



ED 34 - 862

R-410A

Engineering Data



THE INTELLIGENT AIR CONDITIONING SYSTEM



COOLING ONLY Cooling Only
50 Hz

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1. Introduction

Preface

Along higher quality building environment and more sophisticated building function, there is now a greater demand for system expansion for a flexible air-conditioning system capable of finer air-conditioning, thus increasing importance of individual air-conditioning systems. On the other hand, due to social significance of environmental and energy problems, elements such as energy-efficiency and low maintenance are still strongly desired.

Daikin is the sole air conditioning company in the world that manufactures every component from refrigerant to complete air conditioning systems itself. Our commitment to offering the best for people as well as the environment inspires us to develop new systems that make the most effective use of energy resources.

Daikin, the first in the industry to develop the VRV system, has now enhanced the R-410A, R-22 with the Inverter that features an upgraded capacity of up to 54 horsepower to further refine all the features of the current VRV system.

This publication contains a variety of information related to the design and installation of this new VRV System. We hope this information will serve to deepen your understanding of the system, and will help you to efficiently develop its highly evolved characteristics.

Global Operations Division
DAIKIN INDUSTRIES, LTD

2. Publication History of VRV Engineering Data

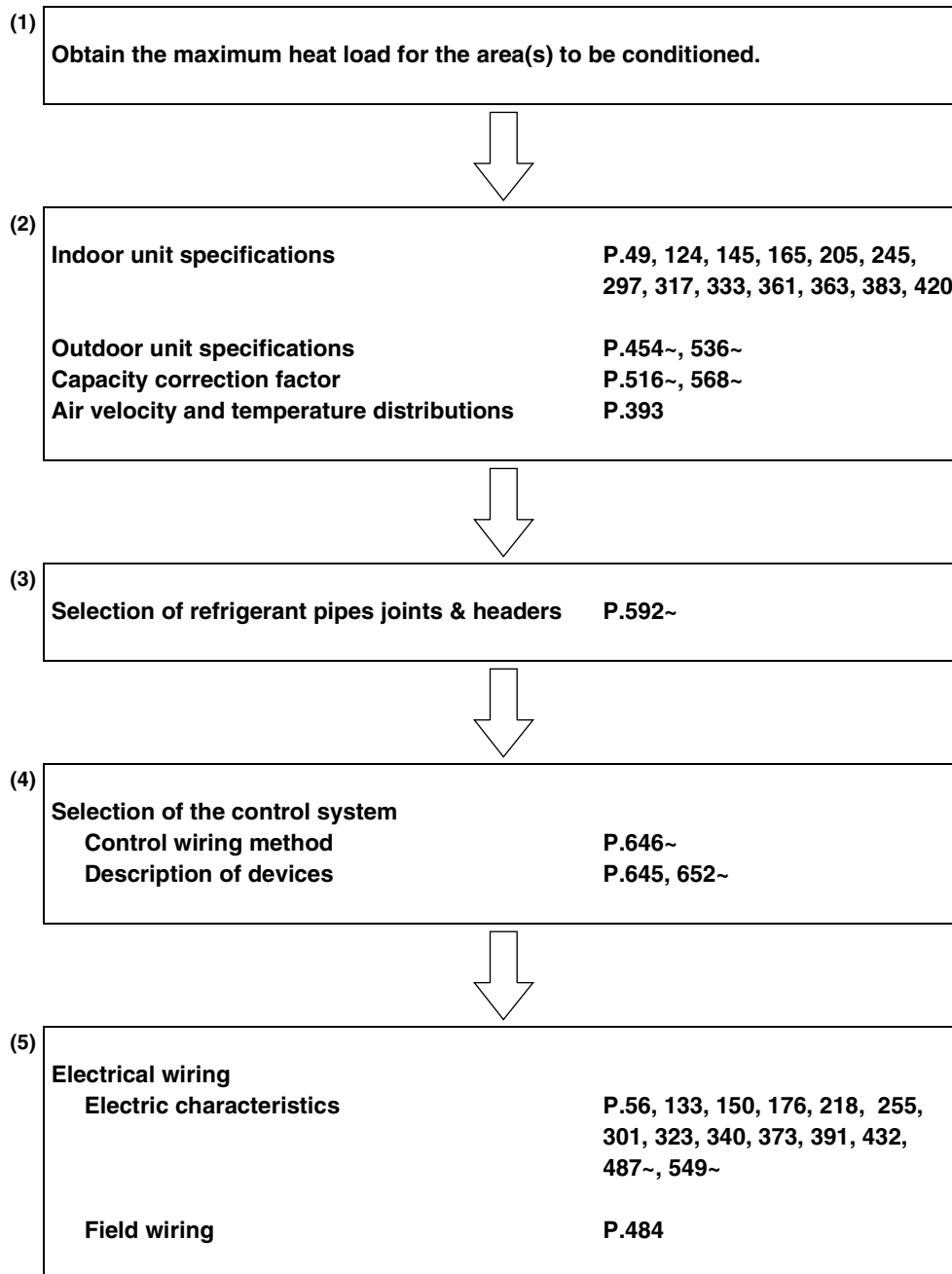
Refrigerant	Type	Pub. : No.	Outdoor Units	Notes	Published In		
R-410A	Air Cooled	■ INVERTER M	ED39-436	50/60Hz H/P RXYMQ4, 5, 6M	VRV II-S Heat Pump ■ New line up of 4, 5, 6HP outdoor units ■ New line up of FXDQ Indoor units	Jul. 2004	
			ED39-526	50Hz H/R REYQ8M~48M	VRV II Heat Recovery Separation of Heat Recovery Series from ED39-226B	Feb. 2006	
			ED35-511B	50/60Hz H/P RXYQ8~30MY1K(E) RXYQ8~30MYLK(E)	VRV II Heat Pump for High outdoor temperature. ■ Minor change of Indoor Units from M to MA ■ Model change of Remote Controller as follows BRC1A61, 62 → BRC1C62 BRC8A61	Jul. 2006	
		■ INVERTER MA	ED39-428B	50/60Hz H/P RXYQ5MA~48MA 50Hz C/O RXQ5MA~48MA	VRV II Heat Pump, Cooling Only ■ New line up of 60Hz Heat Pump outdoor units to ED39-428A	Oct. 2005	
		■ INVERTER P	ED34-762A	50Hz C/O	Normal Series RXQ5P~54P High COP Series RXQ16PH~50PH	VRV III Cooling Only ■ Correction of errors	Sep. 2007
			ED34-845A	50/60Hz H/P	Normal Series RXYQ5P(A)~54P(A) High COP Series RXYQ16P(A)H~50P(A)H	VRV III Heat Pump ■ Change of refrigerant amount Refrigerant amount reduced to less than 12 kg.	Oct. 2008
	ED34-862		50Hz C/O	Normal Series RXQ5PA~54PA High COP Series RXQ16PAH~50PAH	VRV III Cooling Only ■ Change of refrigerant amount Refrigerant amount reduced to less than 12 kg.	Nov. 2008	
	Water Cooled	■ INVERTER M	ED30-442B	50Hz H/P RWEYQ10, 20, 30M 50Hz H/R Y1	VRV-W II Heat Pump, Heat Recovery Following change has been newly added to ED30-442A ■ Minor change of Indoor Units from M to MA ■ Model change of Remote Controller as follows BRC1A61, 62 → BRC1C62 BRC8A61	May. 2006	
			ED30-653A	60Hz H/P RWEYQ10, 20, 30M 60Hz H/R YL, TL	VRV-W II Heat Pump, Heat Recovery 60Hz ■ Correction of errors	Jan. 2008	
		■ INVERTER P	ED30-842	50/60Hz H/P, H/R RWEYQ-P Y1, YL, TL	VRV-W III Heat Pump, Heat Recovery Preliminary	Oct. 2008	
	R-22	Air Cooled	■ INVERTER K-K	ED35-211A	50/60Hz RXY 16K-K~30K-K 50/60Hz RX 16K-K~30K-K	Following change has been newly added to ED35-211 ■ FXD32~63M (Additional) ■ FXYB32~63K (Additional) ■ FXYA40~63K→FXA32~63L (Model Change) ■ DCS302B61→DCS302C61 (Model Change)	Sep. 2004
				■ INVERTER M	ED38-225C	50/60Hz H/P RXY5M~48M 50Hz C/O RX5M~48M	VRV II Heat Pump, Cooling Only Following change has been newly added to ED38-225B ■ FXD20~32P (Additional) ■ Model change of Remote Controller as follows BRC1A61, 62 → BRC1C62 BRC8A61 ■ VAM150~2000FA→VAM150~2000GJ (Model change)
ED38-329			50/60Hz H/P RXYM4, 5, 6M 50Hz C/O RXM4, 5, 6M		VRV II-S Heat Pump, Cooling Only ■ New line up of 4, 5, 6HP outdoor units ■ New line up of FXD Indoor units	Jan. 2004	
■ INVERTER MA			ED38-825		50/60Hz H/P RXY5MA~48MA 50Hz C/O RX5MA~48MA	VRV II Heat Pump, Cooling Only ■ Minor change of outdoor units from M to MA. ■ Addition of DCS303A61	Oct. 2008
For All Types			OH 08-1	For Indoor and Outdoor Units.		Option Handbook	Apr. 2008
HRV(VAM)	GJ	ED71-613	50/60Hz VAM150~2000GJ	HRV ■ New line-up from FA to GJ Series	Feb. 2006		
HRV(VKM)	GA(M)	ED71-440A	50Hz VKM50~100GA(M) (R-410A)	HRV • With DX Coil (VKM-GA) • With DX Coil and Humidities (VKM-GAM)	Feb. 2007		

This time we publish **ED34-862** as shown by .

H/P : Heat Pump
H/R : Heat Recovery
C/O : Cooling Only

Note: The reference number "(V○○○○)" are noted on each figures in this book however they are only used for printing convenience.

3. Step by Step VRV System Selection Process (Reference)



Caution

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 units is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided.
3. Refer to the latest drawing numbers.

Part 1

General Information

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1. Model Names of Indoor/Outdoor Units

Indoor Units

Type		Model Name												Power Supply
Ceiling Mounted Cassette Type (Round Flow)	FXFQ	—	25P	32P	40P	50P	63P	—	80P	100P	125P	—	—	VE
Ceiling Mounted Cassette Type (Double Flow)	FXCQ	20M	25M	32M	40M	50M	63M	—	80M	—	125M	—	—	
Ceiling Mounted Cassette Corner Type	FXKQ	—	25MA	32MA	40MA	—	63MA	—	—	—	—	—	—	
Slim Ceiling Mounted Duct Type	FXDQ-PBVE	20PB	25PB	32PB	—	—	—	—	—	—	—	—	—	
	FXDQ-PBVET	20PB	25PB	32PB	—	—	—	—	—	—	—	—	—	
	FXDQ-NBVE	—	—	—	40NB	50NB	63NB	—	—	—	—	—	—	
	FXDQ-NBVET	—	—	—	40NB	50NB	63NB	—	—	—	—	—	—	
Ceiling Mounted Built-In Type	FXSQ	20M	25M	32M	40M	50M	63M	—	80M	100M	125M	—	—	
Ceiling Mounted Duct Type (Middle and high static pressure)	FXMQ	20P	25P	32P	40P	50P	63P	—	80P	100P	125P	—	—	
Ceiling Mounted Duct Type	FXMQ	—	—	—	—	—	—	—	—	—	—	200MA	250MA	
Ceiling Suspended Type	FXHQ	—	—	32MA	—	—	63MA	—	—	100MA	—	—	—	
Wall Mounted Type	FXAQ	20MA	25MA	32MA	40MA	50MA	63MA	—	—	—	—	—	—	
Floor Standing Type	FXLQ	20MA	25MA	32MA	40MA	50MA	63MA	—	—	—	—	—	—	
Concealed Floor Standing Type	FXNQ	20MA	25MA	32MA	40MA	50MA	63MA	—	—	—	—	—	—	
Ceiling Suspended Cassette Type	FXUQ	—	—	—	—	—	—	71MA	—	100MA	125MA	—	—	V1
Connection Unit for FXUQ	BEVQ	—	—	—	—	—	—	71MA	—	100MA	125MA	—	—	VE

Note: FXDQ has following 2 series, as shown below.

FXDQ-PBVET, NBVET: without Drain Pump (For General, Asia: except for EU, China and Australia)

FXDQ-PBVE, NBVE: with Drain Pump

BEV unit is required for FXUQ only.

MA: RoHS Directive models; Specifications, dimensions and other functions are not changed compared with M type.

Outdoor Units

Normal Series (Space Saving Series)

Series	Model Name										Power Supply
Cooling Only	RXQ	5PA	8PA	10PA	12PA	14PA	16PA	18PA	20PA	22PA	Y1
		24PA	26PA	28PA	30PA	32PA	34PA	36PA	38PA	40PA	
		42PA	44PA	46PA	48PA	50PA	52PA	54PA			

High COP Series (Energy Saving Series)

Series	Model Name										Power Supply
Cooling Only	RXQ	16PAH	18PAH	24PAH	26PAH	28PAH	30PAH	32PAH	34PAH	36PAH	Y1
		38PAH	40PAH	42PAH	44PAH	46PAH	48PAH	50PAH			

VE: 1φ, 220~240V, 50Hz
1φ, 220V, 60Hz

V1: 1φ, 220~240V, 50Hz

Y1: 3φ, 380~415V, 50Hz

Combination of Outdoor Units (Normal Series (Space Saving Series))








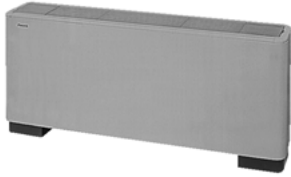

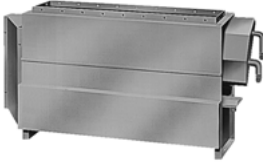


HP	5HP	8HP	10HP	12HP	14HP	16HP	18HP
Model name	RXQ5PA	RXQ8PA	RXQ10PA	RXQ12PA	RXQ14PA	RXQ16PA	RXQ18PA
HP	20HP	22HP	24HP	26HP	28HP	30HP	32HP
Model name	RXQ20PA	RXQ22PA	RXQ24PA	RXQ26PA	RXQ28PA	RXQ30PA	RXQ32PA
Outdoor unit 1	RXQ8PA	RXQ10PA	RXQ8PA	RXQ8PA	RXQ10PA	RXQ12PA	RXQ16PA
Outdoor unit 2	RXQ12PA	RXQ12PA	RXQ16PA	RXQ18PA	RXQ18PA	RXQ18PA	RXQ16PA
Outdoor unit 3	–	–	–	–	–	–	–
HP	34HP	36HP	38HP	40HP	42HP	44HP	46HP
Model name	RXQ34PA	RXQ36PA	RXQ38PA	RXQ40PA	RXQ42PA	RXQ44PA	RXQ46PA
Outdoor unit 1	RXQ16PA	RXQ18PA	RXQ8PA	RXQ8PA	RXQ8PA	RXQ8PA	RXQ10PA
Outdoor unit 2	RXQ18PA	RXQ18PA	RXQ12PA	RXQ16PA	RXQ16PA	RXQ18PA	RXQ18PA
Outdoor unit 3	–	–	RXQ18PA	RXQ16PA	RXQ18PA	RXQ18PA	RXQ18PA
HP	48HP	50HP	52HP	54HP			
Model name	RXQ48PA	RXQ50PA	RXQ52PA	RXQ54PA			
Outdoor unit 1	RXQ12PA	RXQ14PA	RXQ16PA	RXQ18PA			
Outdoor unit 2	RXQ18PA	RXQ18PA	RXQ18PA	RXQ18PA			
Outdoor unit 3	RXQ18PA	RXQ18PA	RXQ18PA	RXQ18PA			

Combination of Outdoor Units (High COP Series (Energy Saving Series))

HP	16HP	18HP	24HP	26HP	28HP	30HP	32HP
Model name	RXQ16PAH	RXQ18PAH	RXQ24PAH	RXQ26PAH	RXQ28PAH	RXQ30PAH	RXQ32PAH
Outdoor unit 1	RXQ8PA	RXQ8PA	RXQ8PA	RXQ8PA	RXQ8PA	RXQ8PA	RXQ8PA
Outdoor unit 2	RXQ8PA	RXQ10PA	RXQ8PA	RXQ8PA	RXQ8PA	RXQ10PA	RXQ12PA
Outdoor unit 3	–	–	RXQ8PA	RXQ10PA	RXQ12PA	RXQ12PA	RXQ12PA
HP	34HP	36HP	38HP	40HP	42HP	44HP	46HP
Model name	RXQ34PAH	RXQ36PAH	RXQ38PAH	RXQ40PAH	RXQ42PAH	RXQ44PAH	RXQ46PAH
Outdoor unit 1	RXQ10PA	RXQ12PA	RXQ12PA	RXQ12PA	RXQ12PA	RXQ12PA	RXQ12PA
Outdoor unit 2	RXQ12PA	RXQ12PA	RXQ12PA	RXQ12PA	RXQ12PA	RXQ16PA	RXQ16PA
Outdoor unit 3	RXQ12PA	RXQ12PA	RXQ14PA	RXQ16PA	RXQ18PA	RXQ16PA	RXQ18PA
HP	48HP	50HP					
Model name	RXQ48PAH	RXQ50PAH					
Outdoor unit 1	RXQ16PA	RXQ16PA					
Outdoor unit 2	RXQ16PA	RXQ16PA					
Outdoor unit 3	RXQ16PA	RXQ18PA					








2. External Appearance

2.1 Indoor Units






<p>Ceiling Mounted Cassette Type (Round Flow)</p> <p>FXFQ25P FXFQ32P FXFQ40P FXFQ50P FXFQ63P FXFQ80P FXFQ100P FXFQ125P</p> 	<p>Ceiling Mounted Duct Type</p> <p>FXMQ200MA FXMQ250MA</p> 
<p>Ceiling Mounted Cassette Type (Double Flow)</p> <p>FXCQ20M FXCQ25M FXCQ32M FXCQ40M FXCQ50M FXCQ63M FXCQ80M FXCQ125M</p> 	<p>Ceiling Suspended Type</p> <p>FXHQ32MA FXHQ63MA FXHQ100MA</p> 
<p>Ceiling Mounted Cassette Corner Type</p> <p>FXKQ25MA FXKQ32MA FXKQ40MA FXKQ63MA</p> 	<p>Wall Mounted Type</p> <p>FXAQ20MA FXAQ25MA FXAQ32MA FXAQ40MA FXAQ50MA FXAQ63MA</p> 
<p>Slim Ceiling Mounted Duct Type</p> <p>FXDQ20PB FXDQ40NB FXDQ25PB FXDQ50NB FXDQ32PB FXDQ63NB</p> <p>with Drain Pump (VE) without Drain Pump (VET)</p> 	<p>Floor Standing Type</p> <p>FXLQ20MA FXLQ25MA FXLQ32MA FXLQ40MA FXLQ50MA FXLQ63MA</p> 
<p>Ceiling Mounted Built-In Type</p> <p>FXSQ20M FXSQ25M FXSQ32M FXSQ40M FXSQ50M FXSQ63M FXSQ80M FXSQ100M FXSQ125M</p> 	<p>Concealed Floor Standing Type</p> <p>FXNQ20MA FXNQ25MA FXNQ32MA FXNQ40MA FXNQ50MA FXNQ63MA</p> 
<p>Ceiling Mounted Duct Type (Middle and high static pressure)</p> <p>FXMQ20P FXMQ25P FXMQ32P FXMQ40P FXMQ50P FXMQ63P FXMQ80P FXMQ100P FXMQ125P</p> 	<p>Ceiling Suspended Cassette Type</p> <p>FXUQ71MA + BEVQ71MA FXUQ100MA + BEVQ100MA FXUQ125MA + BEVQ125MA</p> <p>Connection Unit</p> 

2.2 Outdoor Units

Normal Series (Space Saving Series)

RXQ5PA	RXQ8PA, 10PA	RXQ12PA, 14PA, 16PA, 18PA
 <p data-bbox="336 741 384 763">5HP</p>	 <p data-bbox="756 741 836 763">8, 10HP</p>	 <p data-bbox="1155 741 1315 763">12, 14, 16, 18HP</p>
RXQ20PA, 22PA, 24PA, 26PA, 28PA		RXQ30PA, 32PA, 34PA, 36PA
 <p data-bbox="368 1323 568 1346">20, 22, 24, 26, 28HP</p>		 <p data-bbox="1043 1323 1203 1346">30, 32, 34, 36HP</p>
RXQ38PA, 40PA, 42PA, 44PA, 46PA		RXQ48PA, 50PA, 52PA, 54PA
 <p data-bbox="368 1906 568 1928">38, 40, 42, 44, 46HP</p>		 <p data-bbox="1043 1906 1203 1928">48, 50, 52, 54HP</p>

High COP Series (Energy Saving Series)

RXQ16PAH, 18PAH	RXQ24PAH, 26PAH
 <p data-bbox="422 719 515 745">16, 18HP</p>	 <p data-bbox="1075 719 1168 745">24, 26HP</p>
RXQ28PAH, 30PAH	RXQ32PAH, 34PAH
 <p data-bbox="422 1305 515 1332">28, 30HP</p>	 <p data-bbox="1075 1305 1168 1332">32, 34HP</p>
RXQ36PAH, 38PAH, 40PAH, 42PAH, 44PAH, 46PAH, 48PAH, 50PAH	
 <p data-bbox="639 1888 951 1915">36, 38, 40, 42, 44, 46, 48, 50HP</p>	

3. Combination of Outdoor Units

Normal Series (Space Saving Series)

System Capacity	Number of units	Module							Outdoor Unit Multi Connection Piping Kit (Option)
		5	8	10	12	14	16	18	
5HP	1	●							—
8HP	1		●						
10HP	1			●					
12HP	1				●				
14HP	1					●			
16HP	1						●		
18HP	1							●	
20HP	2		●		●				BHFP22P100
22HP	2			●	●				
24HP	2		●				●		
26HP	2		●					●	
28HP	2			●				●	
30HP	2				●			●	
32HP	2						●●		
34HP	2						●	●	
36HP	2							●●	
38HP	3		●		●			●	BHFP22P151
40HP	3		●				●●		
42HP	3		●				●	●	
44HP	3		●					●●	
46HP	3			●				●●	
48HP	3				●			●●	
50HP	3					●		●●	
52HP	3						●	●●	
54HP	3							●●●	

★Note: For multiple connection of 20HP system or more, an optional Daikin Outdoor Unit Multi Connection Piping Kit is required.

High COP Series (Energy Saving Series)

System Capacity	Number of units	Module						Outdoor Unit Multi Connection Piping Kit (Option)
		8	10	12	14	16	18	
16HP	2	●●						BHFP22P100
18HP	2	●	●					
24HP	3	●●●						BHFP22P151
26HP	3	●●	●					
28HP	3	●●		●				
30HP	3	●	●	●				
32HP	3	●		●●				
34HP	3		●	●●				
36HP	3			●●●				
38HP	3			●●	●			
40HP	3			●●		●		
42HP	3			●●			●	
44HP	3			●		●●		
46HP	3			●		●	●	
48HP	3					●●●		
50HP	3					●●	●	

★Note: For multiple connection of 16HP system or more, an optional Daikin Outdoor Unit Multi Connection Piping Kit is required.

4. Nomenclature

Indoor Unit

FX **C** **Q** **40** **M** **VE**

Power Supply Symbol

VE : Single Phase 220 to 240V, 50Hz : 220V, 60Hz

V1 : Single Phase 220 to 240V, 50Hz

Indicates Major Design Category

M : Standard

MA : Standard (RoHS Applied Models)

NB, PB : Standard

Capacity Indication

Conversion to Horsepower:

20 : 0.8 HP 50 : 2.0 HP 100 : 4 HP

25 : 1 HP 63 : 2.5 HP 125 : 5 HP

32 : 1.25 HP 71 : 3 HP 200 : 8 HP

40 : 1.6 HP 80 : 3.2 HP 250 : 10 HP

Refrigerant : R-410A

Type of Unit

F : Ceiling Mounted Cassette Type (Round Flow)

C : Ceiling Mounted Cassette Type (Double Flow)

K : Ceiling Mounted Cassette Corner Type

D : Slim Ceiling Mounted Duct Type

S : Ceiling Mounted Built-In Type

M : Ceiling Mounted Duct Type

H : Ceiling Suspended Type

A : Wall Mounted Type

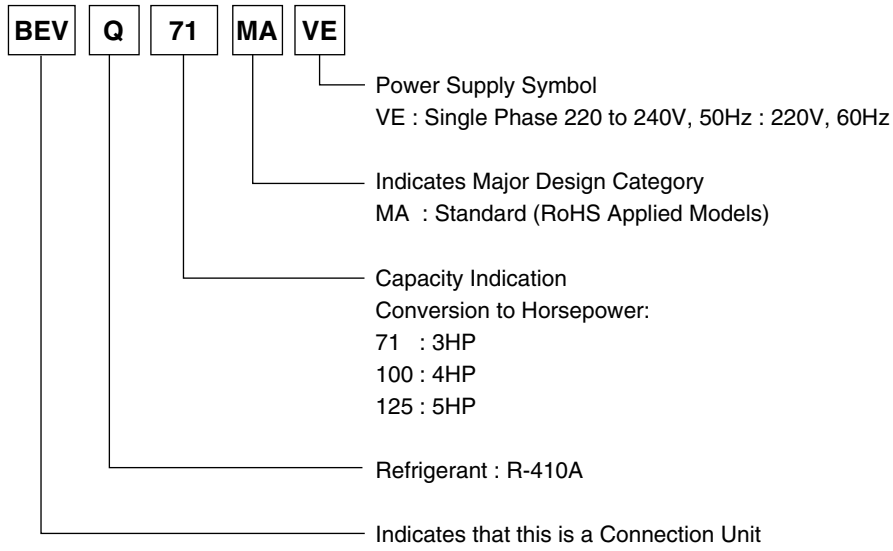
L : Floor Standing Type

N : Concealed Floor Standing Type

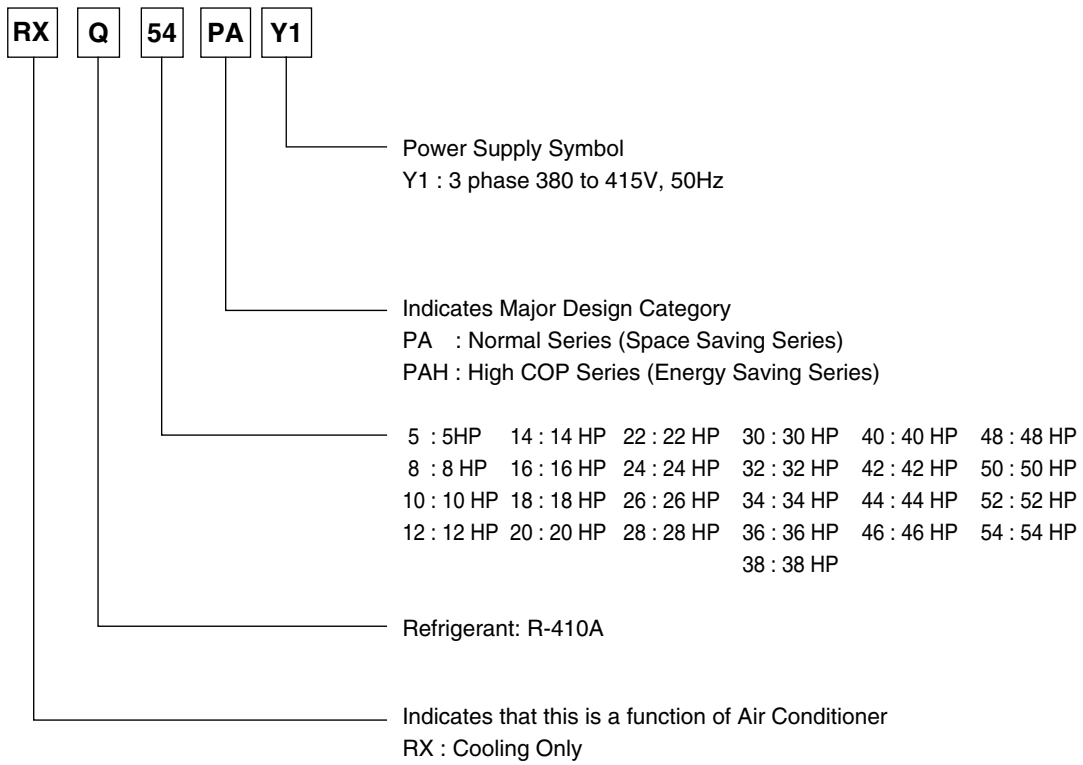
U : Ceiling Suspended Cassette Type

Indicates that this is VRV system indoor unit.

