (Refer to Fig. 17)**
  Connect the wire to L1 and L2 on the power supply terminal block (X1M). Also, connect the ground wire to the ground terminal. Take the power supply wire and the ground wire into the unit through the wiring through hole <1>, and firmly secure them together using the clamp (accessory 11)).
- **Transmission wire, Remote controller wire (Refer to Fig. 17)**
  Connect the transmission wire to F1 and F2 on the transmission terminal block (X2M). Connect the remote controller wire to P1 and P2 on the transmission terminal block (X2M). Take them into the unit through the wiring through hole <2>, and firmly secure the wires using the clamp (accessory 11)).

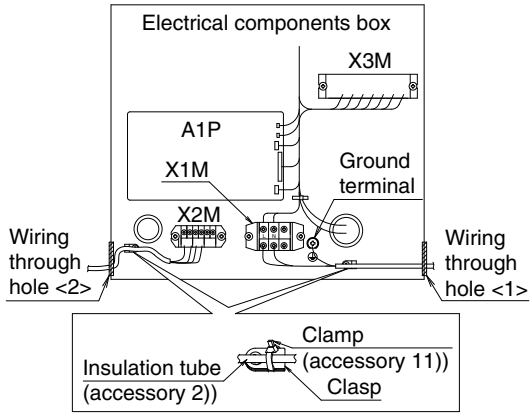


Fig. 17

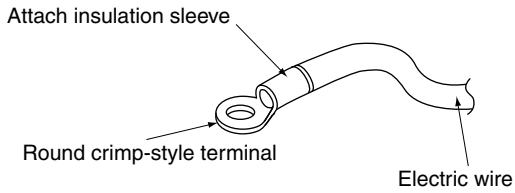
CAUTION

- Wire the electrical components box so that the wiring is at least 3/8in. above the bottom of the electrical components box.
- Be sure to attach the sealing material or putty (field supplied) to the wiring through holes to prevent the infiltration of water as well as any insects and other small creatures from outside. Otherwise a short-circuit may occur inside the electrical components box.

- When clamping the wires, be sure no pressure is applied to the wire connections by using the included clamping material to make appropriate clamps. Also, when wiring, make sure the lid on the electrical components box fits snugly by arranging the wires neatly and attaching the electrical components box lid firmly. When attaching the electrical components box lid, make sure no wires get caught in the edges. Pass wire through the wiring through holes to prevent damage to them.
- Make sure the remote controller wire, the transmission wire and power supply wire, ground wire do not pass through the same locations outside of the unit, separating them by at least 2in., otherwise electrical noise (external static) could cause mistaken operation or breakage.

PRECAUTIONS

1. Use round crimp-style terminals for connecting wires to the power supply terminal block.
   If unavailable, observe the following points when wiring.w
- Do not connect wires of different gauge to the same power supply terminal.
  (Looseness in the connection may cause overheating.)
- Use the specified electric wire. Connect the wire securely to the terminal. Lock the wire down without applying excessive force to the terminal.



2. Tightening torque for the terminal screws.
- Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
- If the terminal screws are tightened too hard, screws might be damaged.
- Refer to the table below for the tightening torque of the terminal screws.

Terminal	Size	Tightening torque
Transmission terminal block (X2M)	M3.5	0.58 – 0.72 ft·lbf
Power supply terminal block (X1M)	M4	0.87 – 1.06 ft·lbf
Ground terminal	M5	2.23 – 3.01 ft·lbf

3. Do not connect wires of different gauge to the same ground terminal. Looseness in the connection may deteriorate protection.
4. Outside of the unit, keep transmission wire and remote controller wire at least 2in. away from power supply wire and ground wire. The unit may malfunction if subjected to electrical noise (external static).
5. For remote controller wiring, refer to the “INSTALLATION MANUAL OF REMOTE CONTROLLER” attached to the remote controller.
6. Never connect power supply wire to the transmission terminal block (X2M). A mistake of the sort could damage the entire system.
7. Use only specified wire and tightly connect wires to terminals. Be careful wires do not place external stress on terminals. Keep wiring in neat order and so as not to obstruct other equipment such as the electrical components box lid. Make sure the lid closes tight. Incomplete connections could result in overheating, and in worse case, electric shock or fire.

WIRING EXAMPLE

Fit the power supply wiring of each unit with a switch and fuse as shown in the drawing.