Connection Unit



Outdoor Unit



5. Capacity Range

Outdoor Units

Normal Type (Space Saving Type)

HP	Model name	Combination	Outdoor unit multi connection piping kit	Total capacity index of connectable indoor units*	Maximum number of connectable indoor units*
5 HP	RXQ5PA	RXQ5PA	–	62.5 to 162.5 (250)	8 (12)
8 HP	RXQ8PA	RXQ8PA	–	100 to 260 (400)	13 (20)
10 HP	RXQ10PA	RXQ10PA	–	125 to 325 (500)	16 (25)
12 HP	RXQ12PA	RXQ12PA	–	150 to 390 (600)	19 (30)
14 HP	RXQ14PA	RXQ14PA	–	175 to 455 (700)	22 (35)
16 HP	RXQ16PA	RXQ16PA	–	200 to 520 (800)	26 (40)
18 HP	RXQ18PA	RXQ18PA	–	225 to 585 (900)	29 (45)
20 HP	RXQ20PA	RXQ8PA + RXQ12PA	BHFP22P100	250 to 650 (800)	32 (40)
22 HP	RXQ22PA	RXQ10PA + RXQ12PA		275 to 715 (880)	35 (44)
24 HP	RXQ24PA	RXQ8PA + RXQ16PA		300 to 780 (960)	39 (48)
26 HP	RXQ26PA	RXQ8PA + RXQ18PA		325 to 845 (1,040)	42 (52)
28 HP	RXQ28PA	RXQ10PA + RXQ18PA		350 to 910 (1,120)	45 (56)
30 HP	RXQ30PA	RXQ12PA + RXQ18PA		375 to 975 (1,200)	48 (60)
32 HP	RXQ32PA	RXQ16PA x 2		400 to 1,040 (1,280)	52 (64)
34 HP	RXQ34PA	RXQ16PA + RXQ18PA		425 to 1,105 (1,360)	55 (64)
36 HP	RXQ36PA	RXQ18PA x 2		450 to 1,170 (1,440)	58 (64)
38 HP	RXQ38PA	RXQ8PA + RXQ12PA + RXQ18PA		475 to 1,235 (1,235)	61 (61)
40 HP	RXQ40PA	RXQ8PA + RXQ16PA x 2	BHFP22P151	500 to 1,300 (1,300)	64 (64)
42 HP	RXQ42PA	RXQ8PA + RXQ16PA + RXQ18PA		525 to 1,365 (1,365)	
44 HP	RXQ44PA	RXQ8PA + RXQ18PA x 2		550 to 1,430 (1,430)	
46 HP	RXQ46PA	RXQ10PA + RXQ18PA x 2		575 to 1,495 (1,495)	
48 HP	RXQ48PA	RXQ12PA + RXQ18PA x 2		600 to 1,560 (1,560)	
50 HP	RXQ50PA	RXQ14PA + RXQ18PA x 2		625 to 1,625 (1,625)	
52 HP	RXQ52PA	RXQ16PA + RXQ18PA x 2		650 to 1,690 (1,690)	
54 HP	RXQ54PA	RXQ18PA x 3		675 to 1,755 (1,755)	

Note: *For multiple connection of 20 HP systems and above, the above Daikin optional kit (separately sold) is required.

*Values inside brackets are based on connection of indoor units rated at maximum capacity, 200% for single outdoor units, 160% for double outdoor units, and 130% for triple outdoor units. Refer to page 15 for notes on connection capacity of indoor units.

High-COP Type (Energy Saving Type)

HP	Model name	Combination	Outdoor unit multi connection piping kit	Total capacity index of connectable indoor units*	Maximum number of connectable indoor units*
16 HP	RXQ16PAH	RXQ8PA x 2	BHFP22P100	200 to 520 (640)	26 (32)
18 HP	RXQ18PAH	RXQ8PA + RXQ10PA		225 to 585 (720)	29 (36)
24 HP	RXQ24PAH	RXQ8PA x 3	BHFP22P151	300 to 780 (780)	39 (39)
26 HP	RXQ26PAH	RXQ8PA x 2 + RXQ10PA		325 to 845 (845)	42 (42)
28 HP	RXQ28PAH	RXQ8PA x 2 + RXQ12PA		350 to 910 (910)	45 (45)
30 HP	RXQ30PAH	RXQ8PA + RXQ10PA + RXQ12PA		375 to 975 (975)	48 (48)
32 HP	RXQ32PAH	RXQ8PA + RXQ12PA x 2		400 to 1,040 (1,040)	52 (52)
34 HP	RXQ34PAH	RXQ10PA + RXQ12PA x 2		425 to 1,105 (1,105)	55 (55)
36 HP	RXQ36PAH	RXQ12PA x 3		450 to 1,170 (1,170)	58 (58)
38 HP	RXQ38PAH	RXQ12PA x 2 + RXQ14PA		475 to 1,235 (1,235)	61 (61)
40 HP	RXQ40PAH	RXQ12PA x 2 + RXQ16PA		500 to 1,300 (1,300)	64 (64)
42 HP	RXQ42PAH	RXQ12PA x 2 + RXQ18PA		525 to 1,365 (1,365)	
44 HP	RXQ44PAH	RXQ12PA + RXQ16PA x 2		550 to 1,430 (1,430)	
46 HP	RXQ46PAH	RXQ12PA + RXQ16PA + RXQ18PA		575 to 1,495 (1,495)	
48 HP	RXQ48PAH	RXQ16PA x 3		600 to 1,560 (1,560)	
50 HP	RXQ50PAH	RXQ16PA x 2 + RXQ18PA	625 to 1,625 (1,625)		

Note: *For multiple connection of 16 HP systems and above, the above Daikin optional kit (separately sold) is required.

*Values inside brackets are based on connection of indoor units rated at maximum capacity, 200% for single outdoor units, 160% for double outdoor units, and 130% for triple outdoor units. Refer to page 15 for notes on connection capacity of indoor units.

Indoor Units

Type		Model Name												Power Supply
Ceiling Mounted Cassette Type (Round Flow)	FXFQ	—	25P	32P	40P	50P	63P	—	80P	100P	125P	—	—	VE
Ceiling Mounted Cassette Type (Double Flow)	FXCQ	20M	25M	32M	40M	50M	63M	—	80M	—	125M	—	—	
Ceiling Mounted Cassette Corner Type	FXKQ	—	25MA	32MA	40MA	—	63MA	—	—	—	—	—	—	
Slim Ceiling Mounted Duct Type	FXDQ-PBVE	20PB	25PB	32PB	—	—	—	—	—	—	—	—	—	
	FXDQ-PBVET	20PB	25PB	32PB	—	—	—	—	—	—	—	—	—	
	FXDQ-NBVE	—	—	—	40NB	50NB	63NB	—	—	—	—	—	—	
	FXDQ-NBVET	—	—	—	40NB	50NB	63NB	—	—	—	—	—	—	
Ceiling Mounted Built-In Type	FXSQ	20M	25M	32M	40M	50M	63M	—	80M	100M	125M	—	—	
Ceiling Mounted Duct Type (Middle and high static pressure)	FXMQ	20P	25P	32P	40P	50P	63P	—	80P	100P	125P	—	—	
Ceiling Mounted Duct Type	FXMQ	—	—	—	—	—	—	—	—	—	—	200MA	250MA	
Ceiling Suspended Type	FXHQ	—	—	32MA	—	—	63MA	—	—	100MA	—	—	—	
Wall Mounted Type	FXAQ	20MA	25MA	32MA	40MA	50MA	63MA	—	—	—	—	—	—	
Floor Standing Type	FXLQ	20MA	25MA	32MA	40MA	50MA	63MA	—	—	—	—	—	—	
Concealed Floor Standing Type	FXNQ	20MA	25MA	32MA	40MA	50MA	63MA	—	—	—	—	—	—	
Ceiling Suspended Cassette Type	FXUQ	—	—	—	—	—	—	71MA	—	100MA	125MA	—	—	V1
Connection Unit for FXUQ	BEVQ	—	—	—	—	—	—	71MA	—	100MA	125MA	—	—	VE

Note: FXDQ has following 2 series, as shown below.

FXDQ-PBVET, NBVET: without Drain Pump (For General, Asia: except for EU, China and Australia)

FXDQ-PBVE, NBVE: with Drain Pump

BEV unit is required for FXUQ only.

MA: RoHS Directive models; Specifications, dimensions and other functions are not changed compared with M type.

6. Features

6.1 Technologies

VRV III—Created to respond to the needs of large-sized buildings

Daikin's constant efforts have been devoted towards using the latest and most revolutionary technologies in the development of the VRV III system for large-sized buildings. The system offers larger outdoor capacities, greater energy savings, easier installation, longer actual and total piping, and more.

1 Newly improved fans and grilles

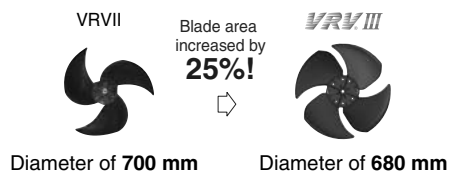
A higher external static pressure has been achieved—from 58.8 Pa to 78.4 Pa—thanks to reduced internal pressure loss, use of the new fans and the new grilles.

New aero spiral fan and aero asymmetrical fan

The area of these new fan blades has been increased and optimised for each casing. This greatly reduces pressure loss, resulting in a higher external static pressure.

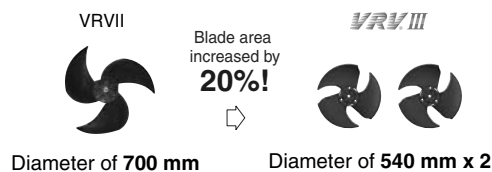
New aero asymmetrical fan

The three-bladed fan on the 10 HP unit, with a diameter of 700 mm, has been redesigned to include four blades and now has a diameter of 680 mm. Blade area has been increased by 25%.



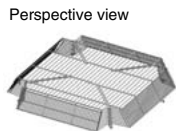
New aero spiral fan (Powerful Dual DC fan)

In the 14 and 16 HP unit, a single fan with a diameter of 700 mm has been split into two fans with diameters of 540 mm each. Blade area has been increased by 20% to increase airflow.



Aero smooth grille

The three-dimensional, integrated, soft woven steel grilles are covered with a plastic coating that protects them from rotating elements and the possibility of fire damage.



2 Heat exchanger

The new heat exchanger contributes to a high COP because of an increase from 7% to 10% of the effective length as well as an optimised e-Pass heat exchanger.



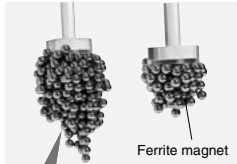
3 Improving the high efficiency compressor to achieve a high COP and larger capacity

Reluctance DC scroll compressor

Daikin's unique scroll compressor minimises heat loss, and is driven by a high efficiency motor to achieve significant energy savings.

High torque and efficiency is attained with the adoption of neodymium magnets. Achieves 70% reduction in volume.

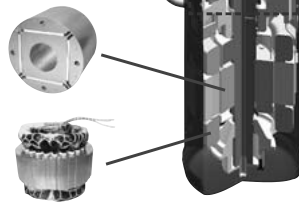
Secret to raising energy-efficiency! Powerful magnets



Neodymium magnet

Neodymium magnets are much more powerful than the widely used ferrite magnets.

Reluctance DC motor



High-performance, low-noise new scroll compressor operates at a faster rate. The speed increase has been achieved through advanced stress analysis for increased strength and utilisation of the advantages (oil film control) of the high thrust mechanism*.

*High thrust mechanism

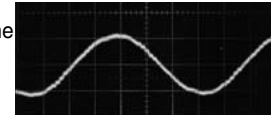
By introducing high pressure oil, the reactive force from the fixed scroll is added to the internal force, thereby reducing thrust losses. This results in improved efficiency and suppressed sound levels.

4 Heat transfer circuit

By performing super cooling before the expansion process, the volume of refrigerant that needs to be circulated to the indoor units can be reduced without lowering the evaporation temperature. This permits the use of narrower piping.

6 Smooth sine wave DC Inverter

By adoption of the Sine Wave, which smoothes the rotation of the motor, operation efficiency is improved sharply.



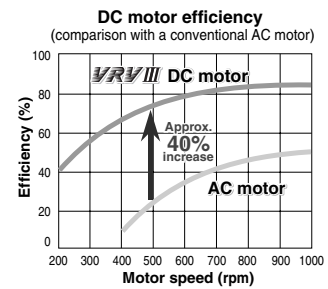
5 Compact aero box

Realises a compact casing by stacking the Inverter and control PCBs plus optimising the internal design to suit airflow speed. This achieves lower noise and reduces the power required by the large-diameter fanned outdoor unit.

7 DC fan motor

- Across entire range of models (from 5 to 54 HP).
- Efficiency improvement by approximately 40% especially at low speed.

DC fan motor structure



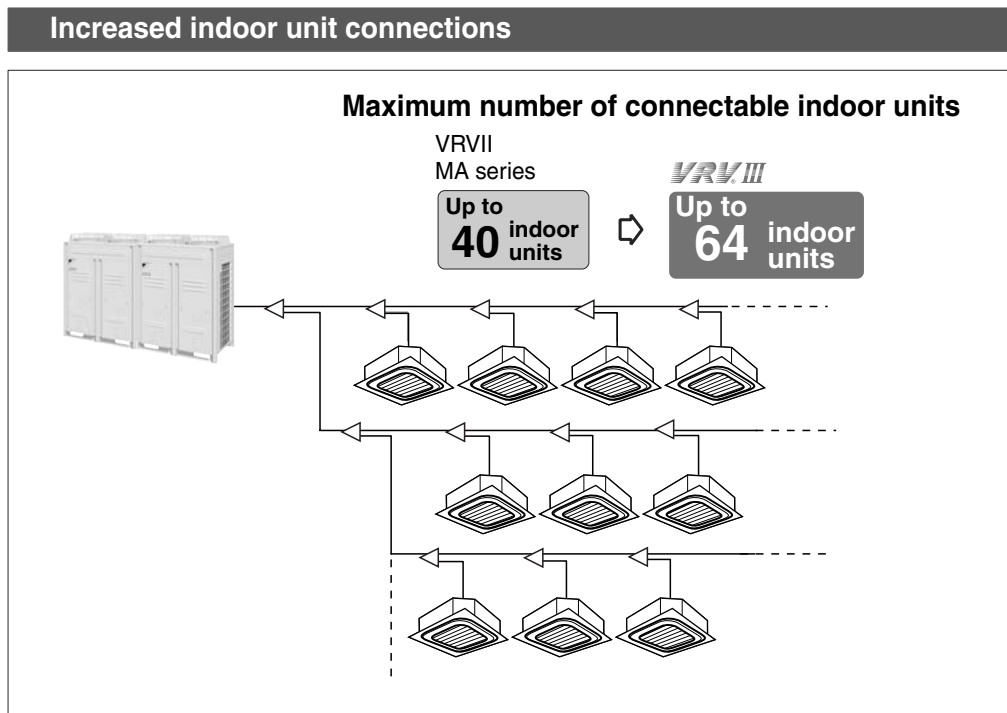
Note: Data are based on studies conducted under controlled conditions at a Daikin laboratory.

6.2 Flexible Design

Large capacities for large-sized buildings

An increased number of connectable indoor units

The number of connectable indoor units has been drastically increased from 40 to 64!




Refer to page 11 for the maximum number of connectable indoor units.

Combination ratio

Connection capacity at maximum is 200%.

Connection capacity
50%–200%

Conditions of indoor unit connection capacity

Applicable indoor units	 FXDQ, FXSQ, FXAQ models	Other indoor unit models*
Single outdoor units	200%	200%
Double outdoor units		160%
Triple outdoor units		130%

* For the FXFQ25 models, maximum connection ratio is 130% for the entire range of outdoor units.

Note: • If the operational capacity of indoor units is more than 130%, low airflow operation is enforced in all the indoor units.

Large capacities for large-sized buildings

Extended long piping length

Piping length is drastically extended! The long piping length provides more design flexibility, which can match even large-sized buildings.

■ Max. actual piping length

VRVII MA series

VRV III

150 m

165 m

■ Max. equivalent piping length

VRVII MA series

VRV III

175 m

190 m

■ Max. total piping length

VRVII MA series

VRV III

510 m

1000 m

■ Max. level difference between the outdoor units and the indoor units

VRV III

RXQ8PA-54PA

Outdoor unit above indoor unit:

90 m^{*2}

*2. Level differences above 50 m are available on request.

VRVII MA series

Outdoor unit above indoor unit:

50 m

Outdoor unit below indoor unit:

90 m

Outdoor unit below indoor unit:

40 m

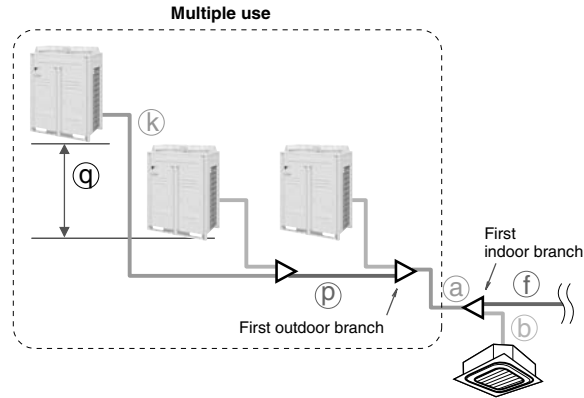
RXQ5PA

Outdoor unit above indoor unit:

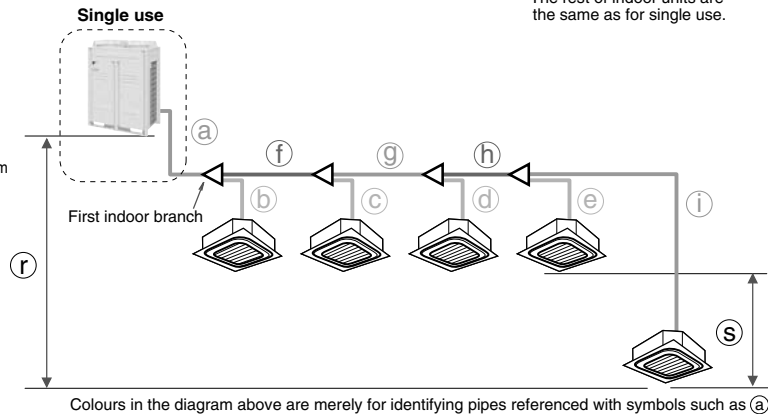
50 m

Outdoor unit below indoor unit:

40 m



*The rest of indoor units are the same as for single use.



Colours in the diagram above are merely for identifying pipes referenced with symbols such as (a).

		Actual piping length	Example	Equivalent piping length	
Maximum allowable piping length	Refrigerant piping length	165 m or less	a+f+g+h+i	190 m or less	
	Total extension length	1000 m or less	a+b+c+d+e+f+g+h+i	—	
	Between the first indoor branch and the farthest indoor unit	90 m or less ^{*1}	f+g+h+i	—	
	Between the outdoor branch and the last outdoor unit	10 m or less	k+p	13 m or less	
Maximum allowable level difference	Between the outdoor units (Multiple use)		Level Difference	Outdoor Units	
			5 m or less	q	RXQ8PA-54PA
	Between the indoor units		15 m or less	s	—
	Between the outdoor units and the indoor units	If the outdoor unit is above.	^{*2} Available on request 90 m or less	r	RXQ8PA-54PA
		If the outdoor unit is below.	90 m or less	r	RXQ8PA-54PA
Between the outdoor units and the indoor units	If the outdoor unit is above.	50 m or less	r	RXQ5PA	
	If the outdoor unit is below.	40 m or less	r	RXQ5PA	

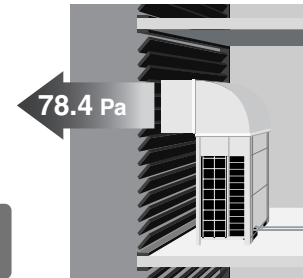
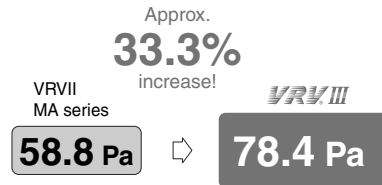
*1. No special requirements up to 40 m. The maximum actual piping length can be 90 m, or less depending on conditions. Various conditions and requirements have to be met to allow utilisation of 90 m piping length. Be sure to refer to the Engineering Data for details of these conditions and requirements.

*2. Level differences above 50 m are not supported by default but are available on request for RXQ8PA-54PA. (If the outdoor unit is above the indoor unit.)

Large capacities for large-sized buildings

High external static pressure 78.4 Pa (8 mm H₂O)

Higher external static pressure has been achieved thanks to the fan grilles and the dual DC fans that reduce internal pressure loss. Exceeding the previous 58.8 Pa (6 mm H₂O) level, Daikin now offers 78.4 Pa (8 mm H₂O) external static pressure by field setting to meet the requirements for installation on each floor, often requested for large-sized buildings.



Easier installation and maintenance

Automatic test operation

Simply press the test operation button and the unit performs an automatic system check, including wiring, shutoff valves, and sensors. The results are returned automatically after the check finishes.

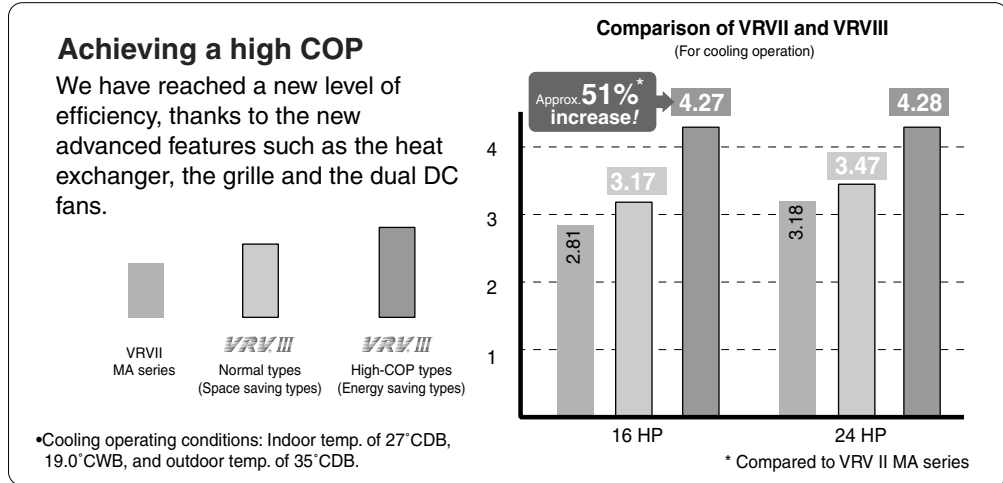
Memory function for operational data

Operating data for the preceding 3 minutes is automatically stored in memory. Should a malfunction occur, this speeds up the process of identifying and fixing the cause of the problem. It also helps in developing measures to eliminate malfunctions.

6.3 A sense of responsibility

High COPs

It has become essential for air conditioning manufacturers to develop systems that provide high energy savings. We at Daikin have made great efforts in this field, and the newly-developed VRVIII delivers highly efficient performance, contributing to high energy savings.



Compliant with the RoHS Directive*

We have been making efforts to facilitate the transition to using RoHS Directive*-compliant materials for system parts.

* RoHS Directive
 The RoHS (Restriction of Hazardous Substances (in electrical and electronic equipment)) Directive is an environmental directive enacted to regulate the use of designated chemical substances (lead, cadmium, hexavalent chromium, mercury, polybrominated biphenyls and polybrominated diphenylether) in electrical equipment. All household products subject to this Directive and sold in Europe from July 1, 2006 are legally bound to comply with the RoHS Directive.

Double backup operation in compressors and units

- If one of the multiple compressors in a single outdoor unit system malfunctions, the other compressors take over emergency operation.¹
- If one of the unit in a multiple outdoor system malfunctions, the other outdoor units provide emergency operation² until repairs can be made.



¹1. Possible only with single outdoor unit systems that are equipped with two or more compressors. Local setting of the outdoor unit is necessary.
²2. For systems composed of two or more outdoor units

Less chances of refrigerant leakage

Conventionally, shutoff valve connections are flanged or flared. In the VRVIII system, the connections for all outdoor units are brazed, meaning less chance of refrigerant leakage.

6.4 Enhanced Comfort

Enhanced comfort

Outdoor units designed for low-sound operation

Outdoor units created with cutting-edge technologies provide quiet operation to increase users' comfort.

Efficient compressor

New high-performance, low-sound scroll compressor operates at a faster rate, reducing start-up time. This helps the unit to bring the room temperature up to the set level quickly.