COMPLETE SYSTEM EXAMPLE (3 SYSTEMS)

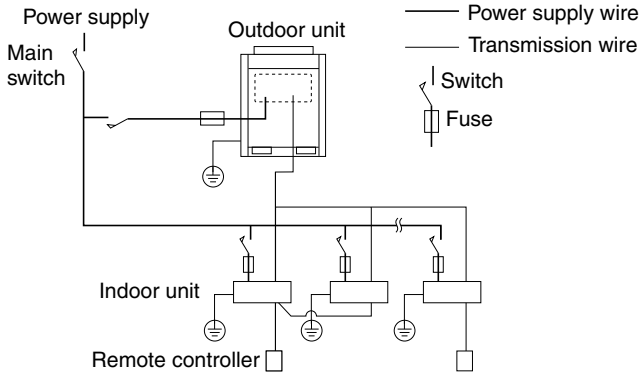


Fig. 18

1. When using 1 remote controller for 1 indoor unit. (Normal operation)

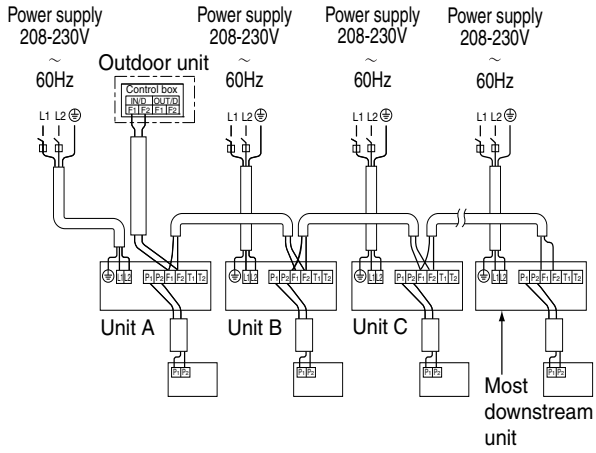


Fig. 19

2. For group control or control by 2 remote controllers

Note: It is not necessary to designate indoor unit address when using group control. The address is automatically set when power is activated.

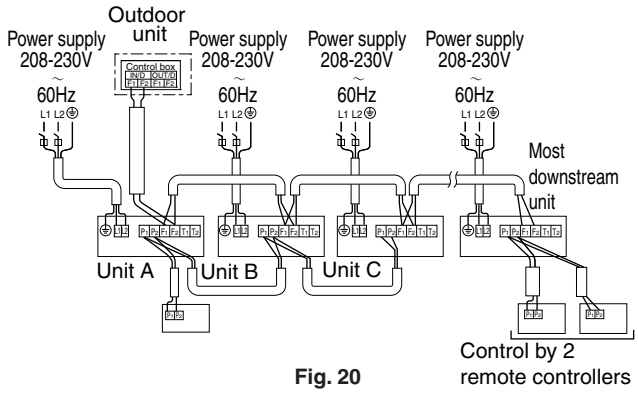
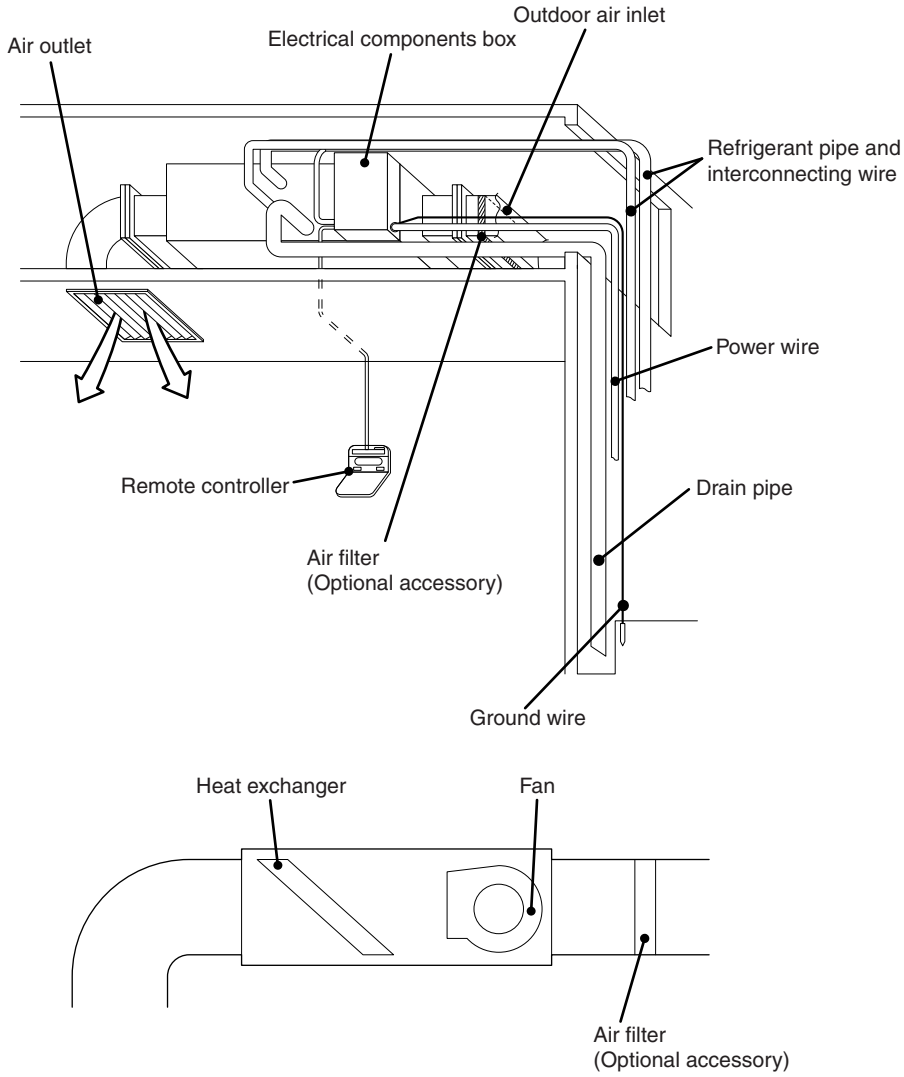


Fig. 20

[PRECAUTIONS]

1. A single switch can be used to supply power to units on the same system. However, branch switches and branch ground fault circuit interrupters must be selected carefully.

Name of Each Part



Operation Range

Use the system in the following temperature and humidity ranges for safe and effective operation.

COOLING [°F]

OUTDOOR TEMPERATURE		
TEMPERATURE		HUMIDITY
DB	66 to 109 (Note)	30% to 90% (Long time operation in a humidity over 90% may cause condensation on the unit and dripping.)
WB	89 or below	

DB: Dry bulb temperature
WB: Wet bulb temperature

Notes:

- The FAN OPERATION mode is set automatically for DB temperature of 66ºF and below.
- Do not use the COOLING OPERATION or FAN OPERATION modes when outdoor tWemperature is 41ºF or lower. The unit will stop running to protect itself against cold damage. In such case, set the AUTOMATIC OPERATION or HEATING OPERATION mode.

HEATING [°F]

OUTDOOR TEMPERATURE	
DB	23 to 59 (Note)

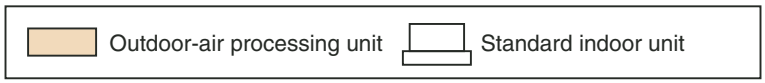
DB: Dry Bulb Temperature

Note:

The FAN OPERATION mode is set automatically for DB temperature of 59ºF and above.

If the temperature or the humidity is beyond these conditions, safety devices may work and the unit may not operate.

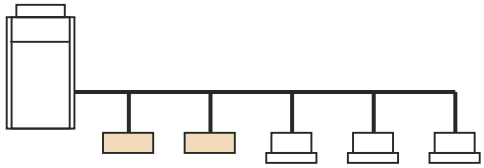
■ Restrictions in case of mixture connection with standard indoor units



1. Restrictions of the refrigerant piping system

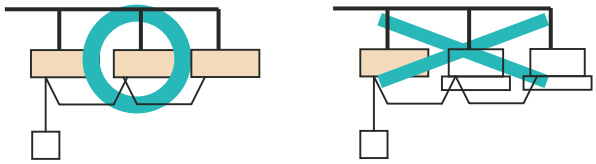
1) The total capacity of standard indoor units + Outdoor-air processing units should be **50-100%** of Outdoor unit capacity. (In case of using only outdoor-air processing units, it is same.)

2) The capacity of outdoor-air processing units should be less than **30%** of the outdoor unit capacity.

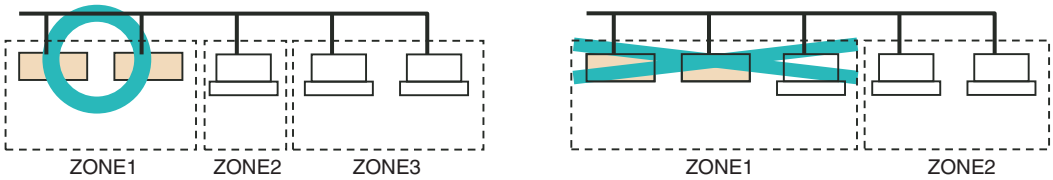


2. Restrictions of the control system

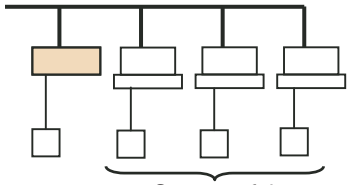
1) In case of wiring is mixed with standard indoor units, group control by remote controller is not available, because the setting temperature are different.



2) When using the central remote controller, mixture of indoor units & Outdoor-air Processing units in the same zone is not available, because the setting temperature are different.