Nighttime quiet operation function

Operation sound level selectable from 3 steps for the night mode

Mode 1. Automatic mode

Set on the outdoor PCB. Time of maximum temperature is memorised. The low operating mode will initiate 8 hours^{*1} after the peak temperature in the daytime, and normal operation will resume 10 hours^{*2} after that. The operation sound level for the night mode can be selected from 55 dB(A) (Step 1), 50 dB(A) (Step 2) and 45 dB(A) (Step 3). (For a single outdoor unit.)

Mode 2. Manual mode

Starting time and ending time can be input. (An external control adaptor for outdoor unit, DTA104A53/61/62, and a locally obtained timer are necessary.)

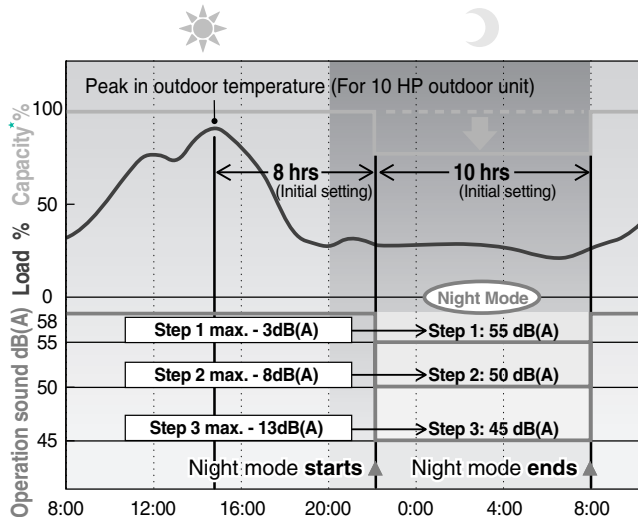
Mode 3. Combined mode

Combinations of modes 1 and 2 can be used depending on your needs.

*1. Initial setting. Can be selected from 6, 8 and 10 hours.

*2. Initial setting. Can be selected from 8, 9 and 10 hours.

Mode 1. Automatic mode



Notes: • This function is available in setting at site.

• The relationship of outdoor temperature (load) and time shown in the graph is just an example.

* The capacity reduction rate differs depending on the operation sound level step selected.

6.5 Control Systems

Individual Control Systems

Wired remote controller (Option)



BRC1C62

- Easier to read because LCD screen is larger.
- Digital display lets you set temperature in 1°C units.
- Lets you individually programme by timer the respective times for operation start and stop within a maximum of 72 hours.
- Equipped with a thermostat sensor in the remote controller that makes possible more comfortable room temperature control.
- Constantly monitors malfunctions in the system for a min. of 40 items, and is equipped with a "self-diagnosis function" that lets you know by message immediately when a malfunction occurs.
- Lets you carry out various field settings by remote controller.
- Enables you to select the ventilation mode and the volume of the HRV.
- The rubber switch and the oil-resisting resin casing have been adopted for durability.

* When the auto-swing function is not available, the message, THIS FUNCTION IS NOT AVAILABLE is displayed when the wind direction adjustment button is pressed.

Wired remote controller with weekly schedule timer (Option)



BRC1D61

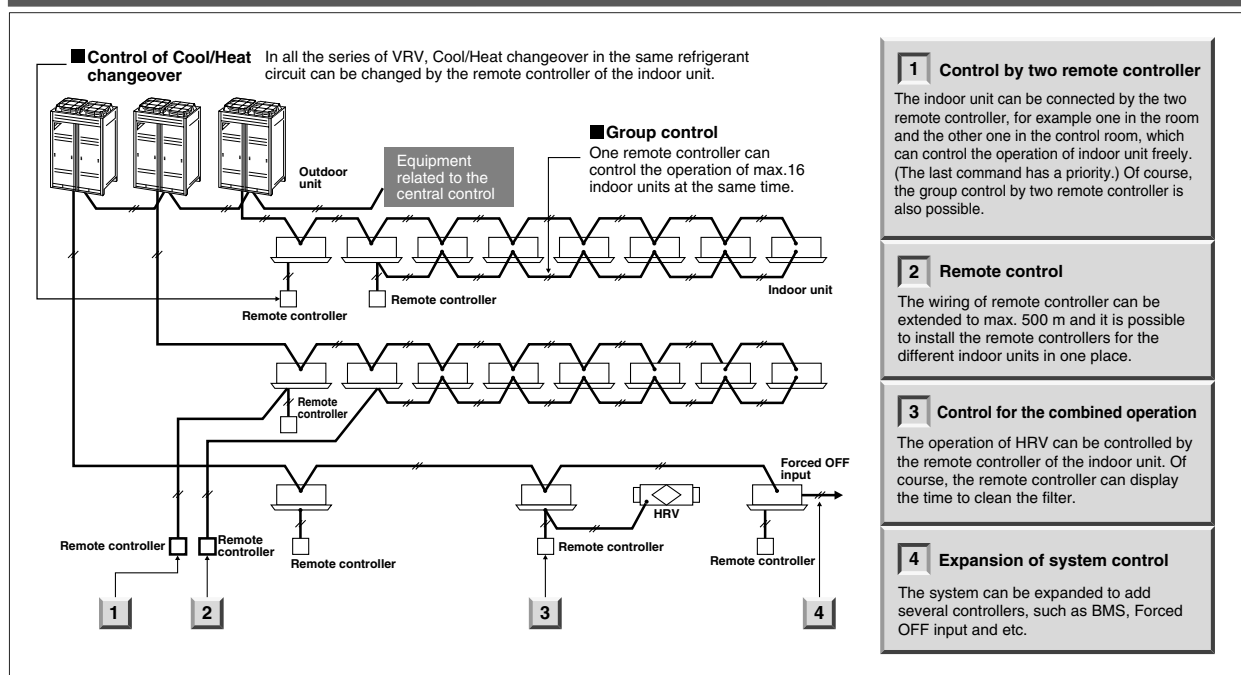
Adds advanced functions to those of the above wired remote controller.

- Includes ventilation mode and airflow rate switching, the main functions of HRV series.
- 24-hour clock function (1-hour backup for power failures)
- Programming function for each day of week.
- Scheduling possible of start/stop and temperature limit (5 settings/day)
- Programming can be enabled or disabled.
- Copy function for programmed schedules.

Notes: 1. Standard remote controllers (BRC1C62) not required.

2. If the BRC1D61 is connected to the centralised remote controllers (DCS303A51, DCS302CA61, DCS301BA61, DST301BA61), the schedule function is not available.

The wired remote controller supports a wide range of control functions



Wireless remote controller (Option)

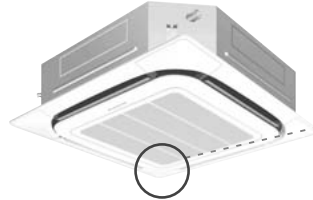


Wireless remote controller

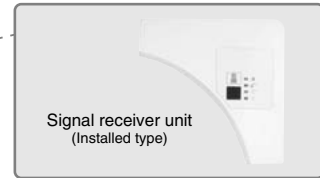


Signal receiver unit (Separate type)

- The same operation modes and settings as with wired remote controllers are possible.
- A compact signal receiver unit to be mounted into a wall or ceiling is included.
 - A light receiver unit for a Ceiling Mounted Cassette (Round Flow, Double Flow) type, Ceiling Suspended type and Wall Mounted type is mounted into the indoor unit.



Signal receiver unit can be installed on the panel
ex. Ceiling Mounted Cassette (Round Flow) type



Signal receiver unit (Installed type)

Simple remote controller (Option)



Exposed type (BRC2C51)



Concealed type (For hotel use) (BRC3A61)

- The remote controller has centralised its frequently used operation selectors and switches (on/off, operation mode, temperature setting and airflow volume), making itself suitable for use in hotel rooms or conference rooms.
- The exposed type remote controller is fitted with a thermostat sensor.



The concealed-type remote controller smartly fits into a night table or console panel in a hotel room.

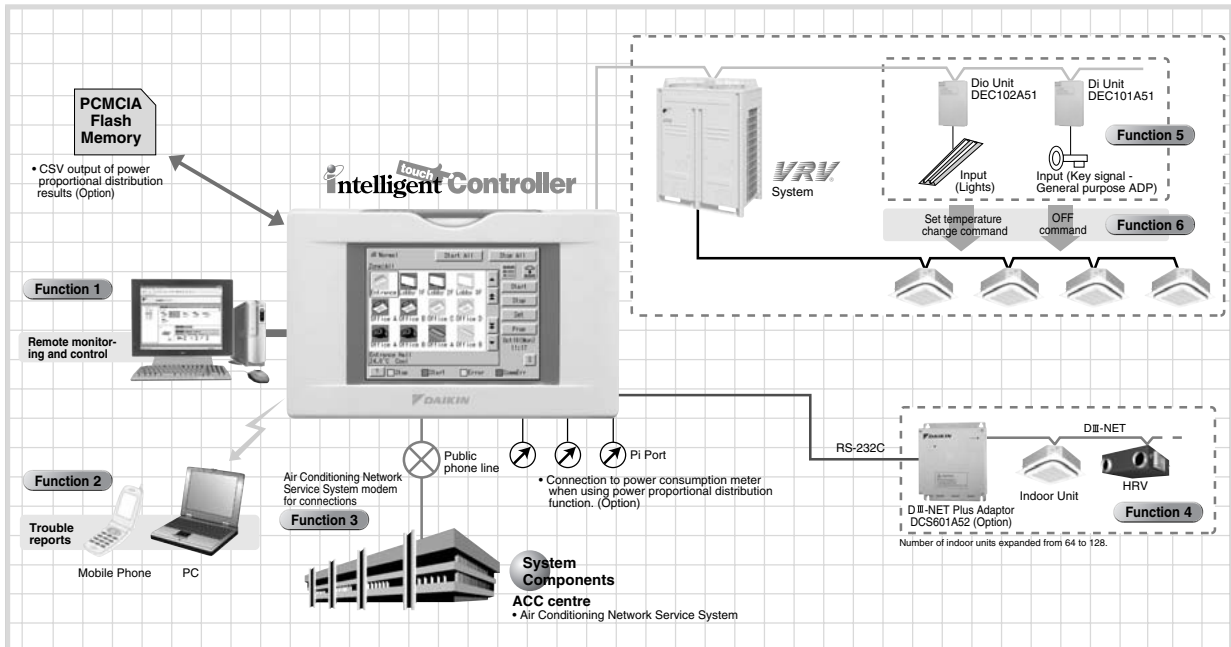
Wide variation of remote controllers for indoor units

	FXFQ	FXCQ	FXKQ	FXDQ	FXSQ	FXMQ	FXHQ	FXAQ	FXL(N)Q	FXUQ
Wired remote controller (BRC1C62)	●	●	●	●	●	●	●	●	●	●
Wired remote controller with weekly schedule timer (BRC1D61)	●	●	●	●	●	●	●	●	●	●
Wireless remote controller* (Installed signal receiver unit)	●	●					●	●		●
Wireless remote controller* (Separate type signal receiver unit)			●	●	●	●			●	
Simple remote controller (Exposed type) (BRC2C51)				●	●	●			●	
Simple remote controller (Concealed type: for Hotel use) (BRC3A61)				●	●	●			●	

6.6 Advanced Control Systems

Intelligent Controller

Communication functions in the user-friendly icon-based multilingual controller simplify centralised control of the VRV system.



Function 1 Support for centralised control from elsewhere using a PC with a Web browser (Option)

Function 2 Sending of e-mail alerts to a specified address when malfunctions occur (Option)

Function 3 Built-in modem for connecting to Air Conditioning Network Service System (Option)

Function 4 Doubling of number of connectable indoor units by adding a DIII-NET Plus Adaptor (Option)

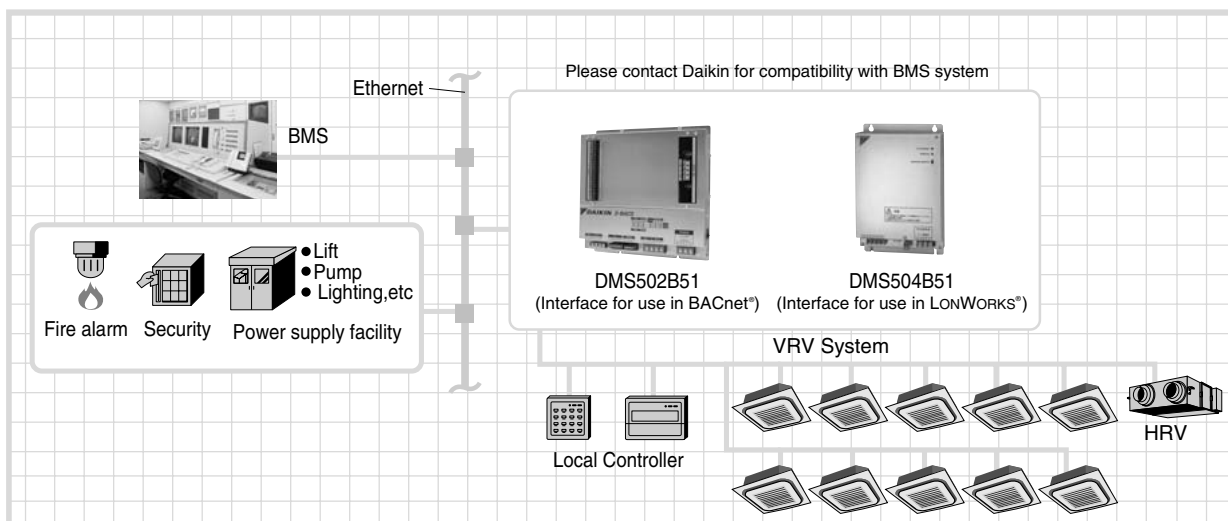
Function 5 Management of facilities/equipment other than A/C units (By adding Dio unit or Di unit)

Function 6 Simple Interlock Function

- Colour LCD touch panel icon display
- Small manageable size
- Simplified engineering
- Multi language (English, French, Italian, German, Spanish and Chinese)
- Yearly schedule
- PPD (Power Proportional Distribution function) (Option)
- Auto heat/cool change-over
- Temperature limitation
- Enhanced history function
- Air Conditioning Network Service System (Optional Maintenance Service)
- Simple Interlock Function

Interface for BACnet® and LONWORKS®

Integrated control systems that recognise the trend of open control systems



- Compatibility with BMS enhanced by utilising the international communication standards, BACnet® or LONWORKS®.

DMS502B51 Interface for use in BACnet®

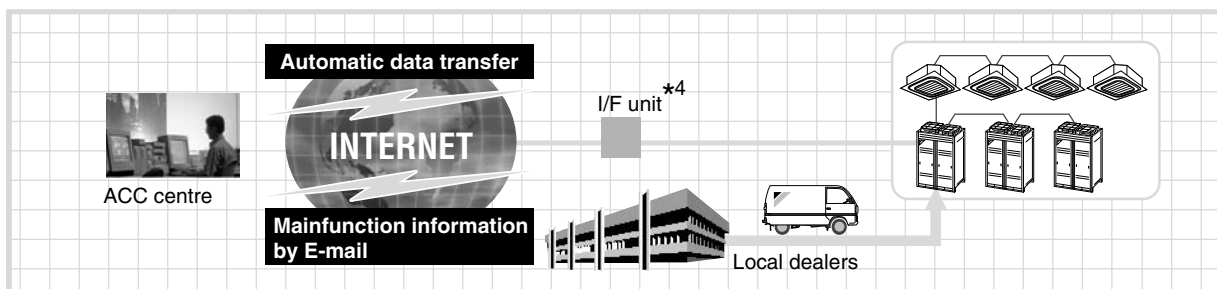
- BTL Certification
- PPD data (Optional Di board is required.)
- ISO 16484-5 (Does not support IEEE 802.3 protocol for BACnet®)
- Conformance class 3 (ASHRAE 135–1995)
- Standard BACnet® Device B-ASC (ASHRAE 135–2001)
- Up to 40 outdoor units and 256 indoor unit groups on one gateway. (Optional adaptor)

DMS504B51 Interface for use in LONWORKS®

- XIF file for confirming of specifications of the units.
- Connectable up to 10 outdoor units and 64 indoor unit groups.

Air Conditioning Network Service System

Maintenance services that boost profits and customer satisfaction



- 24 hour on-line diagnostic system
- Energy saving and extension of aircon operating life
- Maintenance management via A/C network service system reports
- Reliable service at shortest lead time

*1. Model name varies upon the system size.

*2. BACnet® is a registered trademark of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).

*3. LONWORKS® is a registered trade mark of Echelon Corporation.

*4. For an I/F unit, one of the following can be selected: **Local Controller**, intelligent touch Controller, or intelligent Manager III.

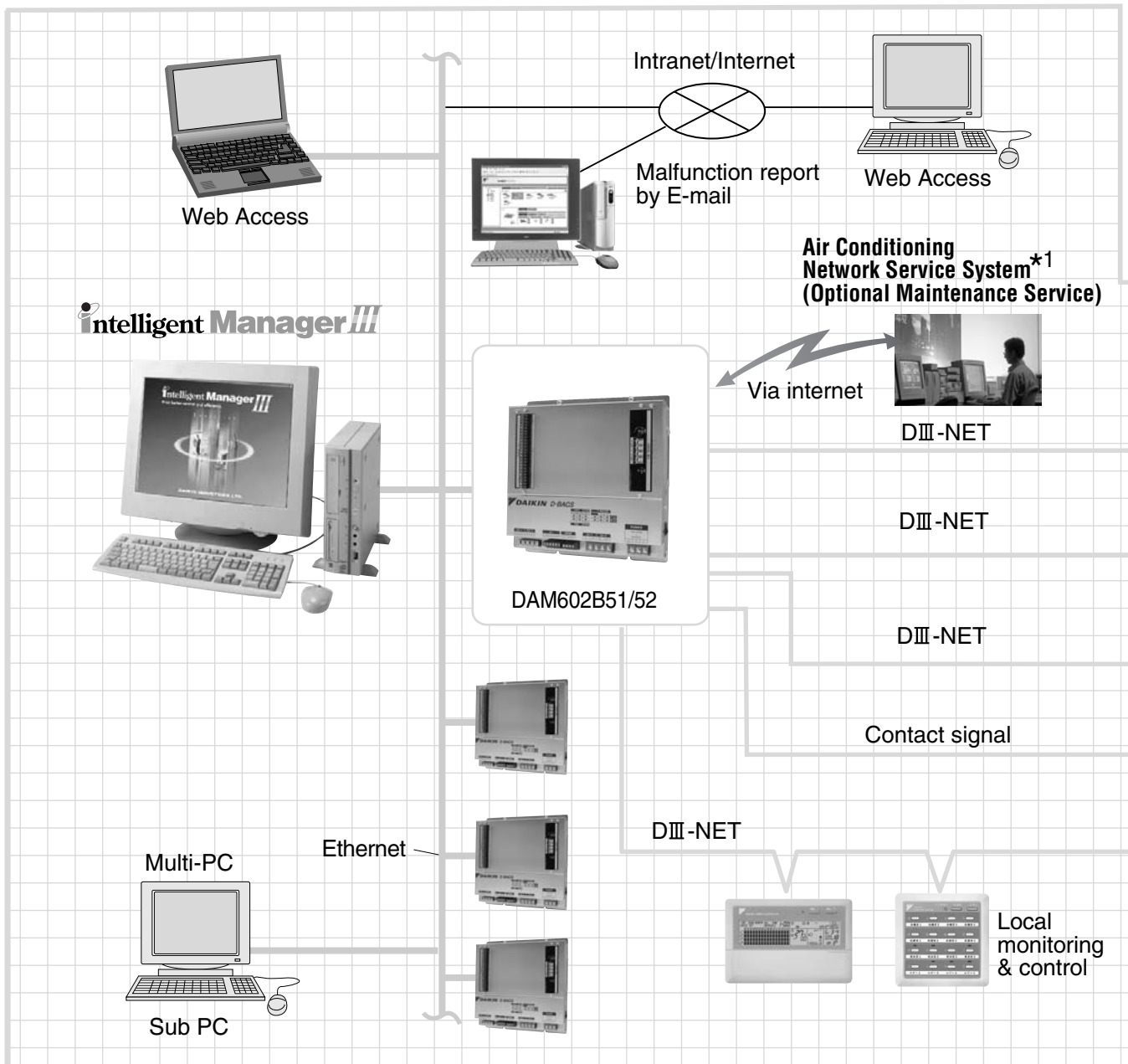
*5. Ethernet is a registered trademark of Xerox Corporation.

*6. Refer to the Options page for the name of each model.

Intelligent Manager III

Centralised control system for easy provision of effective control and monitoring of VRV system functions

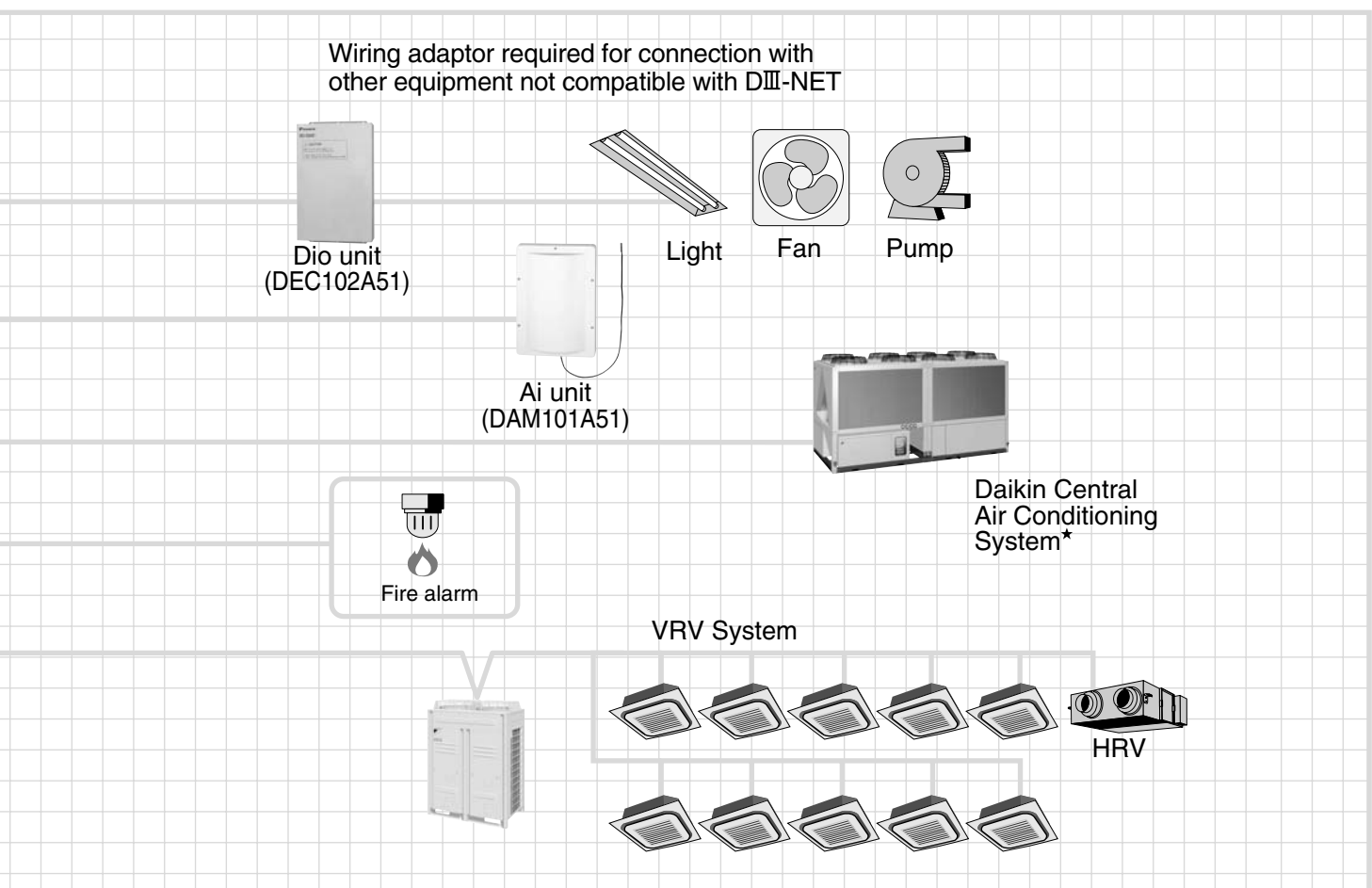
- New Features**
- Monitor and control from the remote site by Web browser (Option)
 - PPD data can be managed from the remote site by Web browser (Option)
 - Send malfunction report through the Internet by E-mail (Option)
 - Compliant with the RoHS Directive (DAM602B51/52)(refer to page 18 for details.)



Special Functions

- Features control and monitoring functions for central A/C products and an Air Conditioning Network Service function.
- Using an external contact via DIII-NET, monitors and controls equipment such as lighting, fans, or building security systems.

- Floor visual navigation
- Graphical report
- Multi-PC access
- Analogue interlock
- Automatic heat/cool change-over
- Temperature limitation
- Sliding temperature <Optional (DAM101A51) unit required>
- Energy saving function (ECONO mode) (Option)
- Air Conditioning Network Service System (Optional Maintenance Service)



- *1. There are restrictions in applicable areas and release times, therefore please consult us separately for details.
 ★Interfacing requirements vary depending on model, and some systems may not be suitable. Please contact your distributor for details.
 • Information on these systems is preliminary only. Please contact Daikin for formal information on the products.

6.7 HRV (Heat Reclaim Ventilation)

6.7.1 Product Introduction

Background

To maintain the comfortable environment in a building, the fresh air intake is essential the same as an appropriate room temperature control.

The heating / cooling efficiency of conventional standard ventilating systems drops during cooling / heating operation and it is waste of energy.

The Heat Reclaim Ventilation was developed to solve those problems.

What is HRV (Heat Reclaim Ventilation) ?

HRV is a system which recovers the thermal energy of exhaust air and reuses it for heating or cooling of supply air. It exchanges heat between the exhaust and the supply air.

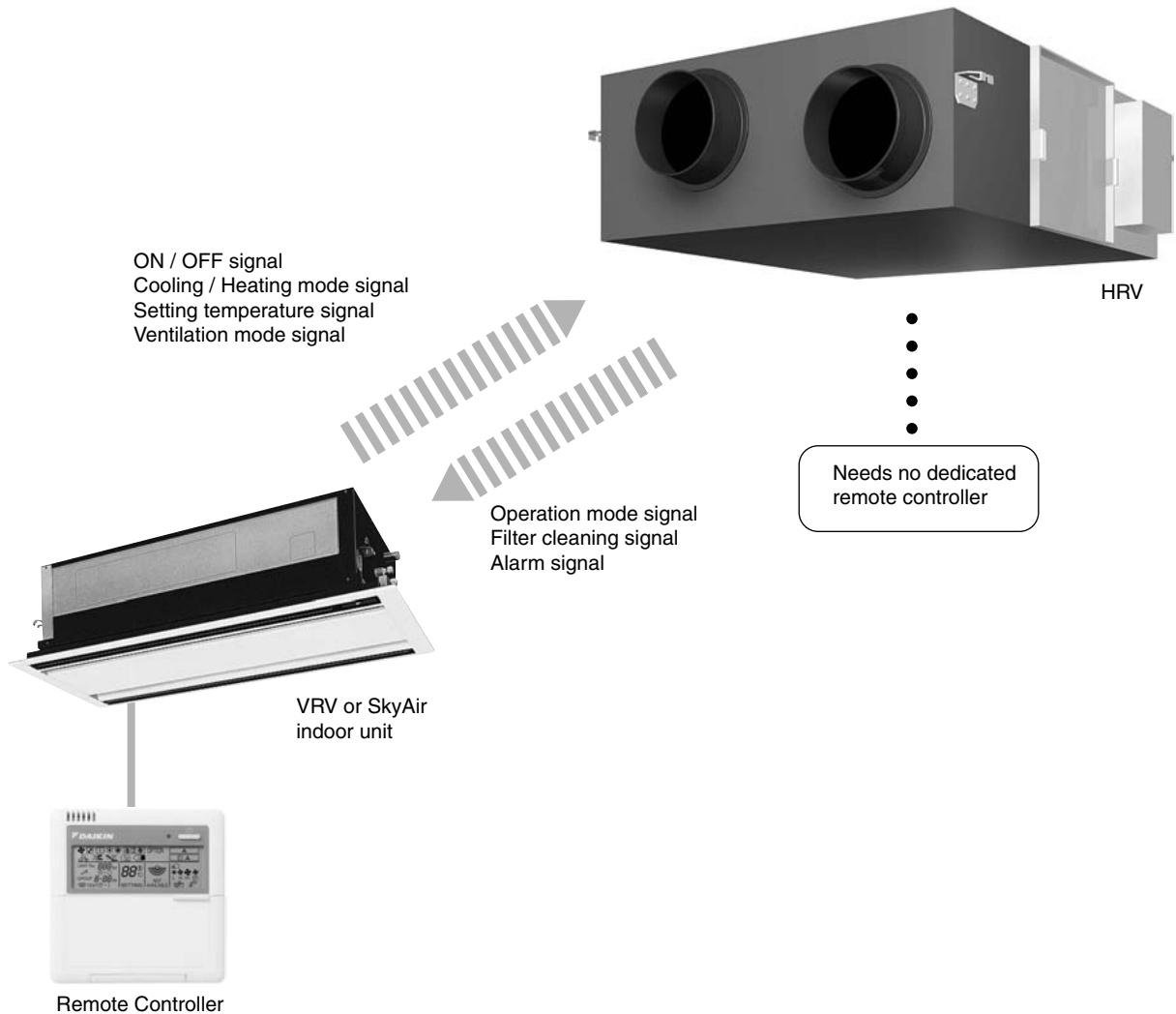
Daikin's HRV

Daikin's HRV greatly reduces the total power consumption by operation interlocked with air conditioner such as VRV or SkyAir.

The total heat exchange mode and the ventilation mode can be automatically selected by setting to the automatic ventilation mode.

Main Features

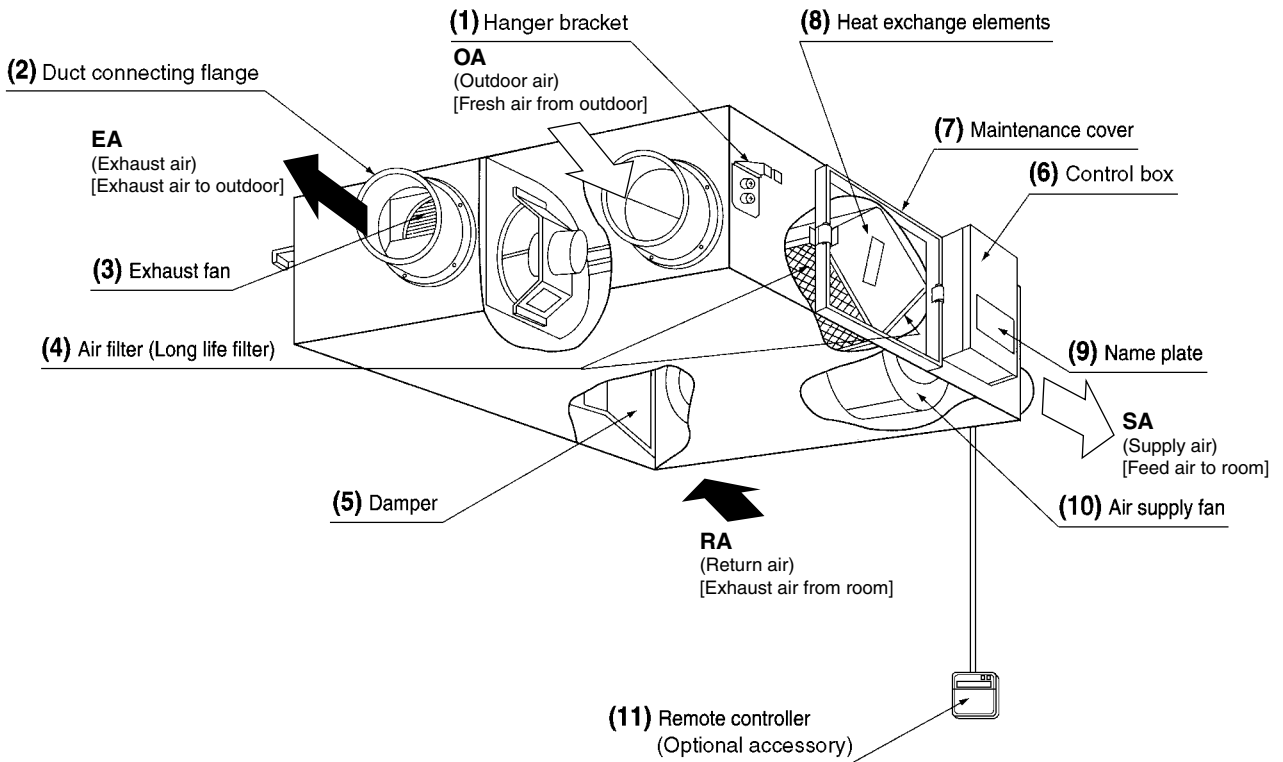
1. The operation is available when the outdoor air temperature is down to -15°C .
2. Interlocked operation with VRV (SkyAir)
3. Automatic ventilation mode changeover
4. Energy Saving
5. FRESH-UP operation
6. Quiet operation
7. Easy installation
8. Easy maintenance
9. Wide variety of optional accessories



(HC0002)

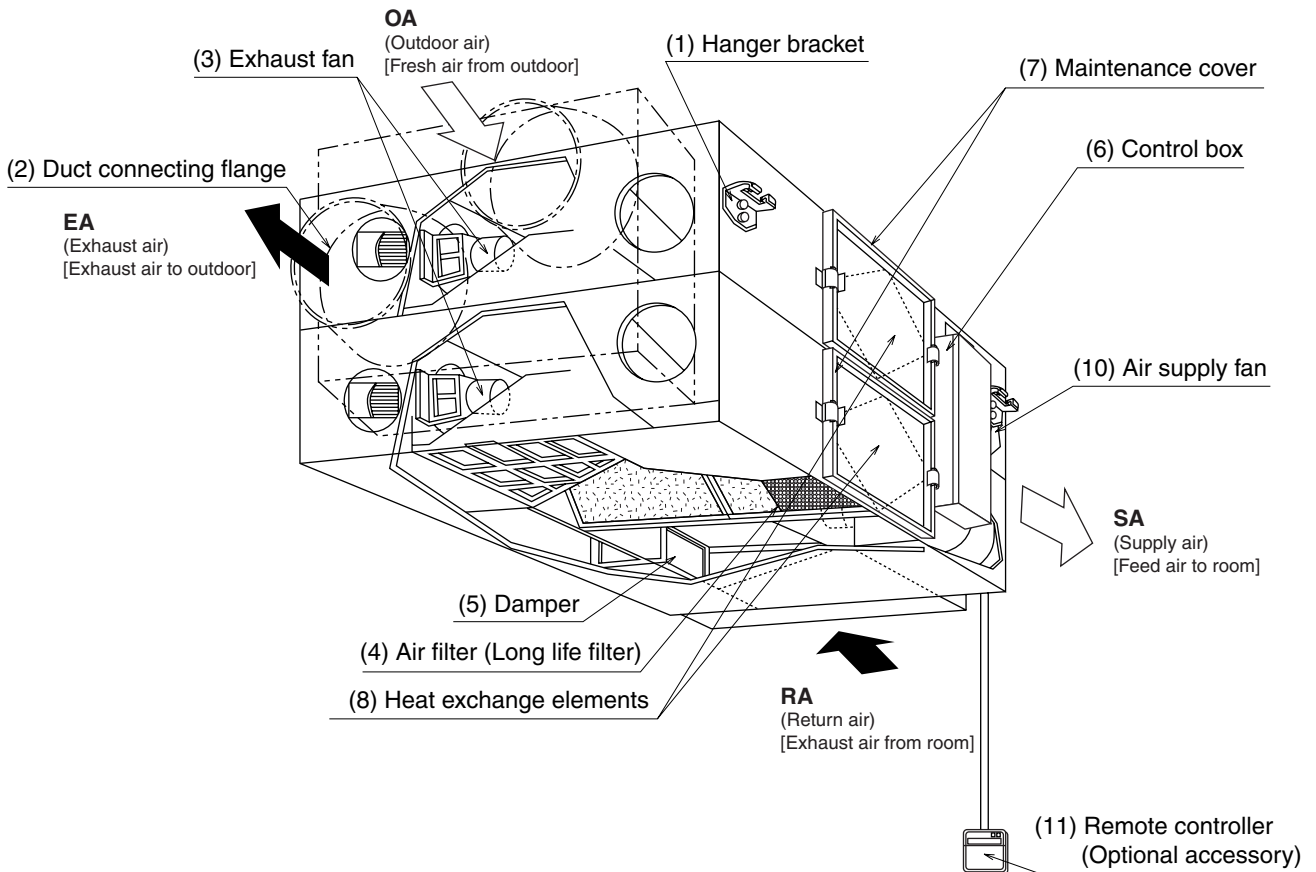
6.7.2 Structure

VAM150GJVE, VAM250GJVE, VAM350GJVE, VAM500GJVE, VAM650GJVE, VAM800GJVE, VAM1000GJVE



3P034927-5J

VAM1500GJVE, VAM2000GJVE



3P034927-5J

6.7.3 Features

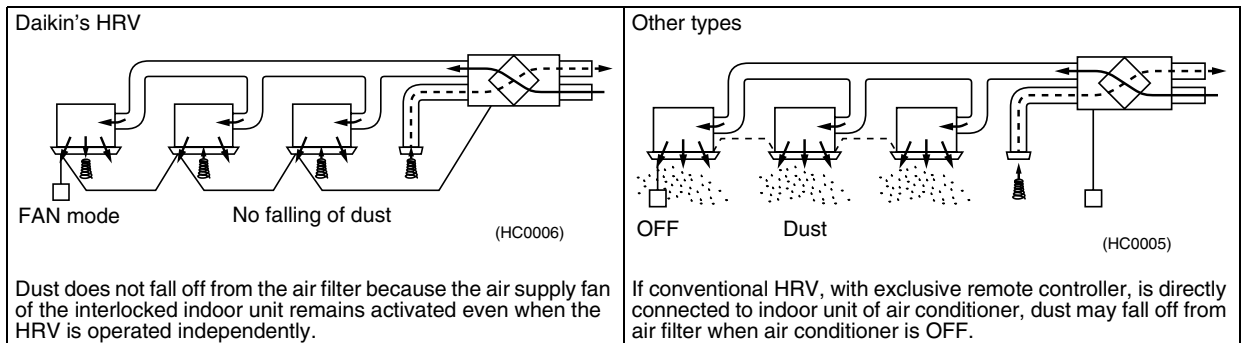
Interlocked Operation with VRV (SkyAir)

1. Simultaneous ON / OFF with the indoor unit by the indoor unit remote controller.
2. HRV independent operation during air conditioning off season by the indoor unit remote controller.
3. Automatic ventilation mode changeover: Auto / Heat Recovery / Bypass
4. Fan speed changeover by the indoor unit remote controller : High / Low (Ultra-High / High, Ultra-High / Low)
5. Precooling / heating control function setting to delay the start of ventilation during air conditioner start-up to realize the high energy saving efficiency.
6. FRESH-UP operation setting
7. Filter sign display notifies the time for cleaning the filter.
8. No need to purchase or install the HRV exclusive remote controller
9. Advantage to IAQ (Internal Air Quality)

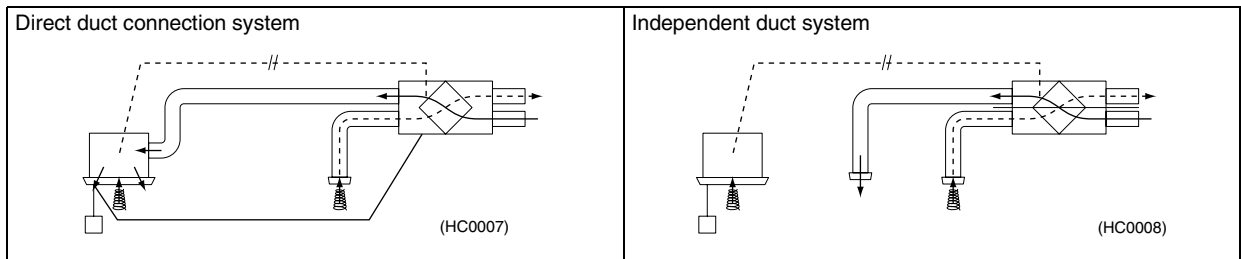
Note:

5,6 can be set at the initial setting only.

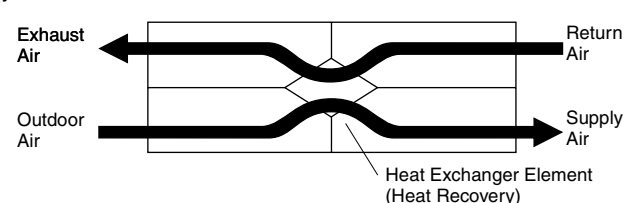
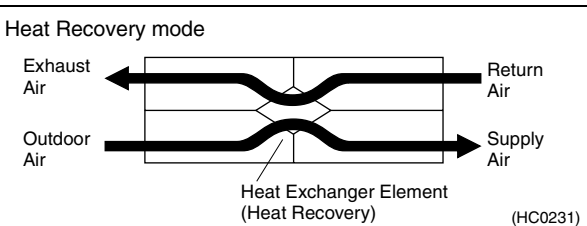
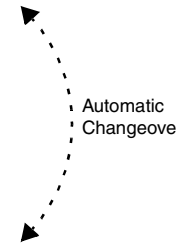
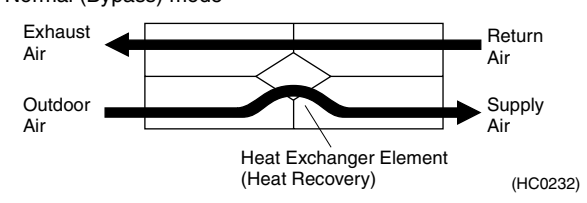
Type	Interlocked operation with air conditioner	HRV independent operation
Structure	<p>(HC0228)</p>	<p>(HC0229)</p>
Features	<ul style="list-style-type: none"> ■ Simultaneous operation by air conditioner's remote controller is available. 	<ul style="list-style-type: none"> ■ Operation / Stop ■ Ventilation mode changeover ■ Fresh-up changeover ■ Timer mode start / stop ■ Malfunction digital display
Connectable Indoor unit	VRV (all indoor unit), SkyAir	



Installation Examples



Energy Saving

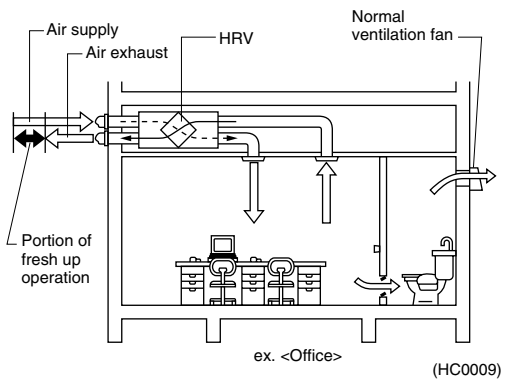
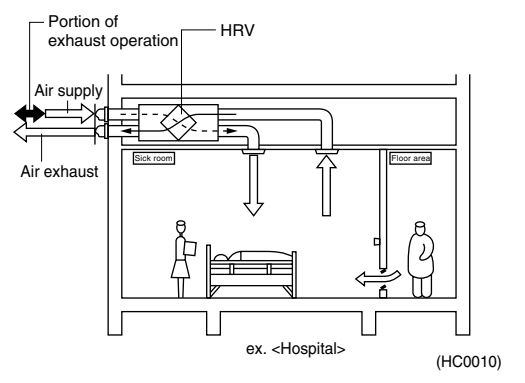
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">By heat recovery operation</div> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; text-align: center; margin: 10px auto; width: 80%;"> Approx. 20% reduction of heating / cooling load </div> <div style="text-align: center; font-size: 2em; margin: 10px auto;">+</div>	<p>HRV unit recovers the thermal energy during cooling / heating operation of air conditioner. HRV reduces the cooling / heating load drastically and enhances the heating / cooling efficiency.</p>  <p style="text-align: right; font-size: small;">(HC0230)</p>													
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">By setting to automatic ventilation mode</div> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; text-align: center; margin: 10px auto; width: 80%;"> Approx. 8% reduction of heating / cooling load </div> <div style="text-align: center; font-size: 2em; margin: 10px auto;">+</div>	<p>Proper use of Heat recovery ventilation and normal ventilation saves energy. When the cooling operation is required in winter, use of heat recovery ventilation is not efficient because the outdoor air temperature is normally lower than that of the indoor. Thus, the proper use of ventilation mode enhances the heating / cooling efficiency.</p> <p>Automatic Ventilation mode changeover</p> <table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th style="width: 15%;">Operation</th> <th style="width: 45%;">Sensor of ventilation Difference between indoor / outdoor temp.</th> <th style="width: 40%;">Decision of mode (Which is more energy efficient?)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Cooling</td> <td>Indoor temp. > Outdoor temp.</td> <td>Normal ventilation (Bypass)</td> </tr> <tr> <td>Indoor temp. < Outdoor temp.</td> <td>Heat recovery ventilation</td> </tr> <tr> <td rowspan="2">Heating</td> <td>Indoor temp. > Outdoor temp.</td> <td>Heat recovery ventilation</td> </tr> <tr> <td>Indoor temp. < Outdoor temp.</td> <td>Normal ventilation (Bypass)</td> </tr> </tbody> </table> <p>Refer to the CONTROL for the mode changeover.</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Heat Recovery mode</p>  <p style="text-align: right; font-size: small;">(HC0231)</p> </div> <div style="width: 45%; text-align: center;"> <p>Automatic Changeover</p>  </div> </div> <div style="width: 45%;"> <p>Normal (Bypass) mode</p>  <p style="text-align: right; font-size: small;">(HC0232)</p> </div>	Operation	Sensor of ventilation Difference between indoor / outdoor temp.	Decision of mode (Which is more energy efficient?)	Cooling	Indoor temp. > Outdoor temp.	Normal ventilation (Bypass)	Indoor temp. < Outdoor temp.	Heat recovery ventilation	Heating	Indoor temp. > Outdoor temp.	Heat recovery ventilation	Indoor temp. < Outdoor temp.	Normal ventilation (Bypass)
Operation	Sensor of ventilation Difference between indoor / outdoor temp.	Decision of mode (Which is more energy efficient?)												
Cooling	Indoor temp. > Outdoor temp.	Normal ventilation (Bypass)												
	Indoor temp. < Outdoor temp.	Heat recovery ventilation												
Heating	Indoor temp. > Outdoor temp.	Heat recovery ventilation												
	Indoor temp. < Outdoor temp.	Normal ventilation (Bypass)												

Note:

The total heating / cooling load may vary depending on the climate or the other environmental conditions.

FRESH-UP Operation

Both the excessive supply mode and the excessive exhaust mode are selectable.
This function creates a more comfortable air environment.

	Supply Fresh-up (Excessive outdoor air supply)	Exhaust Fresh-up (Excessive exhaust air supply)
Detail	Supply air volume can be set at a higher level than the exhaust air by the remote controller.	Exhaust air volume can be set at a higher level than the supply air by the remote controller.
Major effects	<ul style="list-style-type: none"> ■ Prevents inflow of toilet odor ■ Prevents inflow of outdoor air in winter 	<ul style="list-style-type: none"> ■ Prevents outflow of airborne bacteria from rooms in a hospital ■ Prevents outflow of odors from rooms in a nursing home
Application	Offices, etc.	Hospitals, Nursing homes, etc.
Example		

Nighttime free cooling operation

(AUTOMATIC HEAT PORGE FUNCTION AT NIGHT)

The nighttime free cooling is an energy-conserving function which works at night when the air conditioners is off, reducing the cooling load in the morning when the air conditioner is turned on by ventilating rooms which contain office equipment which raises the room temperature.

- Nighttime free cooling only works during cooling and when connected to Building Multi or VRV systems.
- Nighttime free cooling is set to "off" in the factory settings; so request your dealer to turn it on if you intend to use it.

EXPLANATION OF NIGHTTIME FREE COOLING OPERATION IMAGE

The unit compares the indoor and outdoor temperatures after the air conditioning operation stops for the night. If the following conditions are satisfied, the operation starts, and when the indoor temperature reaches the air conditioning setting, the operation stops.

<Conditions>

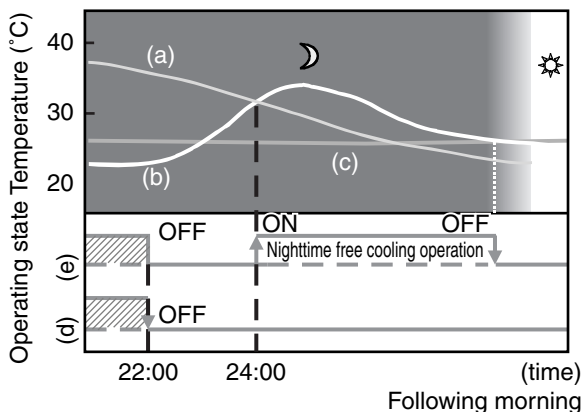
1. the indoor temperature is higher than the air conditioning setting and
2. the outdoor temperature is lower than the indoor temperature,

If the above conditions are not satisfied, revaluation is made every 60 minutes.

NOTE

- The nighttime free cooling operation works when the HRV unit is off. Therefore, it is not possible to stop the nighttime free cooling operation, though the forced off is input from the optional controllers for centralized control.

Operation image



- (a) Outside temperature
- (b) Indoor temperature
- (c) Set temperature
- (d) Operating state of Air conditioner
- (e) Operating state of Total heat exchanger

Element (HEP element) Material

Material

The partition sheet in the heat exchanger element has been significantly upgraded. It is approximately two-third thinner than the conventional type, resulting in a great improvement in moisture absorption!

The material is flame-retardant for safety.

The fungi proof design also keeps the air clean.

Structure

The heat exchanger element is designed without moving parts for higher durability and reliability.

The supply air passage and the exhaust air passage are arranged in right angle to prevent the supply and exhaust air from getting mixed.



(HC0013)

Features

■ High air shielding

Even in the conventional less humidity conditions, maintaining the features of the material that can get excellent moisture permeability, we have achieved high air shielding, by special processing in the step of milling paper.

New ultra-thin film element

Conventional element
Moisture absorption is less effective due to the thickness of the partition sheets. It also limits the effective area that supply and exhaust air can be exposed to.

Thickness of the partition sheet
60 μm

New ultra-thin film element
Due to the thinner film...

- Decreases the moisture resistance of the partition sheets drastically.
- Realizes more space for extra layers in the element, resulting in increased effective area that supply and exhaust air can be exposed to.

Moisture absorption increased by approx. 10%!

Thickness of the partition sheet
40 μm

Newly developed!

Sheet structure

- Molecule of water
- Miscellaneous gas CO2 molecule, etc.

High-humidity air → Exhaust air

40 μm

Precise, thin-film material

Supply air ← Low-humidity air

Moisture exchange efficiency is greatly improved by using optimized thinner films and moisture-absorption materials in the element. Furthermore, miscellaneous gas barrier properties are maintained by decreasing the porosity in the moisture-absorption materials.

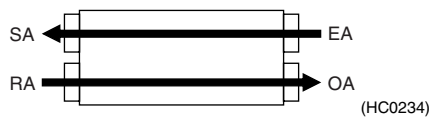
Easy installation and service maintenance

Downsized

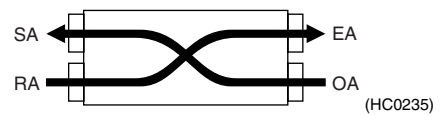
Model name	Height (mm)
VAM150GJVE	278
VAM250GJVE	278
VAM350GJVE	306
VAM500GJVE	306
VAM650GJVE	338
VAM800GJVE	387
VAM1000GJVE	387
VAM1500GJVE	785
VAM2000GJVE	785

Parallel air flow system (Daikin)

This system prevents misconnection and simplifies the installation work



Cross air flow system



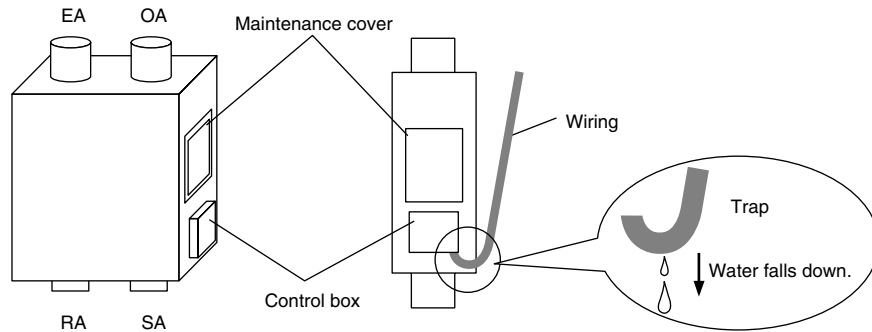
Service Maintenance

Vertical installation is available.