3) Don't set the R/C of Outdoor-air processing unit as the master remote controller.



Set one of these remote controllers as the master remote controller.

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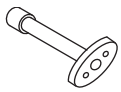
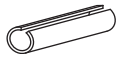
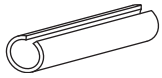
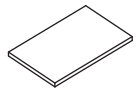
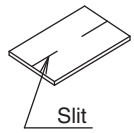
12. Accessories

Standard Accessories

Name	Attached pipe	Insulation tube	Insulation for fitting	Sealing pad	Sealing pad	Others
Quantity	1	2 pcs.	1 each	1	4	
Shape	1)  (Only FXMQ72·96MFVJU)	2) 	3) for liquid pipe  Inside diameter ϕ1 4) for gas pipe  Inside diameter ϕ1-1/4 (Only FXMQ48MFVJU)	5)  (Only FXMQ48MFVJU)	6) 	7) Spring washer (M10) (2 pcs. only for FXMQ72·96MFVJU) 8) Hexagon head bolt (M10 × 1-9/16) (2 pcs. only for FXMQ72·96MFVJU) 9) Screws for flange connection (M5) (16 pcs. for FXMQ48MFVJU, 28 pcs. for FXMQ72·96MFVJU) 10) Washers (8 pcs.) 11) Clamps (10 pcs.) 12) Installation manual 13) Operation manual

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Optional Accessories (For Unit)

No.	Item	Type	FXMQ48MFVJU	FXMQ72MFVJU	FXMQ96MFVJU
1	High efficiency filter	65%	KAFJ372L140	KAFJ372L280	
		90%	KAFJ373L140	KAFJ373L280	
2	Filter chamber ★1		KDJ3705L140	KDJ3705L280	
3	Long life replacement filter		KAFJ371L140	KAFJ371L280	

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Notes:

★1.Filter chamber has a suction-type flange. (Main unit does not have.)

- Dimensions and weight of the equipment may vary depending on the options used.
- Some options may not be usable due to the equipment installation conditions, so please confirm prior to ordering.
- Some options may not be used in combination.
- Operating sound may increase somewhat depending on the options used.

Optional Accessories (For Operation Controls)

No.	Item	Type	FXMQ-MFVJU
1	Remote controller	Wireless	BRC4C82
		Wired	BRC1D71
2	Navigation remote controller (Wired remote controller)		BRC1E71
3	Remote sensor		KRCS01-1B
4	Central remote controller		DCS302C71
4-1	Electrical box		KJB311AA
5	Unified on/off controller		DCS301C71
5-1	Electrical box		KJB212AA
6	Schedule timer		DST301B61
7	External control adaptor for outdoor unit		DTA104A61
8	D3-NET Expander adaptor		DTA109A51
9	Adaptor for wiring		KRP1B71
10	Wiring adaptor for electrical appendices (2)		KRP4A71

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Note:

1. Electrical box (No.4-1/5-1) is required for controller (No.4/5).

Warning

- Daikin Industries, Ltd.'s products are manufactured for export to numerous countries throughout the world. Daikin Industries, Ltd. does not have control over which products are exported to and used in a particular country. Prior to purchase, please therefore confirm with your local authorized importer, distributor and/or retailer whether this product conforms to the applicable standards, and is suitable for use, in the region where the product will be used. This statement does not purport to exclude, restrict or modify the application of any local legislation.
- Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorized parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

If you have any inquiries, please contact your local importer, distributor and/or retailer.

Cautions on product corrosion

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided. If you need to install the outdoor unit close to the sea shore, contact your local distributor.

JMI-0107

Organization:
DAIKIN INDUSTRIES, LTD.
AIR CONDITIONING MANUFACTURING DIVISION

Scope of Registration:
THE DESIGN/DEVELOPMENT AND MANUFACTURE OF COMMERCIAL AIR CONDITIONING, HEATING, COOLING, REFRIGERATING EQUIPMENT, COMMERCIAL HEATING EQUIPMENT, RESIDENTIAL AIR CONDITIONING EQUIPMENT, HEAT RECLAIM VENTILATION, AIR CLEANING EQUIPMENT, MARINE TYPE CONTAINER REFRIGERATION UNITS, COMPRESSORS AND VALVES.

JQA-1452

Organization:
DAIKIN INDUSTRIES (THAILAND) LTD.

Scope of Registration:
THE DESIGN/DEVELOPMENT AND MANUFACTURE OF AIR CONDITIONERS AND THE COMPONENTS INCLUDING COMPRESSORS USED FOR THEM

EC99J2044

All of the Daikin Group's business facilities and subsidiaries in Japan are certified under the ISO 14001 international standard for environment management.

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• Specifications, designs and other content appearing in this brochure are current as of August 2010 but subject to change without notice.

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