The unit must be installed with the side of RA, SA down.

It is necessary to make a trap.

Because the trap of wiring can protect against ingress of water.

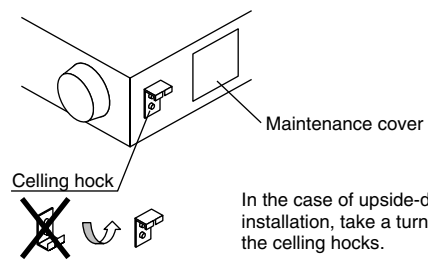
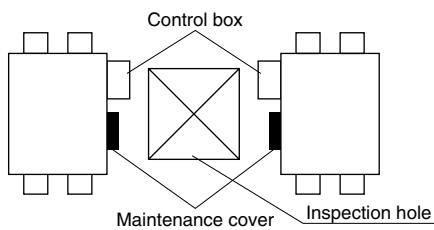


Upside-down installation is available.

It allows the common use of the inspection hole and reduces the space and installation work.

For 2 units closely installed, only one inspection hole of 450 × 450 mm will do for maintenance or replacement of the heat exchanger element, etc.

Long life filter is equipped.



The operation is available when the outdoor air temperature is down to -15°C

(Operation when the outdoor air temperature becomes lower than -10°C)

When the outdoor air suction temperature becomes lower than -10°C, the unit is changed to intermittent operation to prevent freezing of the heat exchanger element and dew condensation within the unit.

Intermittent operation

The outdoor air thermistor (standard equipment) within the unit detects the temperature. According to the detected temperature, the following operation determines.

<Step 1>

- The air supply fan is changed to intermittent operation, when the temperature is lower than -10°C.
- The intermittent operation of the air supply fan is changed to an operation of each cycle for 45 minutes' operation after stopping operation for 15 minutes.
- The exhaust fan operates continuously according to setup.

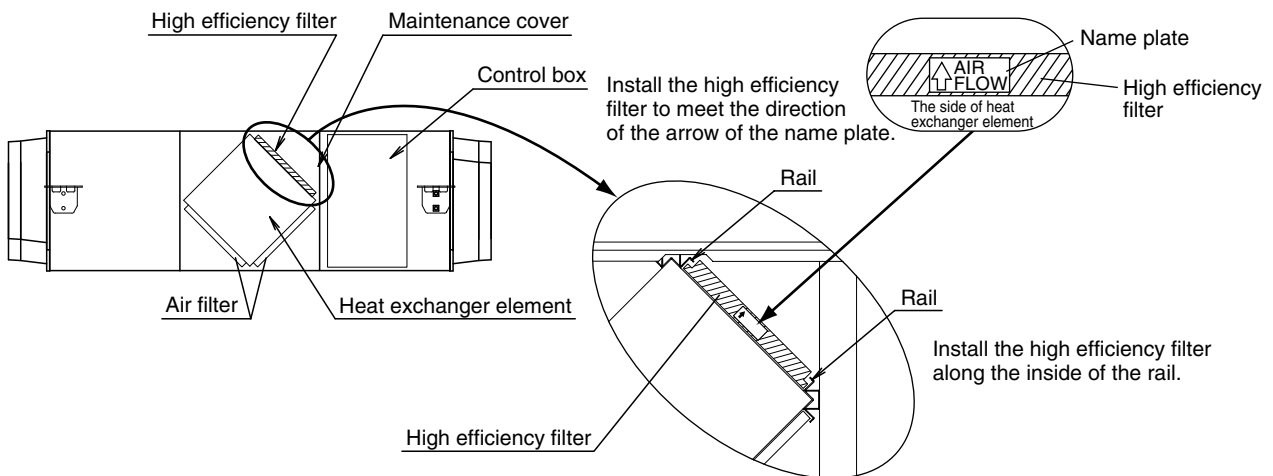
<Step 2>

- When the temperature becomes lower than -15°C, the unit stops operation to prevent any defect, such as dew condensation and freezing. The unit does not ventilate.
But, to detect the elevation of the outdoor air temperature, the unit operates for 5 minutes per hour.
- The control by the external damper (local purchase) is available.
When the unit is not operating, the unit prevents the cool outdoor air from invading.
The power is applied from the connector X15A to the external damper. Therefore, the operation of the unit is controlled in conjunction with the external damper.

Note:

Local setting is required.

The high efficiency filter (that has 65% of average dust collecting efficiency) is suitable



Additional optional accessories

Built-in optional high efficiency filter

BRP4A50: Heater control kit

6.8 HRV-With DX Coil-(Heat Reclaim Ventilation) VKM-GA(M) Series

6.8.1 General

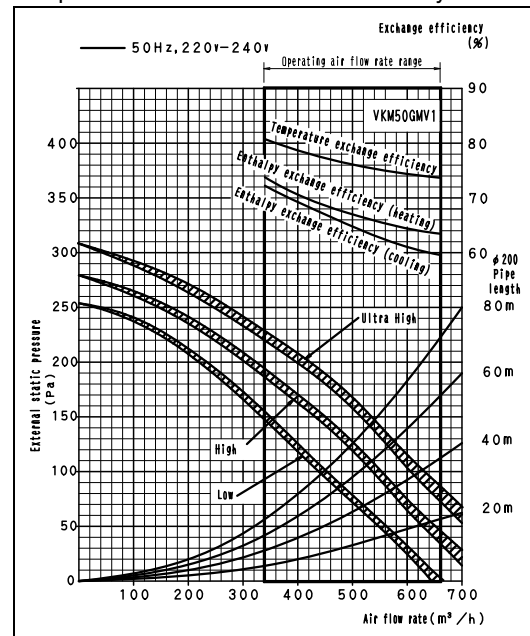
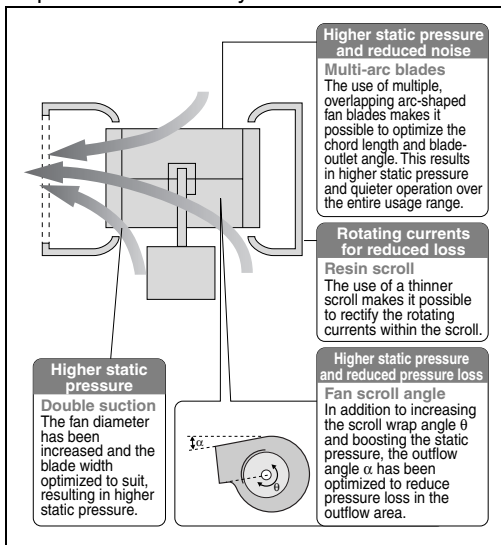
- Interlocked operation with VRV
- (Controls of interlocked operation for energy saving : The remote controller for air conditioner can be used, so special remote controller for HRV is unnecessary.)
- Mounted for Direct expansion coil unit for outdoor air treatment
- Changeover function for ventilation mode to Auto/Manual
- FRESH-UP operation (Selectable : Supply air rich mode or exhaust air rich mode ; initial setting)
- Mounted for Water flow type Natural evaporating humidifier
- Possible to attach the High efficiency filter
- Attaching the Power supply terminal for easy connection
- Quiet operation
- Changeover function for air flow rate to High/Low (Ultra-high setting is possible.)
- The power supply of HRV is commonly used with the air-conditioner (Single-phase 220-240V, 50Hz)
- Filter sign display and reset
- Timer setting
- Features of Direct Expansion Coil
 - Draftless ventilation in Heating.
 - High humidifying function.
- How to use this unit
 - This unit should be used with air conditioners.
 - Air conditioning is impossible only by this unit, because this unit does not have temperature control function. (It's capacity is too small in order to control the room temperature to the whole)
And should be operated in combination with standard indoor units. (Interlocked operation)
 - Independent operation without taking an interlock with indoor units is possible, however, temperature setting by remote controller is impossible.
In this ON/OFF operation by thermostat depends on factory setting, however, this value is changeable by setting mode on site.
 - Model selection should be done not by cooling capacity but by ventilating air flow rate.

6.8.2 Design Flexibility

6.8.2.1 Efficient Fan Performance Produces a High Static Pressure

Improvements to the fan, including the use of multi-arc blades, a thinner scroll and optimized fan scroll angle, help to boost efficiency.

Dramatically higher static pressure is achieved due to improved fan performance. This reduces limitations on unit placement and allows more flexibility in duct design.



6.8.2.2 Operable Outdoor Temperature Down to -15°C

If the outdoor air temperature falls below -10° C, the unit changes to intermittent operation to prevent freezing of the heat exchanger element and dew condensation within the unit.

Intermittent operation

A thermistor (standard equipment) within the unit detects the outdoor air temperature. Unit operation varies according to the detected temperature.

6.8.2.3 Indoor Unit Connectable to up to 130% of the Capacity

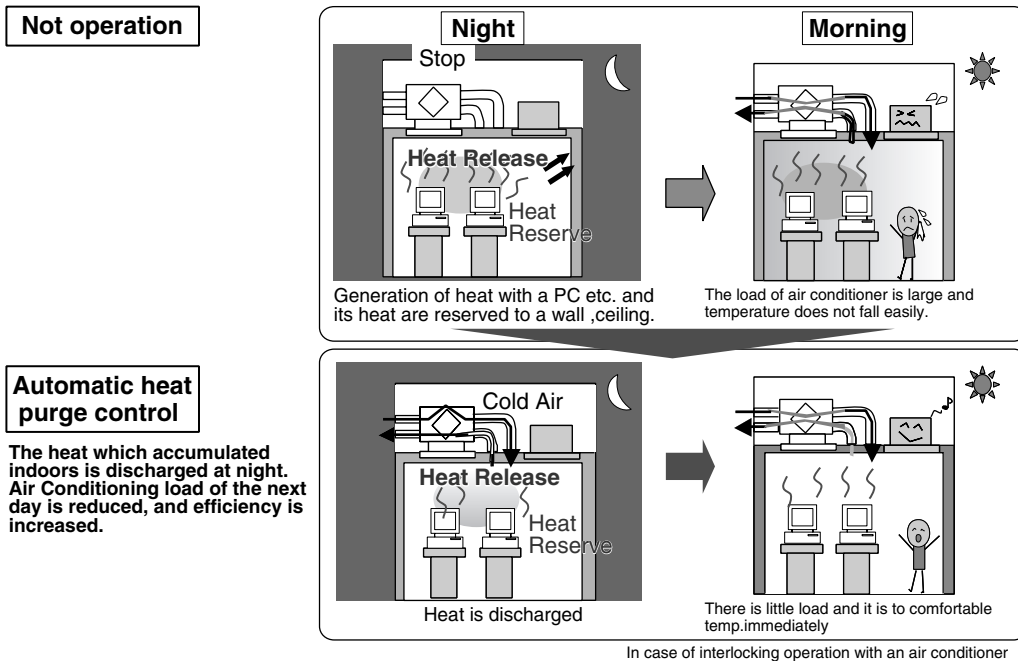
6.8.2.4 Slim Design

The slim design of only 387 mm in height enables installation inside ceilings with less than 400 mm of clearance.



6.8.3 Energy Saving

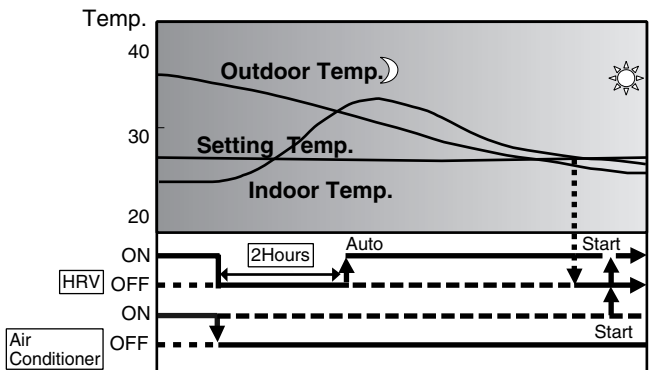
6.8.3.1 Automatic Heat purge Function at Night



■ Mechanism

<Operation>

1. Interlocking operation is carried out with the air-conditioning machine, and the time of 2 hours passing after an operation stop is judged to be night.
(The same judgment as the present preparatory operation)
2. After 2-hour progress, when indoor temperature is higher than the preset temperature of an air-conditioning machine and higher than outdoor temperature, operation is started.
3. Operation will be stopped if indoor temperature falls to air-conditioning machine preset temperature.



■ Effect (Field Setting by remote controller)

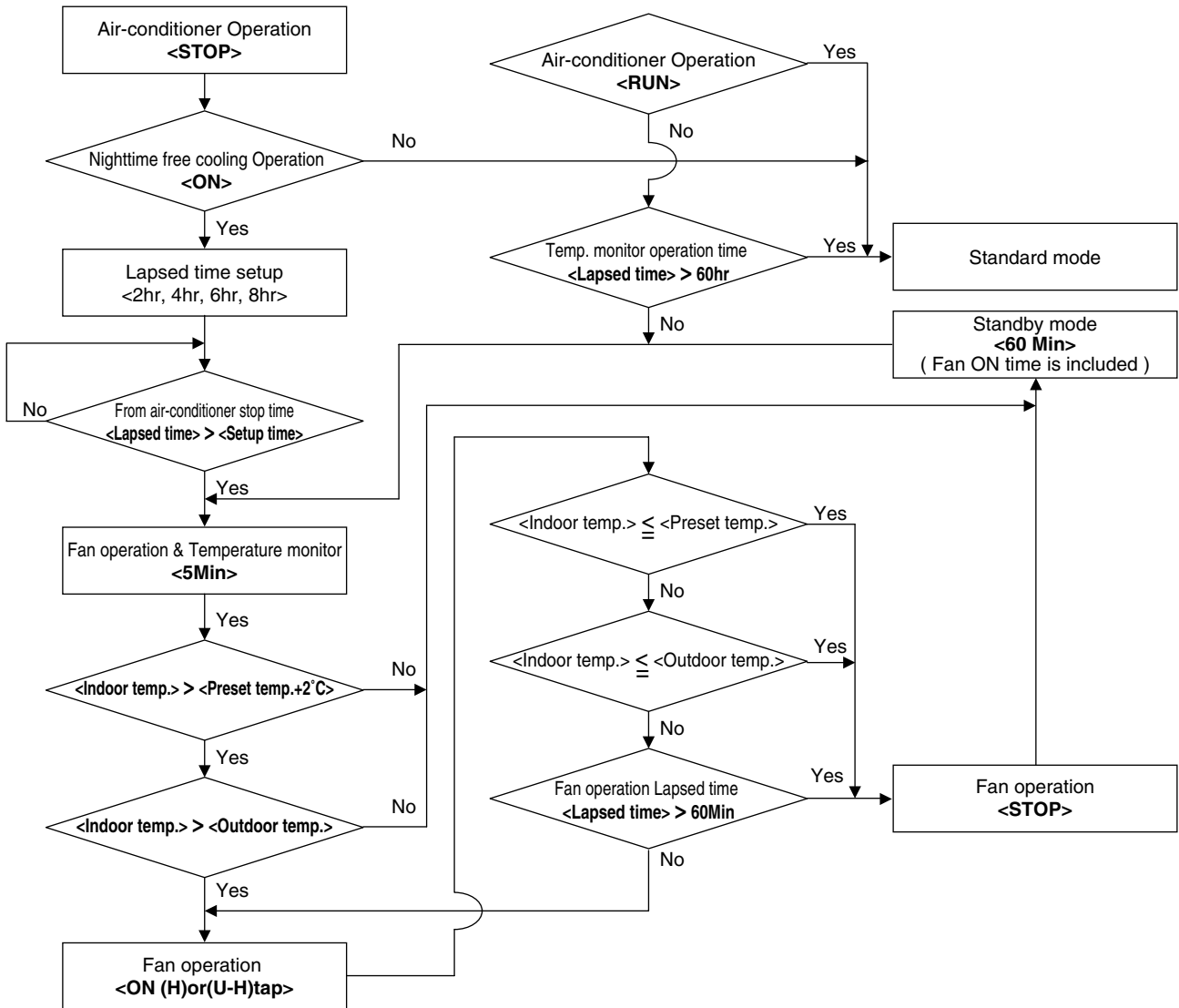
It is reduction of about 5% of air-conditioning load at the time of cooling operation.

Air conditioning operation carries out to April to October, and air-conditioning load is calculated only with sensible heat load.

**Nighttime Free Cooling Operation
<Flow Chart>**

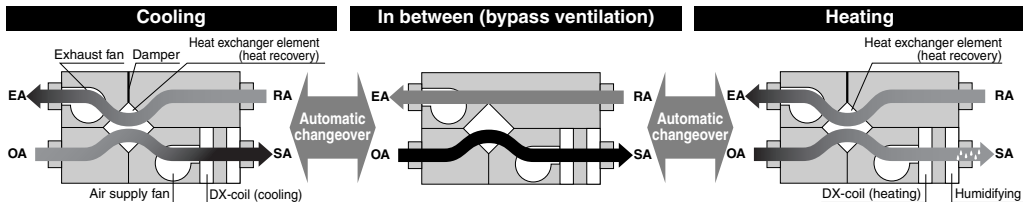
Nighttime Free Cooling Operating Condition

Nighttime Free Cooling Precedent Condition



6.8.3.2 Automatic Changeover to Efficient Operation Patterns

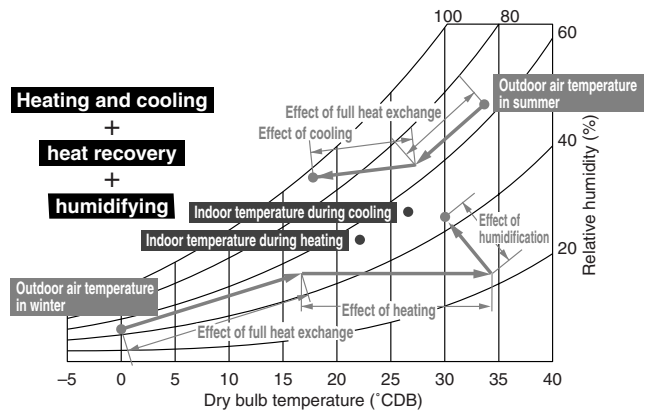
Operation automatically changes to the optimum pattern to suit conditions.



6.8.3.3 Efficient Outdoor Air Introduction with Heat Exchanger and Cooling/heating Operation

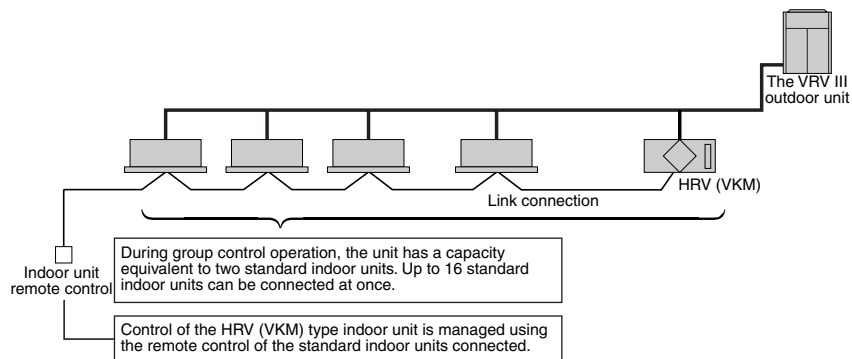
Indoor unit with outdoor air treatment

Using outdoor air, the temperature can be brought near room temperature with minimal cooling capacity through the use of outdoor air.



6.8.3.4 Operations, Such as Cleaning, Ventilation, Cooling/heating and Humidifying, are Possible with One Remote Controller.

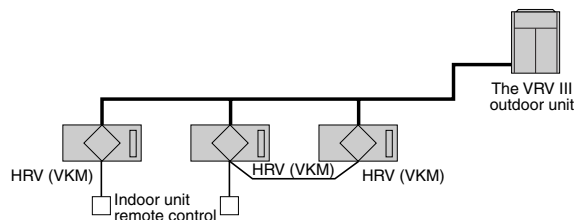
Four air conditioner functions can be managed using a single remote control. This makes it easy to obtain high-quality and energy-efficient outdoor air treatment.



6.8.4 Unique Control System

6.8.4.1 Independent Control Possible

Individual outdoor air treatment operation is possible by connecting an optional remote controller.



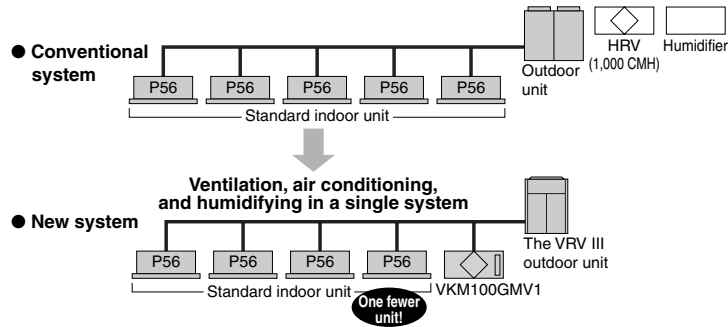
6.8.5 Quiet Operation

Reduced pressure loss and quieter operation internally lowers the noise output of the 1,000m³/h type system to 38dB (50Hz 240V, High mode).

6.8.6 Easy Installation

6.8.6.1 Integrated System Includes Ventilation, Air Conditioning and Humidifying Operations

Rather than using separate ventilation, air conditioning, and humidifying components, the system incorporating HRV (VKM) integrates all functions, reducing the total number of indoor units and facilitating a far simpler system. The installation space becomes smaller and the labor required for installation and maintenance is reduced significantly.



6.8.7 Other Features

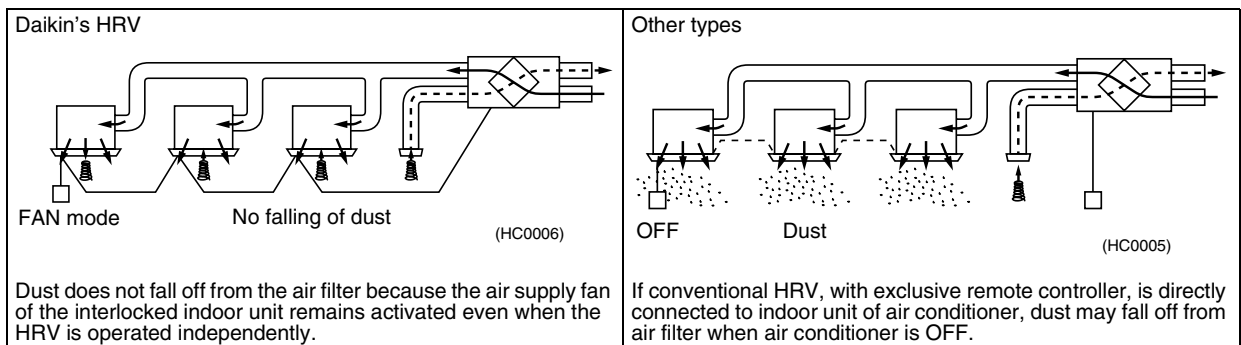
6.8.7.1 Interlocked Operation with VRV

1. Simultaneous ON / OFF with the indoor unit by the indoor unit remote controller.
2. HRV independent operation during air conditioning off season by the indoor unit remote controller.
3. Automatic ventilation mode changeover : Auto / Heat Recovery / Bypass
4. Fan speed changeover by the indoor unit remote controller : High / Low, Ultra-High / High
5. FRESH-UP operation setting
6. Filter sign display notifies the time for cleaning the filter.
7. No need to purchase or install the HRV exclusive remote controller
8. Advantage to IAQ (Internal Air Quality)

Note

4-6 can be set at the initial setting only. (When using the remote controller BRC1C62)

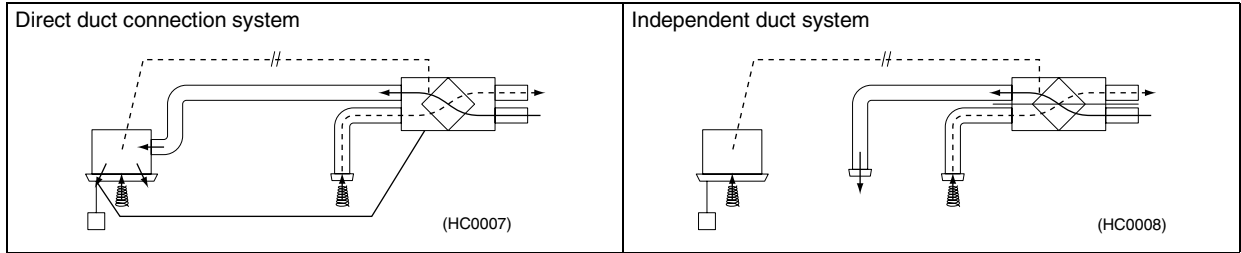
Type	Interlocked operation with air conditioner
Structure	
Features	<ul style="list-style-type: none"> • Simultaneous operation by air conditioner's remote controller is available. • Fan speed can be set at the initial setting.
Connectable Indoor unit	VRV (all indoor unit)



Note

- 1) In case of the direct duct connection system, operate interlocking with indoor units.
- 2) Do not connect the duct with discharge air side of indoor units.

Installation Examples



6.8.7.2 Mechanism of Energy Saving

<p>By heat recovery operation</p> <p>Approx. 20% reduction of heating / cooling load</p> <p style="text-align: center;">+</p>	<p>HRV unit recovers the thermal energy during cooling / heating operation of air conditioner. HRV reduces the cooling / heating load drastically and enhances the heating / cooling efficiency.</p> <p style="text-align: right;">(HC0230)</p>									
<p>By setting to automatic ventilation mode</p> <p>Approx. 6% reduction of heating / cooling load</p> <p style="text-align: center;">+</p> <p style="text-align: center;"> </p>	<p>Proper use of Heat recovery ventilation and normal ventilation saves energy. When the cooling operation is required in winter, use of heat recovery ventilation is not efficient because the outdoor air temperature is normally lower than that of the indoor. Thus, the proper use of ventilation mode enhances the heating / cooling efficiency. Automatic Ventilation mode changeover</p> <table border="1" data-bbox="715 952 1455 1153"> <thead> <tr> <th>Operation</th> <th>Sensor of ventilation</th> <th>Decision of mode (Which is more energy efficient?)</th> </tr> </thead> <tbody> <tr> <td>Cooling</td> <td>Indoor temp. > Outdoor temp. Indoor temp. < Outdoor temp.</td> <td>Normal ventilation (Bypass) Heat recovery ventilation</td> </tr> <tr> <td>Heating</td> <td>Indoor temp. > Outdoor temp. Indoor temp. < Outdoor temp.</td> <td>Heat recovery ventilation Normal ventilation (Bypass)</td> </tr> </tbody> </table> <p>Refer to the CONTROL for the mode changeover.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Heat Recovery mode</p> <p style="text-align: right;">(HC0231)</p> <p>Normal (Bypass) mode</p> <p style="text-align: right;">(HC0232)</p> <p style="text-align: right;">Automatic Changeover</p> </div>	Operation	Sensor of ventilation	Decision of mode (Which is more energy efficient?)	Cooling	Indoor temp. > Outdoor temp. Indoor temp. < Outdoor temp.	Normal ventilation (Bypass) Heat recovery ventilation	Heating	Indoor temp. > Outdoor temp. Indoor temp. < Outdoor temp.	Heat recovery ventilation Normal ventilation (Bypass)
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Cooling	Indoor temp. > Outdoor temp. Indoor temp. < Outdoor temp.	Normal ventilation (Bypass) Heat recovery ventilation								
Heating	Indoor temp. > Outdoor temp. Indoor temp. < Outdoor temp.	Heat recovery ventilation Normal ventilation (Bypass)								
<p>Total 26% reduction of heating / cooling load</p>	<p>Reduction of heating / cooling load (%)</p> <table border="1" data-bbox="810 1720 1412 1881"> <tr> <td style="text-align: center;">0%</td> <td style="text-align: center;">20%</td> <td style="text-align: center;">26%</td> </tr> <tr> <td style="text-align: center;">Normal operation</td> <td style="text-align: center;">HRV independent operation</td> <td style="text-align: center;">Interlocked operation (HC0233)</td> </tr> </table>	0%	20%	26%	Normal operation	HRV independent operation	Interlocked operation (HC0233)			
0%	20%	26%								
Normal operation	HRV independent operation	Interlocked operation (HC0233)								

Note :

The total heating / cooling load may vary depending on the climate or the other environmental conditions.

6.8.7.3 Fresh-up Operation

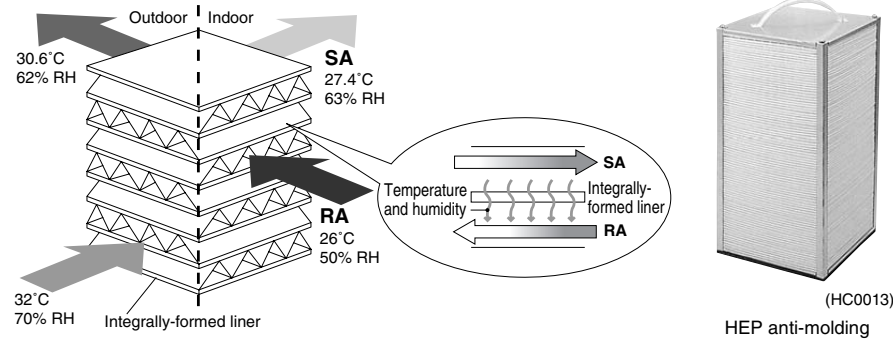
Both the excessive supply mode and the excessive exhaust mode are selectable. This function creates a more comfortable air environment.

	Supply Fresh-up (Excessive outdoor air supply)	Exhaust Fresh-up (Excessive exhaust air supply)
Detail	Supply air volume can be set at a higher level than the exhaust air by the remote controller.	Exhaust air volume can be set at a higher level than the supply air by the remote controller.
Major effects	<ul style="list-style-type: none"> Prevents inflow of toilet odor Prevents inflow of outdoor air in winter 	<ul style="list-style-type: none"> Prevents outflow of airborne bacteria from rooms in a hospital Prevents outflow of odors from rooms in a nursing home
Application	Offices, etc.	Hospitals, Nursing homes, etc.
Example		

6.8.7.4 Proprietary Developed HEP Element

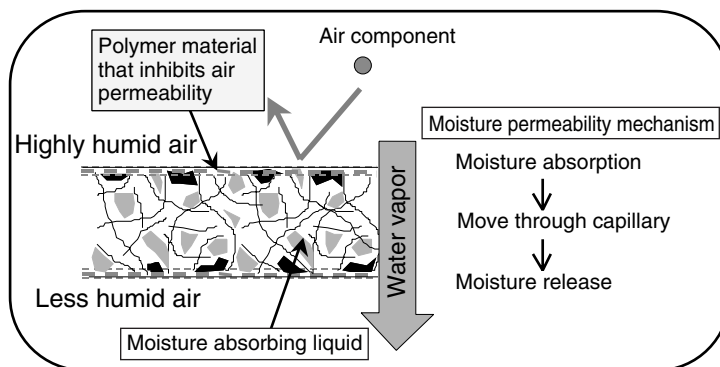
The heat exchange element uses a High Efficiency Paper (HEP) that has superior moisture-absorption and humidifying properties and doubles the current efficiency of moisture absorption. The heat exchange unit speedily recovers heat contained as latent heat (vapor). The element is made of a material with superior flame-resistant properties and is treated with an anti-molding agent.

Operation of the heat exchanger element



Features

- High air shielding
Even in the conventional less humidity conditions, maintaining the features of the material that can get excellent moisture permeability, we have achieved high air shielding, by special processing in the step of milling paper.



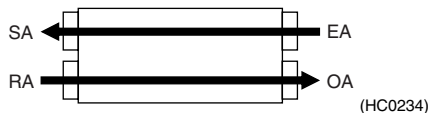
- Polymer material that inhibits air permeability that treated on the surface of the heat exchanger element restrains air permeability.

6.8.7.5 Easy Installation and Service Maintenance Downsized

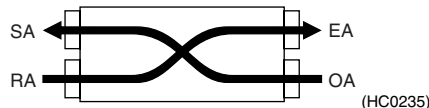
Model name	Height (mm)
VKM50GAMV1	387
VKM50GAV1	
VKM80GAMV1	
VKM80GAV1	
VKM100GAMV1	
VKM100GAV1	

Parallel air flow system (Daikin)

This system prevents misconnection and simplifies the installation work



Cross air flow system (Others)



6.8.7.6 The Operation is Available When the Outdoor Air Temperature is Down to -15°C

(Operation when the outdoor air temperature becomes lower than -10°C)

When the outdoor air suction temperature becomes lower than -10°C, the unit is changed to intermittent operation to prevent freezing of the heat exchanger element and dew condensation within the unit.

Intermittent operation

The outdoor air thermistor (standard equipment) within the unit detects the temperature. According to the detected temperature, the following operation determines.

<Step1>

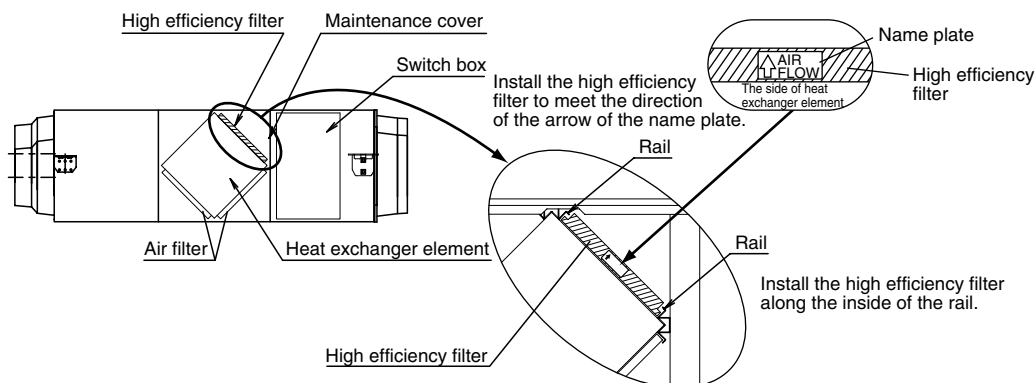
- The air supply fan is changed to intermittent operation, when the temperature is lower than -10°C.
- The intermittent operation of the air supply fan is changed to an operation of each cycle for 45 minutes' operation after stopping operation for 15 minutes.
- The exhaust fan operates continuously according to setup.

<Step2>

- When the temperature becomes lower than -15°C, the unit stops operation to prevent any defect, such as dew condensation and freezing. The unit does not ventilate.

But, to detect the elevation of the outdoor air temperature, the unit operates for 5 minutes per hour.

6.8.7.7 The High Efficiency Filter (that has 65% of Average Dust Collecting Efficiency) is Suitable



6.8.7.8 Additional Optional Accessories

Built-in optional high efficiency filter

It greatly reduces the installation space.

The installation of access doors and the unit can be reduced.

■ Selection Procedures (in Japan)

Various methods are used to calculate the required ventilating air flow rate according to CO₂ generated by inhabitants in a room, waste gas generated by use of fire, and other conditions of a room.

Here are 2 patterns of calculating methods.

Based on inhabitants

$$\text{Required ventilating air flow rate (m}^3/\text{h)} = \frac{20 \times A}{B}$$

A : 20 × Living room floor space (m²)

B : Area occupied per person (m²)

The above equation conforms to article 20, 2 No.2 of the Building Standards Act in Japan.

Note :

1. 20 (in the above equation) means “20(m³ / h / person)”, which is the required ventilating air flow rate based on the CO₂ exhausted by an adult sitting still in a room. If smoking is allowed, other calculation method should be used.
2. Use 10 (m²) if the area occupied per person exceeds 10 (m²).

<Table 1>

Type of building	Area occupied per person (N)	Remarks
Dining houses, restaurants, coffee-shops	3 m ²	Floor space of a part used for business purposes.
Cabarets, beer halls	2 m ²	Floor space of a part used for business purposes.
Japanese-style restaurants, hall for hire	3 m ²	Floor space of a part used for business purposes.
Store market	3 m ²	Floor space of a part used for business purposes.
Pool rooms, Ping-pong rooms, dance halls, bowling alleys	2 m ²	Floor space of a part used for business purposes.
Pin-ball parlors, Go club houses, mahjong parlors	2 m ²	Floor space of a part used for business purposes.
Inns, hotels, and motels	10 m ²	Floor space of a part used for business purposes.
Massage parlors	5 m ²	Floor space of a part used for business purposes.
Meeting places, public halls	0.5 – 1 m ²	Persons accommodated simultaneously with the number of persons calculated per unit.
Offices	5 m ²	Floor space of an office.

* : Values set by the Metropolitan Maintenance Bureau in Japan.

Note :

1. Table indicates the required ventilating air flow rate calculated as 20 m³ / h.
2. The area occupied per person by type of business is calculated in reference to Application Standards for building administration in compliance with Building Standards Act in Japan.

Based on Room size

$$\text{Required ventilating air flow rate (m}^3/\text{h)} = C \times D \times E$$

C : Number of ventilation required per hour (ventilation / h)

D : Area of room (m²)

E : Height of Ceiling (m)

Calculation is based on the experiences of hygienic laboratory, etc. to find out the number of hourly ventilation of the room air.

(Selection example)

Place : Living room of common household

Required ventilation : 6 times / h (See Table 2)

Area of room : Approx. 30 (m²)

Height of ceiling : 2.4 m

Required ventilating air flow rate = 6 × 30 × 2.4 = 432 (m³ / h)

Required ventilating air flow rate and the unit size 500 is almost equal.

So select the close size of the unit.

In this case, select VKM500GMV1.

<Table 2>

Groups	Type of room	Ventilation required	Groups	Type of room	Ventilation required	
Common household	Living room	6	Playhouses and movie theaters	Audience room	6	
	Bathroom	6		Corridor	6	
	Drawing room	6		Smoking room	12	
	Toilet	10		Toilet	12	
	Kitchen	15		Projector room	20	
Dining places	Restaurant	6	Plants	Office room	6	
	Sushi restaurant	6		General work room	6	
	Banquet hall	10		Telephone room	6	
	Tempura restaurant	20		Spinning plant,	10	
	Cooking room	20		Printing plant	10	
Inns and hotels	Guest room	5		Battery room	10	
	Corridor	5		Machinery plant	10	
	Dance hall	8		Generator room	15	
	Large dining hall	8		Substation room,	15	
	Washroom, Toilet	10		Painting shop,	15	
	Cooking room	15		Welding plant	15	
	Laundry room	15		Chemical plant	15	
	Engine room	20		Food plant	20	
	Boiler room	20		Wood working plant	20	
Hospitals	Consultation office	6		Office room	6	
	Sick room	6		Waiting room	10	
	Office room	6	Show room, Toilet	10		
	Corridor	10	Conference room	12		
	Waiting room	10	Comfort stations	20		
	Bathroom	10	Dark rooms	Dark rooms for photo	16	
	Dining room, Toilet	10	Guest rooms of ship		6	
	Respiratory disease room	10	Room of potential noxious gas or combustible gas		20 or more	
	Laundry room	15				
	Cooking room	15				
	Surgery room	15				
	Sterilizing room	15				
	Engine room	20				
	Boiler room	20				
	Schools	Class room, library	6			
		Auditorium	6			
		Experimental chemistry room	6			
Gymnasium		8				
Toilet		12				
Cooking room		15				

Part 2

Indoor Units

FXFQ-P Ceiling Mounted Cassette Type (Round Flow)	47
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FXMQ-P Ceiling Mounted Duct Type (Middle and High Static Pressure)	243
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FXHQ-MA Ceiling Suspended Type	315
FXAQ-MA Wall Mounted Type	331
FXLQ-MA / FXNQ-MA Floor Standing Type / Concealed Floor Standing Type	359
FXUQ-MA Ceiling Suspended Cassette Type (Connection Unit Series)	381

FXFQ-P Ceiling Mounted Cassette Type (Round Flow)

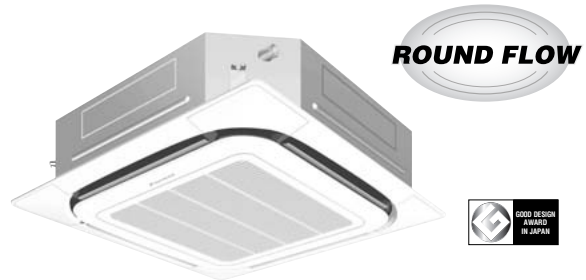
2

1. Features	48
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1. Features

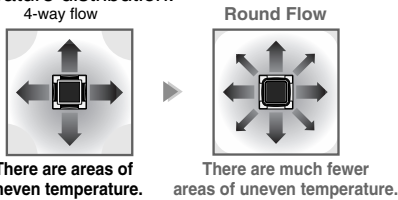
Ceiling Mounted Cassette (Round Flow) Type

New FXFQ25P/FXFQ32P/FXFQ40P
 FXFQ50P/FXFQ63P/FXFQ80P
 FXFQ100P/FXFQ125P



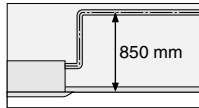
360° airflow improves temperature distribution and offers a comfortable living environment.

- The industry's first* Round Flow Ceiling Mounted Cassette type offers 360° airflow with improved temperature distribution.

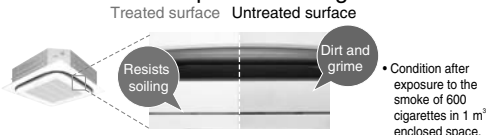


* As of April 2004, the release date for Japan.

- All models are lighter than the conventional ones. Ex: Models FXFQ25P-50P are 4.5 kg lighter (reduced from 24 kg to 19.5 kg).
- Drain pump is equipped as standard accessory, and the lift height has been improved from 750 mm to 850 mm.



- A modern sophisticated decoration panel has been applied, with a panel surface that has been treated with a dirt-repellant coating.



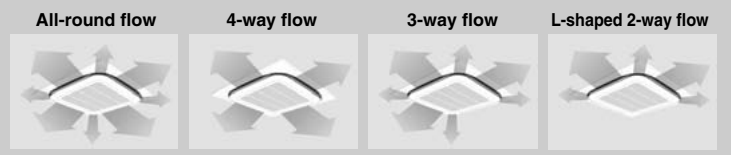
- Control of the airflow rate has been improved from 2-step to 3-step control.

Low operation sound level (dB(A))

FXFQ-P	25	32	40	50	63	80	100	125
Sound level (HH/H/L)	30/28.5/27	31/29/27	32/29.5/27	34/31/28	36/33.5/31	43/37.5/32	44/39/34	

- A new antibacterial treatment that uses silver ions has been applied to the drain pan, preventing the growth of slime, mould and bacteria that cause blockages and odours.
- The horizontal louvres prevent dew condensation. Their non-flocking surfaces, which repel dirt, are easy to clean.
- The air filter has an anti-mould and antibacterial treatment that prevents the growth of mould generated from dust or moisture that may adhere to the filter.

- Example of airflow patterns: 360° airflow is available, as well as 2- to 4-way flows, so you can choose the most suitable airflow pattern depending on location or room layout.



Note: Whatever the discharge direction, the same type of panel is used. If installing for other than all-round flow, an air discharge outlet sealing member (option) must be used to close each unused outlet.

2. Specifications

2

Ceiling Mounted Cassette (Round Flow) Type

Model		FXFQ25PVE	FXFQ32PVE	FXFQ40PVE	FXFQ50PVE	
*1 Cooling Capacity (19.5°CWB)	kcal/h	2,500	3,200	4,000	5,000	
	Btu/h	9,900	12,600	16,000	19,800	
	kW	2.9	3.7	4.7	5.8	
*2 Cooling Capacity (19.0°CWB)	kW	2.8	3.6	4.5	5.6	
Casing		Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	
Dimensions: (HxWxD)		mm	246x840x840	246x840x840	246x840x840	
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm	2x6x1.2	2x6x1.2	2x6x1.2	
	Face Area	m ²	0.267	0.267	0.267	
Fan	Model		QTS48C15M	QTS48C15M	QTS48C15M	QTS48C15M
	Type		Turbo Fan	Turbo Fan	Turbo Fan	Turbo Fan
	Motor Output x Number of Units	W	56x1	56x1	56x1	56x1
	Air Flow Rate (HH/H/L)	m ³ /min	13/11.5/10	13/11.5/10	15/13/11	16/13.5/11
		cfm	459/406/353	459/406/353	530/459/388	565/477/388
Drive		Direct 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	Microprocessor Thermostat for Cooling and Heating	
Sound Absorbing Thermal Insulation Material		Polyurethane Form	Polyurethane Form	Polyurethane Form	Polyurethane Form	
Piping Connections	Liquid Pipes	mm	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)
	Gas Pipes	mm	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Mass (Weight)	kg	19.5	19.5	19.5	19.5	
*4 Sound Level (HH/H/L) (220-240V)	dBA	30/28.5/27	30/28.5/27	31/29/27	32/29.5/27	
Safety Devices		Fuse	Fuse	Fuse	Fuse	
Refrigerant Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	
Connectable Outdoor Unit		R-410A VRV PA Series	R-410A VRV PA Series	R-410A VRV PA Series	R-410A VRV PA Series	
Decoration Panels (Option)	Model		BYCP125K-W1	BYCP125K-W1	BYCP125K-W1	BYCP125K-W1
	Panel Color		Fresh White	Fresh White	Fresh White	Fresh White
	Dimensions: (HxWxD)	mm	50x950x950	50x950x950	50x950x950	50x950x950
	Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
Weight		kg	5.5	5.5	5.5	5.5
Standard Accessories		Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Washer Fixing Plate. Sealing Pads. Clamps. Screws. Washer for Hanging Bracket. Insulation for Fitting. Installation Guide.				
Drawing No.		C : 3D060255				

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
 *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
 *3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
 *4 Anechoic chamber conversion value, measured at a point 1.5 m downward from the unit centre. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
 5 Refer to page 56 for Fan Motor Input.

Conversion Formulae

$$\begin{aligned} \text{kcal/h} &= \text{kW} \times 860 \\ \text{Btu/h} &= \text{kW} \times 3412 \\ \text{cfm} &= \text{m}^3/\text{min} \times 35.3 \end{aligned}$$

Ceiling Mounted Cassette (Round Flow) Type

Model		FXFQ63PVE	FXFQ80PVE	FXFQ100PVE	FXFQ125PVE	
*1 Cooling Capacity (19.5°CWB)	kcal/h	6,300	8,000	10,000	12,500	
	Btu/h	24,900	31,700	39,600	49,500	
	kW	7.3	9.3	11.6	14.5	
*2 Cooling Capacity (19.0°CWB)	kW	7.1	9.0	11.2	14.0	
Casing		Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	
Dimensions: (HxWxD)		mm 246x840x840	mm 246x840x840	mm 288x840x840	mm 288x840x840	
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm 2x10x1.2	mm 2x10x1.2	mm 2x12x1.2	mm 2x12x1.2	
	Face Area	m ² 0.446	m ² 0.446	m ² 0.535	m ² 0.535	
Fan	Model	QTS48C15M	QTS48C15M	QTS48C15M	QTS48C15M	
	Type	Turbo Fan	Turbo Fan	Turbo Fan	Turbo Fan	
	Motor Output x Number of Units	W 56x1	W 56x1	W 120x1	W 120x1	
	Air Flow Rate (HH/H/L)	m ³ /min	19/16.5/13.5	21/18/15	32/26/20	33/28/22.5
		cfm	671/583/477	742/636/530	1,130/918/706	1,165/989/794
Drive	Direct 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	Microprocessor Thermostat for Cooling and Heating	
Sound Absorbing Thermal Insulation Material		Polyurethane Form	Polyurethane Form	Polyurethane Form	Polyurethane Form	
Piping Connections	Liquid Pipes	mm φ9.5 (Flare Connection)	mm φ9.5 (Flare Connection)	mm φ9.5 (Flare Connection)	mm φ9.5 (Flare Connection)	
	Gas Pipes	mm φ15.9 (Flare Connection)	mm φ15.9 (Flare Connection)	mm φ15.9 (Flare Connection)	mm φ15.9 (Flare Connection)	
	Drain Pipe	mm VP25 (External Dia. 32 Internal Dia. 25)	mm VP25 (External Dia. 32 Internal Dia. 25)	mm VP25 (External Dia. 32 Internal Dia. 25)	mm VP25 (External Dia. 32 Internal Dia. 25)	
Mass (Weight)	kg	22	22	25	25	
*4 Sound Level (HH/H/L) (220-240V)	dBA	34/31/28	36/33.5/31	43/37.5/32	44/39/34	
Safety Devices		Fuse	Fuse	Fuse	Fuse	
Refrigerant Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	
Connectable Outdoor Unit		R-410A VRV PA Series	R-410A VRV PA Series	R-410A VRV PA Series	R-410A VRV PA Series	
Decoration Panels (Option)	Model	BYCP125K-W1	BYCP125K-W1	BYCP125K-W1	BYCP125K-W1	
	Panel Color	Fresh White	Fresh White	Fresh White	Fresh White	
	Dimensions: (HxWxD)	mm 50x950x950	mm 50x950x950	mm 50x950x950	mm 50x950x950	
	Air Filter	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	
	Weight	kg 5.5	kg 5.5	kg 5.5	kg 5.5	
Standard Accessories		Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Washer Fixing Plate. Sealing Pads. Clamps. Screws. Washer for Hanging Bracket. Insulation for Fitting. Installation Guide.	Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Washer Fixing Plate. Sealing Pads. Clamps. Screws. Washer for Hanging Bracket. Insulation for Fitting. Installation Guide.	Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Washer Fixing Plate. Sealing Pads. Clamps. Screws. Washer for Hanging Bracket. Insulation for Fitting. Installation Guide.	Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Washer Fixing Plate. Sealing Pads. Clamps. Screws. Washer for Hanging Bracket. Insulation for Fitting. Installation Guide.	
Drawing No.		C : 3D060255				

Note:

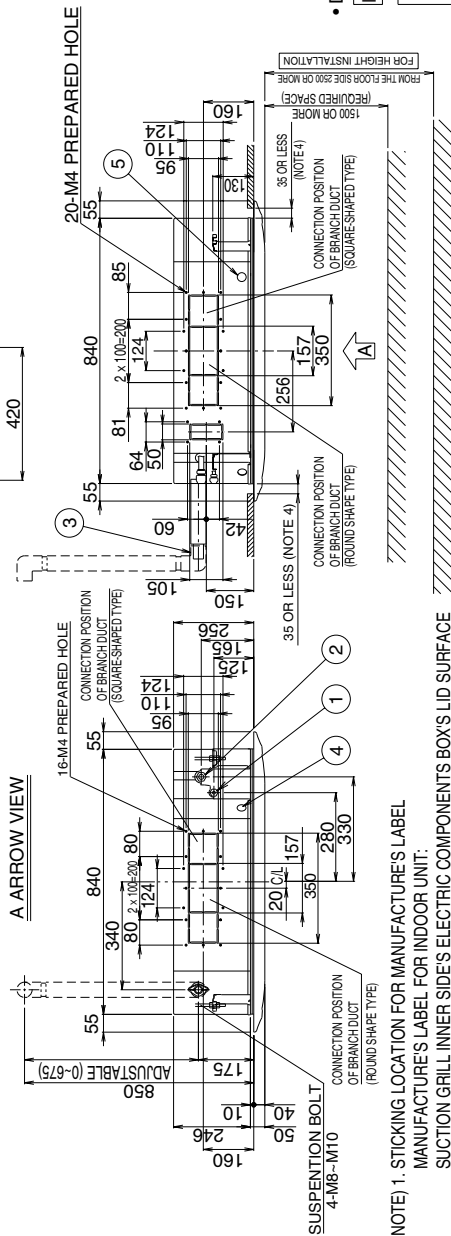
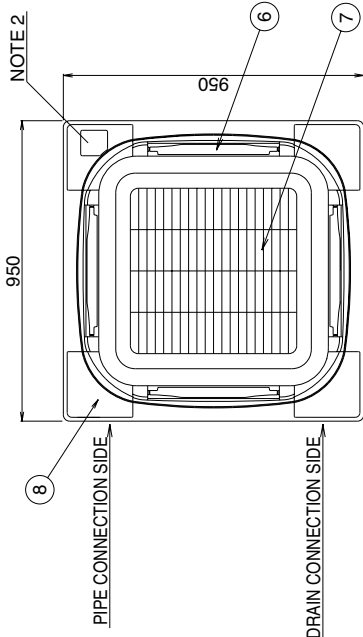
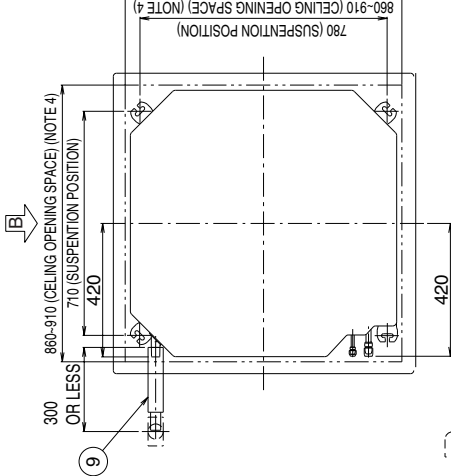
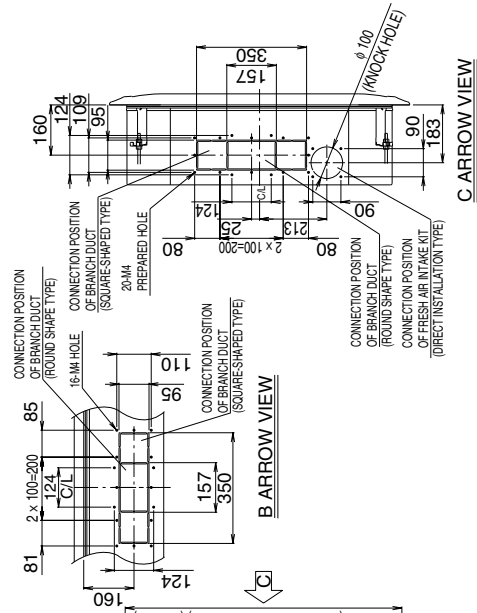
- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- *4 Anechoic chamber conversion value, measured at a point 1.5 m downward from the unit centre. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- 5 Refer to page 56 for Fan Motor Input.

Conversion Formulae
kcal/h=kWx860
Btu/h=kWx3412
cfm=m ³ /minx35.3

3. Dimensions

FXFQ25P / 32P / 40P / 50PVE

Unit (mm)



• DECORATION PANEL
 BYCP125K-W1 | FRESH WHITE 6.5Y 9.5/0.5

9	DRAIN HOSE (ACCESSORY)	LOCAL CONNECTION OD φ 32 (OUTLET) (UNIT CONNECTION OD φ 26)
8	CORNER DECORATION COVER	
7	SUCTION GRILLE	
6	AIR-OUTLET	
5	CONNECTION WIRING/ REMOTE CONTROL WIRING CONNECTION	
4	POWER-SOURCE WIRING AND A UNIT WIRING CONNECTION	
3	DRAIN PIPE CONNECTION	VP25 (OD φ 32)
2	GAS PIPE CONNECTION	φ 12.7 (FLARE CONNECTION)
1	LIQUID PIPE CONNECTION	φ 6.4 (FLARE CONNECTION)
ITEM	PART NAME	REMARK

* REQUIRED SPACE
 1500mm OR MORE*
 200mm OR MORE*
 1500mm OR MORE*
 200mm OR MORE*
 1500mm OR MORE*
 200mm OR MORE*

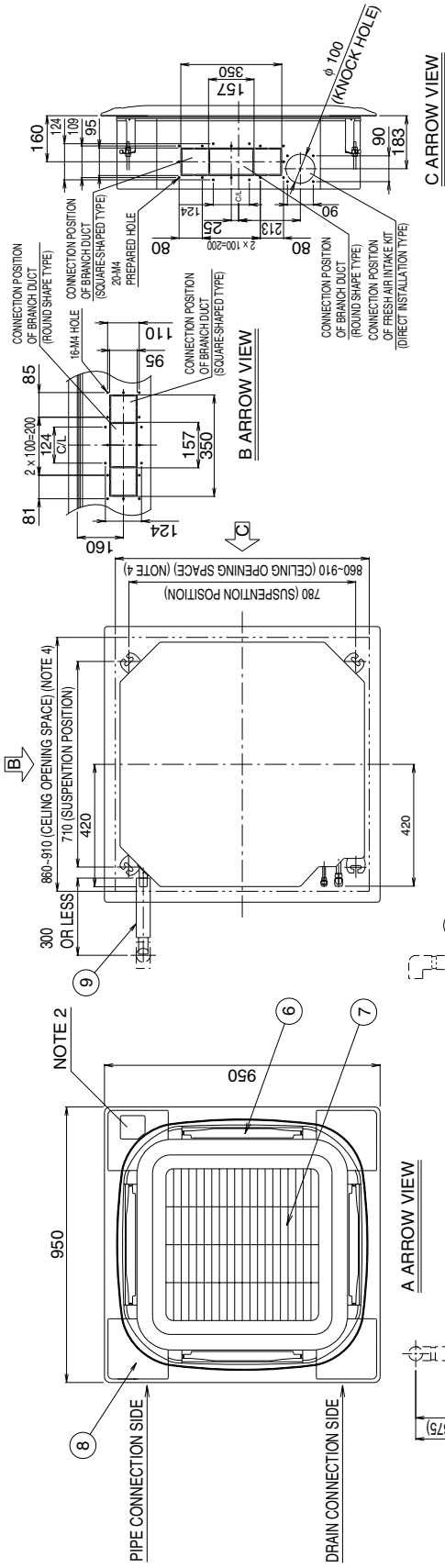
* WHEN THE BLOW-OFF GRILL IS CLOSING. THE REQUIRED SPACE IS 500mm OR MORE. WHEN UNITING AND CLOSING A CORNER PART (BOTH RIGHT AND LEFT OF THE BLOW-OFF GRILL TO CLOSE), IT IS 200mm OR MORE.

- NOTE) 1. STICKING LOCATION FOR MANUFACTURE'S LABEL
 MANUFACTURE'S LABEL FOR INDOOR UNIT:
 SUCTION GRILL INNER SIDE'S ELECTRIC COMPONENTS BOX'S LID SURFACE
 MANUFACTURE'S LABEL FOR DECORATION PANEL:
 DECORATION PANEL'S CORNER DECORATION COVER INNER SURFACE
2. IN CASE OF USING WIRELESS REMOTE CONTROLLER, THIS POSITION WILL BE A SIGNAL RECEIVER. REFER TO THE DRAWING OF WIRELESS REMOTE CONTROLLER IN DETAIL.
3. WHEN THE TEMPERATURE AND HUMIDITY IN THE CEILING EXCEED 30°C AND RH 80% OR THE FRESH AIR IS INDUCED INTO THE CEILING OR THE UNIT CONTINUES 24 HOUR OPERATION, AN ADDITIONAL INSULATION (THICKNESS 10mm OR MORE OF GLASSWOOL OR POLYETHYLENE FORM) IS REQUIRED.
4. THOUGH THE INSTALLATION IS ACCEPTABLE UP TO MAXIMUM OF 910mm SQUARE CEILING OPENING, KEEP THE CLEARANCE OF 35mm OR LESS BETWEEN THE INDOOR UNIT AND THE CEILING OPENING SO THAT THE PANEL OVERLAP ALLOWANCE CAN BE ENSURED.
5. PLEASE DO NOT PLACE THE THING BEEN DAMP AND TROUBLED UNDER AN INDOOR UNIT.
 WHEN THE CASE WHERE HUMIDITY IS 80% OR MORE, AND THE DRAIN OUTLET ARE CHOKED UP AND THE AIR FILTER ARE DIRTY, DEW MAY FALL.

3D060187

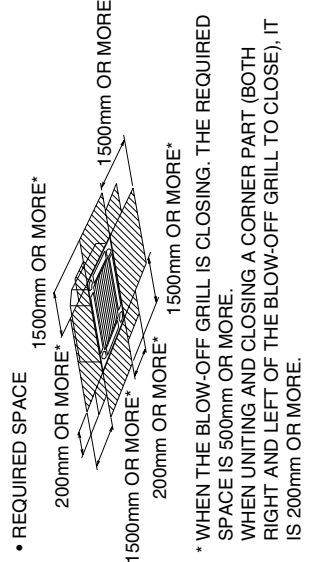
FXFQ63P / 80PVE

Unit (mm)



• DECORATION PANEL
 BYCP125K-W1 | FRESH WHITE 6.5Y 9.5/0.5

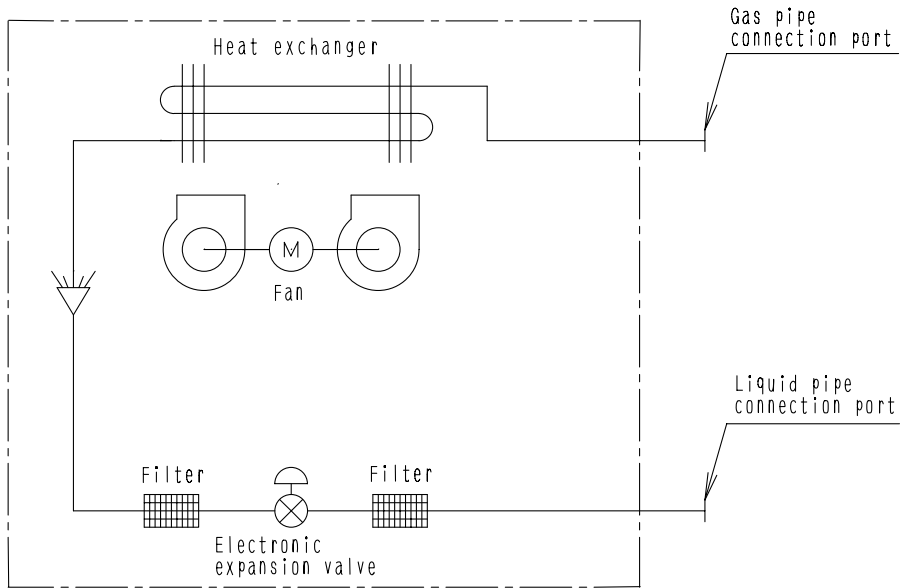
ITEM	PART NAME	REMARK
9	DRAIN HOSE (ACCESSORY)	LOCAL CONNECTION OD φ32 (OUTLET) (UNIT CONNECTION OD φ26)
8	CORNER DECORATION COVER	
7	SUCTION GRILLE	
6	AIR-OUTLET	
5	REMOTE CONTROL WIRING CONNECTION	
4	POWER-SOURCE WIRING AND A UNIT WIRING CONNECTION	
3	DRAIN PIPE CONNECTION	VP25 (OD φ 32)
2	GAS PIPE CONNECTION	φ 15.9 (FLARE CONNECTION)
1	LIQUID PIPE CONNECTION	φ 9.5 (FLARE CONNECTION)



- NOTE 1. STICKING LOCATION FOR MANUFACTURE'S LABEL
 MANUFACTURE'S LABEL FOR INDOOR UNIT:
 SUCTION GRILL INNER SIDE'S ELECTRIC COMPONENTS BOX'S LID SURFACE
 MANUFACTURE'S LABEL FOR DECORATION PANEL:
 DECORATION PANEL'S CORNER DECORATION COVER INNER SURFACE
- IN CASE OF USING WIRELESS REMOTE CONTROLLER, THIS POSITION WILL BE A SIGNAL RECEIVER. REFER TO THE DRAWING OF WIRELESS REMOTE CONTROLLER IN DETAIL.
 - WHEN THE TEMPERATURE AND HUMIDITY IN THE CEILING EXCEED 30°C AND RH 80% OR THE FRESH AIR IS INDUCTED INTO THE CEILING OR THE UNIT CONTINUES 24 HOUR OPERATION, AN ADDITIONAL INSULATION (THICKNESS 10mm OR MORE OF GLASSWOL OR POLYETHYLENE FORM) IS REQUIRED.
 - ALTHOUGH THE INSTALLATION IS ACCEPTABLE UP TO MAXIMUM OF 910mm SQUARE CEILING OPENING, KEEP THE CLEARANCE OF 35mm OR LESS BETWEEN THE INDOOR UNIT AND THE CEILING OPENING SO THAT THE PANEL OVERLAP ALLOWANCE CAN BE ENSURED.
 - PLEASE DO NOT PLACE THE THING BEEN DAMP AND TROUBLED UNDER AN INDOOR UNIT.
 WHEN THE CASE WHERE HUMIDITY IS 80% OR MORE AND THE DRAIN OUTLET ARE CHOKED UP AND THE AIR FILTER ARE DIRTY, DEW MAY FALL.

3D058460A

4. Piping Diagrams



4D024460B

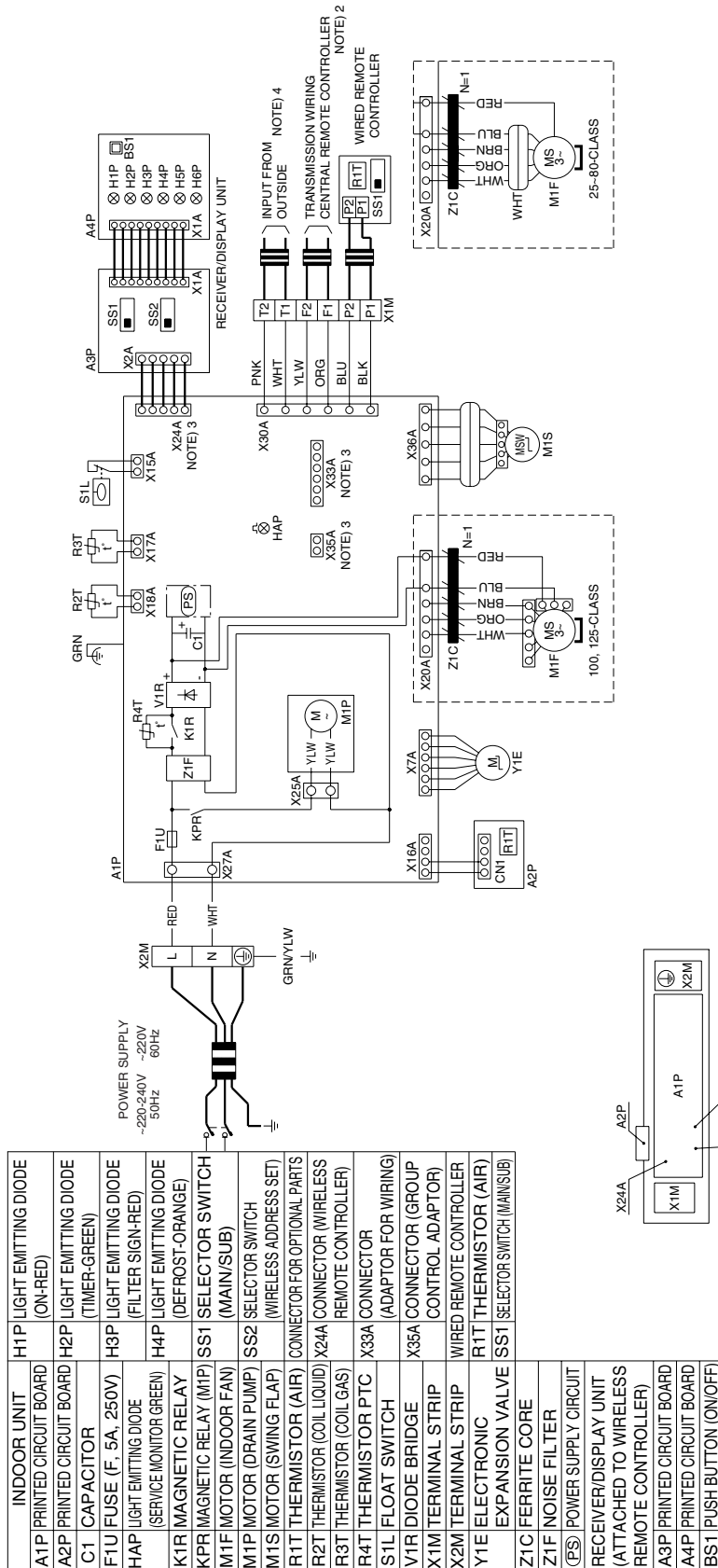
■ Refrigerant pipe connection port diameters

(mm)

Model	Gas	Liquid
FXFQ25P / 32P / 40P / 50PVE	φ12.7	φ6.4
FXFQ63P / 80P / 100P / 125PVE	φ15.9	φ9.5

5. Wiring Diagrams

FXFQ25P / 32P / 40P / 50P / 63P / 80P / 100P / 125PVE



- NOTES)
1. □ : TERMINAL, ○ : CONNECTOR
 2. III : FIELD WIRING
 3. X24A, X33A AND X35A ARE CONNECTED WHEN THE OPTIONAL ACCESSORIES ARE BEING USED.
 4. WHEN CONNECTING THE INPUT WIRES FROM OUTSIDE, FORCED OFF OR ON/OFF CONTROL OPERATION CAN BE SELECTED BY THE REMOTE CONTROLLER. SEE INSTALLATION MANUAL FOR MORE DETAILS.
 5. CONFIRM THE METHOD OF SETTING THE SELECTOR SWITCH (SS1, SS2) BY INSTALLATION MANUAL AND ENGINEERING DATA, ETC.
 6. SYMBOLS SHOWS AS FOLLOWS:
 RED : RED
 BLK : BLACK
 WHT : WHITE
 YLW : YELLOW
 GRN : GREEN
 ORG : ORANGE
 BRN : BROWN
 PNK : PINK
 GRAY : GRAY
 BLU : BLUE

3D059890

6. Electric Characteristics

Model	Units			Power supply		IFM		Input(W)	
	Hz	Volts	Voltage range	MCA	MFA	kW	FLA	Cooling	Heating
FXFQ25PVE	50	220-240	MAX. 264 Min. 198	0.3	15	0.056	0.2	33	27
FXFQ32PVE				0.3	15	0.056	0.2	33	27
FXFQ40PVE				0.3	15	0.056	0.2	47	34
FXFQ50PVE				0.3	15	0.056	0.2	52	38
FXFQ63PVE				0.4	15	0.056	0.3	66	53
FXFQ80PVE				0.5	15	0.056	0.4	93	75
FXFQ100PVE				1.3	15	0.120	1.0	187	174
FXFQ125PVE				1.5	15	0.120	1.2	209	200

Symbols :

MCA : Min. Circuit Amps (A)
 MFA : Max. Fuse Amps (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/MFA

$$MCA = 1.25 \times FLA$$

$$MFA \leq 4 \times FLA$$

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

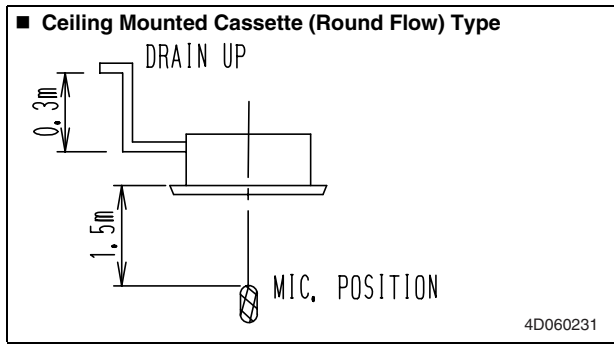
4. Select wire size based on the MCA.

5. Instead of fuse, use Circuit Breaker.

C : 4D060238A

8. Sound Levels

Overall



Note:

1. The operating conditions are assumed to be standard (JIS conditions).
2. These operating values were obtained in a dead room (conversion values). Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

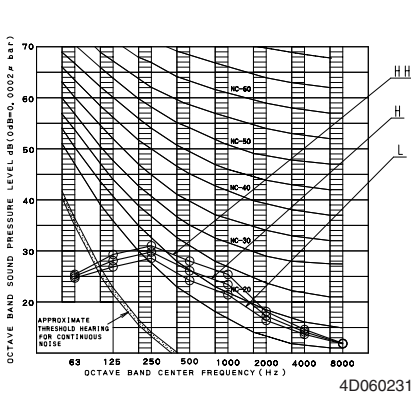
dBA

Model	220~240V 50Hz		
	HH	H	L
FXFQ25P / 32P	30	28.5	27
FXFQ40P	31	29	27
FXFQ50P	32	29.5	27
FXFQ63P	34	31	28
FXFQ80P	36	33.5	31
FXFQ100P	43	37.5	32
FXFQ125P	44	39	34

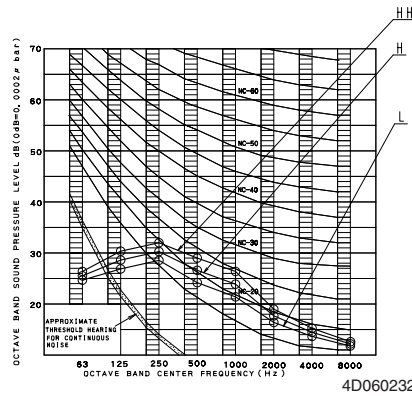
Octave Band Level

○ — ○ 220V~240V 50Hz

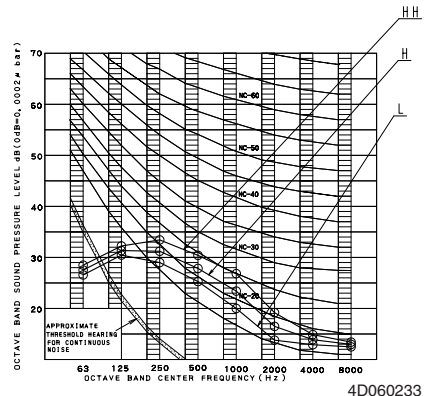
FXFQ25/32PVE



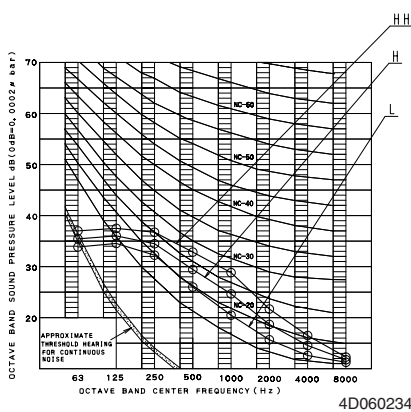
FXFQ40PVE



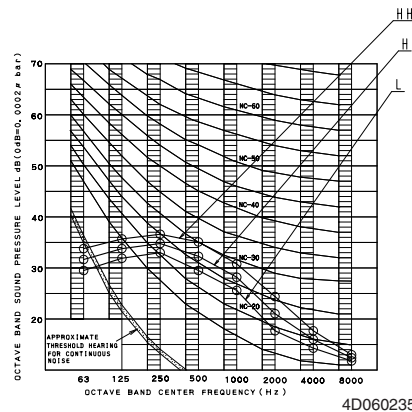
FXFQ50PVE



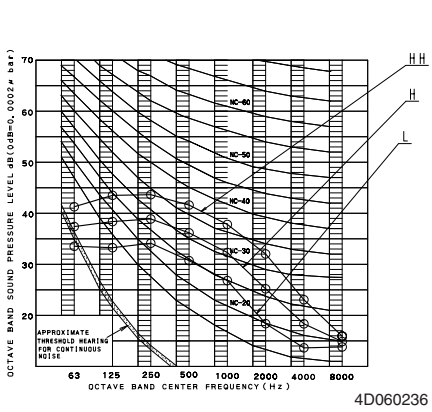
FXFQ63PVE



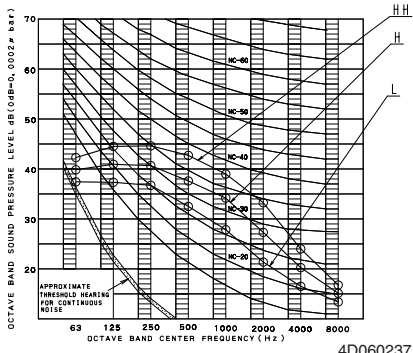
FXFQ80PVE



FXFQ100PVE



FXFQ125PVE

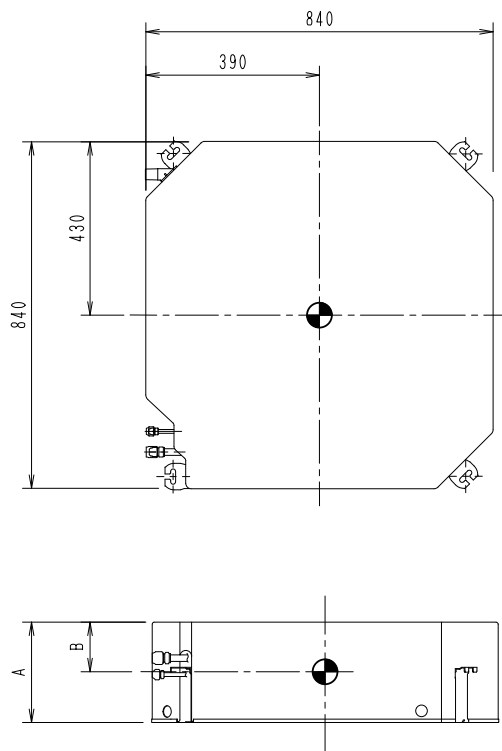


2

9. Center of Gravity

FXFQ25P / 32P / 40P / 50P / 63P / 80P / 100P / 125PVE

Unit (mm)



MODEL NAME	A	B
FXFQ25P~80PVE	246	90
FXFQ100・125PVE	288	120

4D052237B

10. Installation Manual



FXFQ25PVE
FXFQ32PVE
FXFQ40PVE
FXFQ50PVE

FXFQ63PVE
FXFQ80PVE
FXFQ100PVE
FXFQ125PVE

VRV SYSTEM Inverter
Air Conditioners

Installation manual

2

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2. BEFORE INSTALLATION	3
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5. INDOOR UNIT INSTALLATION	8
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1. SAFETY PRECAUTIONS

Please read these "SAFETY PRECAUTIONS" carefully before installing air conditioning unit and be sure to install it correctly. After completing installation, conduct a trial operation to check for faults and explain to the customer how to operate the air conditioner and take care of it with the aid of the operation manual. Ask the customer to store the installation manual along with the operation manual for future reference.

This air conditioner comes under the term "appliances not accessible to the general public".

This unit is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Meaning of WARNING and CAUTION notices.



WARNING Failure to follow these instructions properly may result in personal injury or loss of life.



CAUTION Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.



WARNING

- Ask your dealer or qualified personnel to carry out installation work.
Do not attempt to install the air conditioner yourself. Improper installation may result in water leakage, electric shocks or fire.
- Install the air conditioner in accordance with the instructions in this installation manual.
Improper installation may result in water leakage, electric shocks or fire.
- Consult your local dealer regarding what to do in case of refrigerant leakage.
When the air conditioner is to be installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.

- Be sure to use only the specified accessories and parts for installation work.
Failure to use the specified parts may result in the unit falling, water leakage, electric shocks or fire.
- Install the air conditioner on a foundation strong enough to withstand the weight of the unit.
A foundation of insufficient strength may result in the equipment falling and causing injury.
- Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.
Failure to do so during installation work may result in the unit falling and causing accidents.
- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.
An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- Make sure that all wiring is secured, the specified wires are used, and that there is no strain on the terminal connections or wires.
Improper connections or securing of wires may result in abnormal heat build-up or fire.
- When wiring the power supply and connecting the remote controller wiring and transmission wiring, position the wires so that the terminal box lid can be securely fastened.
Improper positioning of the terminal box lid may result in electric shocks, fire or the terminals overheating.
- If refrigerant gas leaks during installation, ventilate the area immediately.
Toxic gas may be produced if the refrigerant comes into contact with fire.
- After completing installation, check for refrigerant gas leakage.
Toxic gas may be produced if the refrigerant gas leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.
- Be sure to switch off the unit before touching any electrical parts.
- Do not directly touch refrigerant that has leaked from refrigerant pipes or other areas, as there is a danger of frostbite.
- Be sure to earth the air conditioner.
Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead.
Imperfect earthing may result in electric shocks or fire.
A high surge current from lightning or other sources may cause damage to the air conditioner.
- Be sure to install an earth leakage breaker.
Failure to install an earth leakage breaker may result in electric shocks or fire.

CAUTION

- While following the instructions in this installation manual, install drain piping to ensure proper drainage and insulate piping to prevent condensation.
Improper drain piping may result in indoor water leakage and property damage.
- Install the indoor and outdoor units, power cord and connecting wires at least 1 meter away from televisions or radios to prevent picture interference and noise.
(Depending on the incoming signal strength, a distance of 1 meter may not be sufficient to eliminate noise.)
- Remote controller (wireless kit) transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types).
Install the indoor unit as far away from fluorescent lamps as possible.
- Do not install the air conditioner in the following locations:
 1. Where there is a high concentration of mineral oil spray or vapour (e.g. a kitchen).
Plastic parts will deteriorate, parts may fall off and water leakage could result.
 2. Where corrosive gas, such as sulphurous acid gas, is produced.
Corroding of copper pipes or soldered parts may result in refrigerant leakage.
 3. Near machinery emitting electromagnetic radiation.
Electromagnetic radiation may disturb the operation of the control system and result in a malfunction of the unit.
 4. Where flammable gas may leak, where there is carbon fibre or ignitable dust suspensions in the air, or where volatile flammables such as paint thinner or gasoline are handled.
Operating the unit in such conditions may result in fire.

2. BEFORE INSTALLATION

Do not exert pressure on the resin parts when opening the unit or when moving it after opening. Be sure to check the type of R410A refrigerant to be used before doing any work. (Using an incorrect refrigerant will prevent normal operation of the unit.)







- When opening the unit or moving it after opening, be sure to lift it by holding on to the lifting lugs without exerting any pressure on other parts, especially, drain piping, and other resin parts.
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Use a sling of soft material, where unpacking is unavoidable or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- Refer to the installation manual of the outdoor unit for items not described in this manual.
- Do not dispose of any parts necessary for installation until the installation is complete.




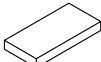





1. PRECAUTIONS

- Be sure to read this manual before installing the indoor unit.
- When selecting installation site, refer to the paper pattern.
- This unit is suitable for installation in a household, commercial and light industrial environment.
- Do not install or operate the unit in rooms mentioned below.
 - Laden with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate.)
 - Where corrosive gas like sulfurous gas exists. (Copper tubing and brazed spots may corrode.)
 - Where volatile flammable gas like thinner or gasoline is used.
 - Where machines can generate electromagnetic waves. (Control system may malfunction.)
 - Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories. Also in vehicles or vessels.

2. ACCESSORIES

Check the following accessories are included with your unit.

Name	(1) Drain hose	(2) Metal clamp	(3) Washer for hanger bracket	(4) Clamp	(5) Paper pattern for installation	(6) Screw (M4)
Quantity	1 pc.	1 pc.	8 pcs.	6 pcs.	1 pc.	4 pcs.
Shape					Also used as packing material 	For paper pattern for installation 

Name	(7) Washer fixing plate	Insulation for fitting	Sealing pad			Installation guide	(Other) • Installation manual • Operation manual
Quantity	4 pcs.	1 each	1 each	1 pc.	1 pc.	1 pc.	
Shape		(8) for gas pipe  (9) for liquid pipe 	(10) Large  (11) Medium-1  (12) Medium-2 	(13) Small 	(14) 	(15) 	

3. OPTIONAL ACCESSORIES

- The optional decoration panel and remote controller are required for this indoor unit. (Refer to Table 1, 2) (However, the remote controller is not required for the slave unit of a simultaneous operation system.)

Table 1

Unit model	Optional decoration panel
FXFQ25 · 32 · 40 · 50 · 63 · 80 · 100 · 125PVE	BYCP125K-W1
	Color : Fresh white

- These are two types of remote controllers: wired and wireless. Select a remote controller from Table 2 according to customer request and install in an appropriate place.

Table 2

Remote controller	
Wired type	BRC1C62
Wireless type (Heat pump type/Cooling only type)	BRC7F634F/BRC7F635F

NOTE 

- If you wish to use a remote controller that is not listed in “Table 2” on page 4, select a suitable remote controller after consulting catalogs and technical materials.

FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED.

1. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur	Check
Are the indoor unit and outdoor unit fixed firmly?	The unit may drop, vibrate or make noise.	
Is the outdoor unit fully installed?	The unit may malfunction or the components burn out.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	It may result in electric shock.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	

2. Items to be checked at time of delivery

* Also review the “1. SAFETY PRECAUTIONS”

Items to be checked	Check
Are the terminal box lid, air filter, suction grille attached?	
Did you explain about operations while showing the instruction manual to your customer?	
Did you hand the instruction manual over to your customer?	

Points for explanation about operations

The items with **⚠ WARNING** and **⚠ CAUTION** marks in the instruction manual are the items pertaining to possibilities for bodily injury and material damage in addition to the general usage of the product. Accordingly, it is necessary that you make a full explanation about the described contents and also ask your customers to read the instruction manual.

4. NOTE TO THE INSTALLER

Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

3. SELECTING INSTALLATION SITE

⟨Hold the unit by the 4 lifting lugs when opening the box and moving it, and do not exert pressure on to any other part piping (refrigerant, drain, etc.) or plastic parts.
If the temperature or humidity inside the ceiling might rise above 30°C or RH 80%, respectively, use the high-humidity kit (sold separately) or add extra insulation to the main unit body.
Use glass wool or polyethylene foam as insulation and make sure it is at least 10mm thick and fits inside the ceiling opening.⟩

The direction this product blows can be selected. However, a separately sold shut-off material kit is needed in order to make the unit blow in two, three, or four (corner shut-off) directions.

- (1) Select an installation location with the customer's approval which matches the following conditions.
- A location from which cool (warm) air will reach the whole room.
 - A location with no objects blocking the air passage.
 - A location where drainage can be done with no problem.
 - A location strong enough to support the weight of the indoor unit.
 - Locations where the wall is not significantly tilted.
 - A location which leaves enough room for installation and service work.
 - A location where there is no risk of flammable gas leaking.
 - A location where the length of the indoor-outdoor piping is no longer than the tolerated length (see the installation manual that came with the outdoor unit for details).

[Space required for installation]

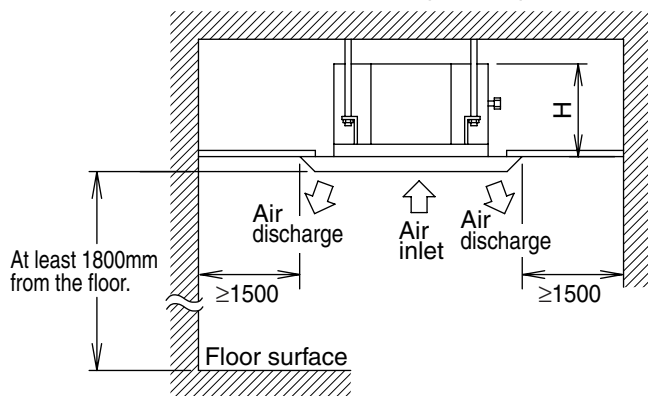


Fig. 1

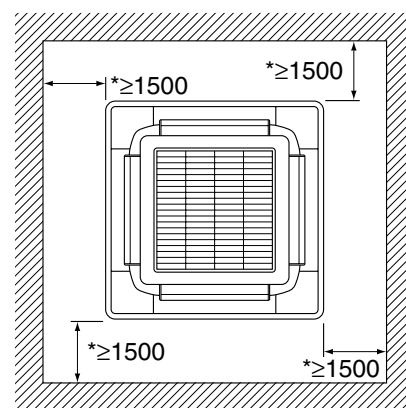


Fig. 2

Model	H (mm)
FXFQ25 · 32 · 40 · 50 · 63 · 80PVE	256
FXFQ100 · 125PVE	298

⚠ CAUTION

- The indoor and outdoor units and the power supply wiring and remote controller cord must be installed at least 1m away from any televisions or radios. This is to prevent interference with picture and sound reception. (Interference may occur even at 1m away depending on the reception quality.)
- If installing the wireless kit, the distance of the signal sent from the remote controller might be shorter if there are fluorescent lights which are electrically started (such as with inverters, rapid starters, etc.) in the room. The indoor unit should be installed as far away from fluorescent lights as possible.

(2) Ceiling height

This product can be installed in ceilings up to 3.5m high (4.2m high for the 100 and 125).

If the ceiling height is 2.7m (3.2m for the 100 and 125) or more, field settings will have to be made with the remote controller. See “11. FIELD SETTING” for details.

(3) Air direction

The air direction shown in Fig. 3 is an example.

Select the appropriate number of directions according to the shape of the room and the location of the unit. (Field settings have to be made using the remote controller and the outlet vents have to be shut off if two, three, or four (corner shut-off) directions are selected. See the shut-off materials (sold separately) installation manual for details.)

- (4) Use eyebolts for installation. Check if the location for the installation is strong enough to support the weight of the unit, reinforce it if necessary, and install using eyebolts. (The spacing of the installation is shown on the “paper pattern for installation (5)”.)

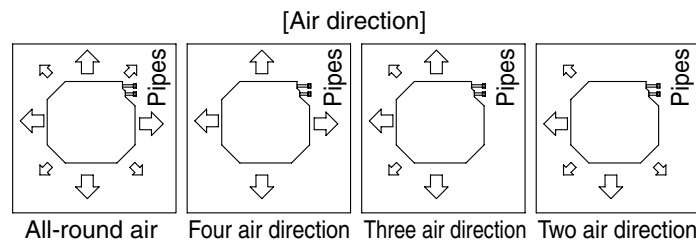


Fig. 3

4. PREPARATIONS BEFORE INSTALLATION

(1) Relation of ceiling opening to unit and suspension bolt position.

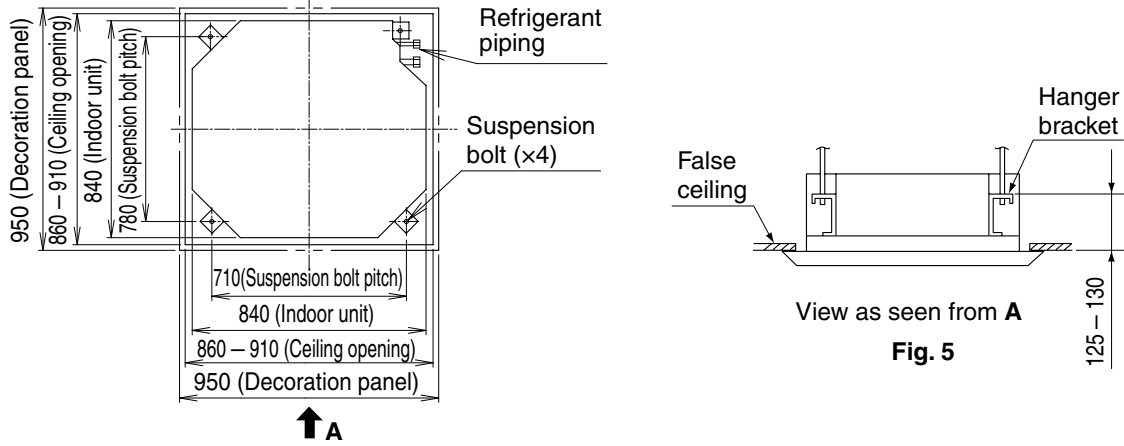


Fig. 4

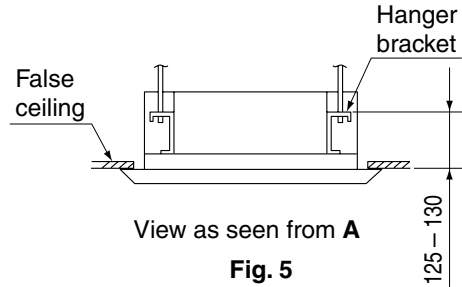


Fig. 5

■ Installation is possible when ceiling opening dimensions is as follows

- When installing the unit within the frame for fixing false ceiling.

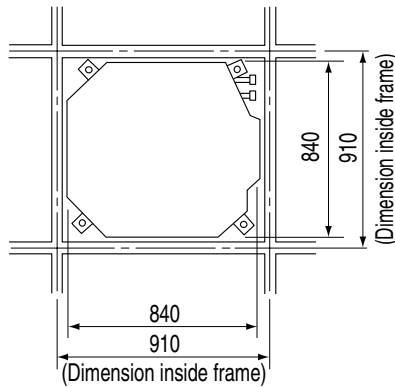


Fig. 6

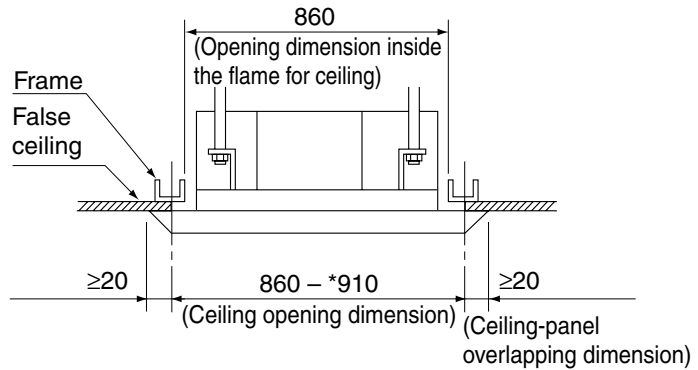


Fig. 7

NOTE

- Installation is possible with a ceiling dimension of 910mm (marked with *). However, to achieve a ceiling-panel overlapping dimension of 20mm, the spacing between the ceiling and the unit should be 35mm or less. If the spacing between ceiling and the unit is over 35mm, attach ceiling material to ■ part or recover the ceiling.

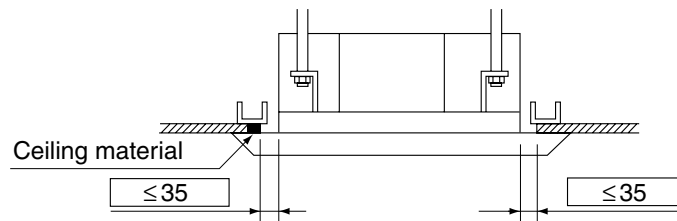


Fig. 8

(2) Make the ceiling opening needed for installation where applicable. (For existing ceilings)

- Refer to the paper pattern for installation (5) for ceiling opening dimensions.
- Create the ceiling opening required for installation. From the side of the opening to the casing outlet, implement the refrigerant and drain piping and wiring for remote controller (unnecessary for wireless type) and indoor-outdoor unit casing outlet. Refer to “6. REFRIGERANT PIPING WORK”, “7. DRAIN PIPING WORK” and “8. ELECTRIC WIRING WORK”.
- After making an opening in the ceiling, it may be necessary to reinforce ceiling beams to keep the ceiling level and to prevent it from vibrating. Consult the builder for details.

(3) Install the suspension bolts.

(Use either a M8~M10 size bolt)
 Use a hole-in anchor for existing ceilings, and a sunken insert, sunken anchor or other field supplied parts for new ceilings to reinforce the ceiling to bear the weight of the unit.
 Adjust clearance (50 – 100mm) from the ceiling before proceeding further.

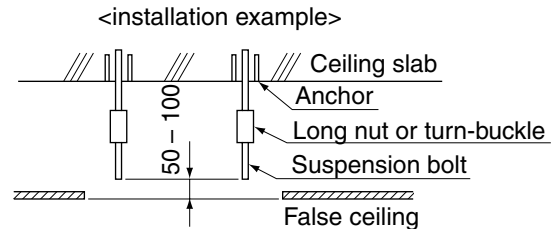


Fig. 9

NOTE

- All the above parts are field supplied.

5. INDOOR UNIT INSTALLATION

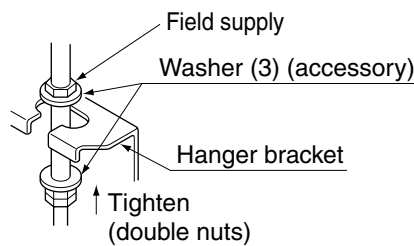
Installing optional accessories (except for the decoration panel) before installing the indoor unit is easier. However, for existing ceilings, install fresh air inlet component kit and branch duct before installing the unit.

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) For new ceilings

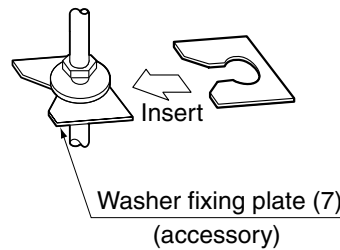
(1-1) Install the indoor unit temporarily.

- Attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and washer (3) from the upper and lower sides of the hanger bracket. The washer fixing plate (7) will prevent the washer from falling.



[Securing the hanger bracket]

Fig. 10



[Securing the washer]

Fig. 11

(1-2) Refer to the paper pattern for installation (5) for ceiling opening dimension.

Consult the builder or carpenter for details.

- The center of the ceiling opening is indicated on the paper pattern for installation. The center of the unit is indicated on the triangular mark to the unit bottom and on the paper pattern for installation.
- Fix the paper pattern to the unit with screws (6) (×4).
- Ceiling height is shown on the side of the paper pattern for installation (5). Adjust the height of the unit according to this indication.

Please perform one of the following, as the shape of the paper pattern for installation differs according to the model.

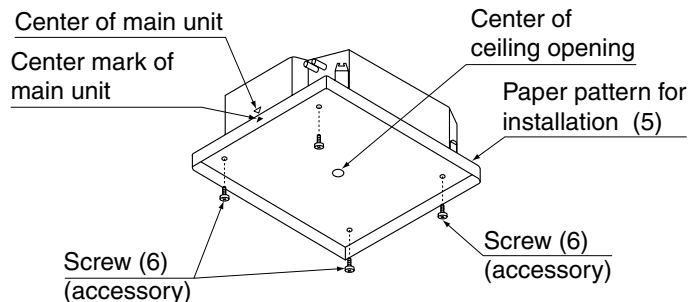


Fig. 12

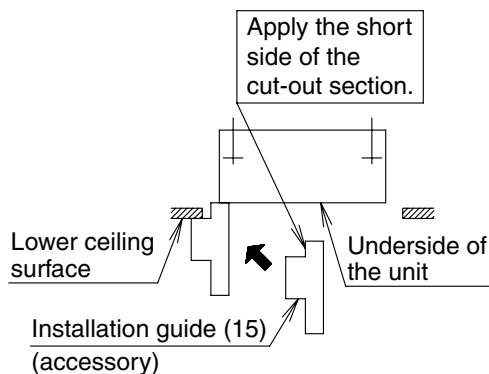
[Installation of paper pattern for installation]

<Ceiling work>

(1-3) Adjust the unit to the right position for installation.

(Refer to “4. PREPARATIONS BEFORE INSTALLATION-(1)”.)

- Using the Installation guide (15) allows you to check the positions from the underside of the unit to the lower ceiling surface.



(1-4) Check the unit is horizontally level.

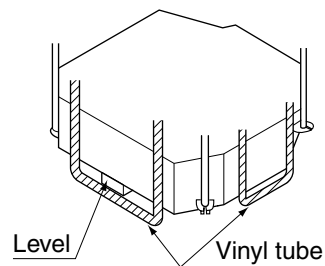
- The indoor unit is equipped with a built-in drain pump and float switch. Verify that it is level by using a level or a water-filled vinyl tube.

— CAUTION

If the unit is tilted against condensate flow, the float switch may malfunction and cause water to drip.

(1-5) Remove the washer fixing plate (7) used for preventing the washer from falling and tighten the upper nut.

(1-6) Remove the paper pattern for installation (5).



[Maintaining horizontality]

Fig. 13

(2) For existing ceilings

(2-1) Install the indoor unit temporarily.

Perform step (1-1) in (1) For new ceilings.

(2-2) Adjust the height and position of the unit.

(Refer to “4. PREPARATIONS BEFORE INSTALLATION-(1)” and (1-3) in (1) For new ceilings.)

(2-3) Perform steps (1-4), (1-5) in (1) For new ceilings.

6. REFRIGERANT PIPING WORK

⟨For refrigerant piping of outdoor units, see the installation manual attached to the outdoor unit.⟩

⟨Execute heat insulation work completely on both sides of the gas piping and the liquid piping. Otherwise, a water leakage can result sometimes.⟩

⟨When using a heat pump, the temperature of the gas piping can reach up to approximately 120°C, so use insulation which is sufficiently resistant.⟩

⟨Also, in cases where the temperature and humidity of the refrigerant piping sections might exceed 30°C or RH80%, reinforce the refrigerant insulation. (20mm or thicker) Condensate may form on the surface of the insulating material.⟩

⟨Be sure to check the type of R410A refrigerant to be used before doing any work. (Using an incorrect refrigerant will prevent normal operation of the unit.⟩

⚠ CAUTION

- Use a pipe cutter and flare suitable for the type of refrigerant.
- Apply ester oil or ether oil around the flare section before connecting.
- 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 air, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.

- **Do not mix air or other gas with the specified refrigerant in the refrigeration cycle.**
- **Ventilate the room if refrigerant gas leaks during the work.**
- The 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. 14)
- Refer to "Table 3" for the dimensions of flare nut spaces.

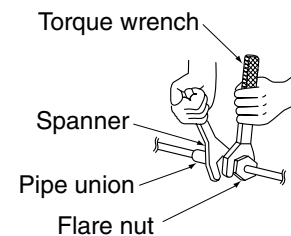


Fig. 14

- When connecting the flare nut, apply ether oil or ester oil only to inner side of the flare, and spin 3-4 times before screwing in. (Refer to Fig. 15)
- **Keep all the screw mounting resin parts (e.g., piping presser plates) away from oil.** If oil adheres, the strength of the screw mounting resin parts may drop.

Apply ester oil or ether oil only to inner side of the flare.

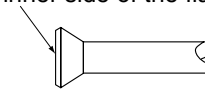


Fig. 15

⚠ CAUTION

Over-tightening the flare nut may break it and/or cause the refrigerant to leak.

NOTE

- Use the flare nut included with the unit main body.

Table 3

Pipe size	Tightening torque	Flare dimensions A (mm)	Flare
φ 6.4 (1/4")	14.2 – 17.2N·m (144 – 176 kgf·cm)	8.7 – 9.1	
φ 9.5 (3/8")	32.7 – 39.9N·m (333 – 407 kgf·cm)	12.8 – 13.2	
φ 12.7 (1/2")	49.5 – 60.3N·m (504 – 616 kgf·cm)	16.2 – 16.6	
φ 15.9 (5/8")	61.8 – 75.4N·m (630 – 770 kgf·cm)	19.3 – 19.7	

- Refer to "Table 3" to determine the proper tightening torque.

Not recommendable but in case of emergency

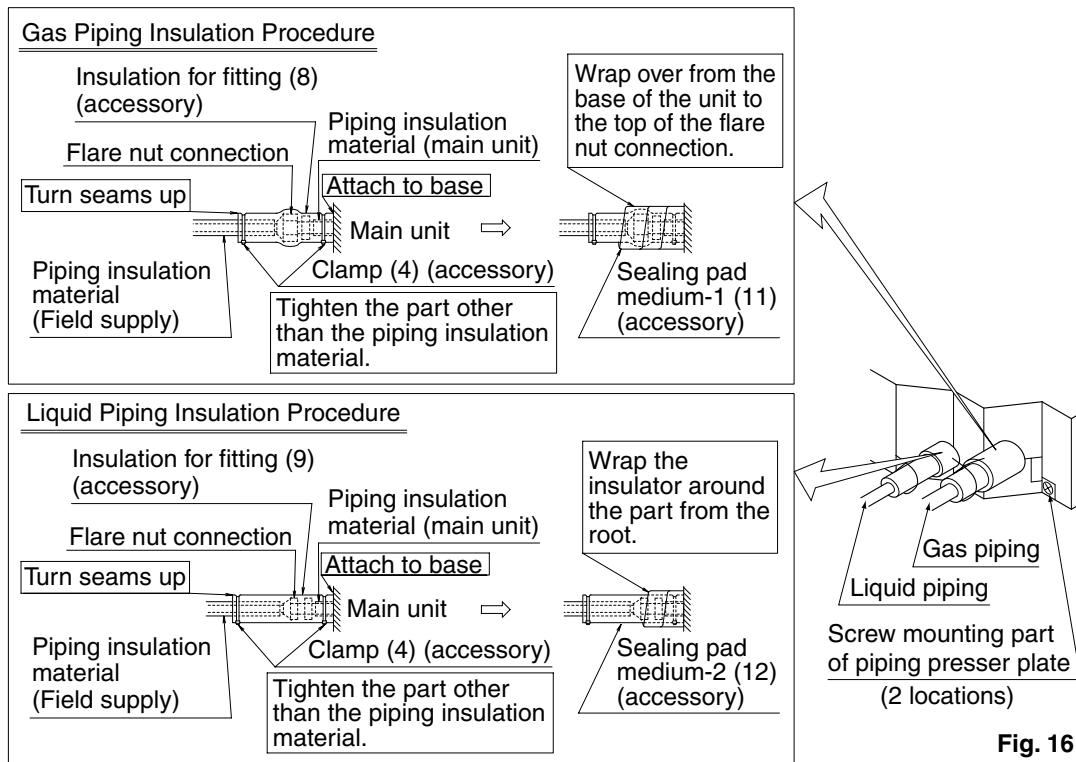
You must use a torque wrench but if you are obliged to install the unit without a torque wrench, you may follow the installation method mentioned below.

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:

Pipe size	Further tightening angle	Recommended arm length of tool
φ 6.4 (1/4")	60 to 90 degrees	Approx. 150mm
φ 9.5 (3/8")	60 to 90 degrees	Approx. 200mm
φ 12.7 (1/2")	30 to 60 degrees	Approx. 250mm
φ 15.9 (5/8")	30 to 60 degrees	Approx. 300mm

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

- Make absolutely sure to execute heat insulation works on the pipe-connecting section after checking gas leakage by thoroughly studying the following figure and using the attached heat insulating materials for fitting (8) and (9). (Fasten both ends with the clamps (4).) (Refer to Fig. 16)
- Wrap the sealing pad (11) only around the insulation for the joints on the gas piping side. (Refer to Fig. 16)



CAUTION
For local insulation, be sure to insulate local piping all the way into the pipe connections inside the machine. Exposed piping may cause condensation or burns on contact.

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: JIS Z 3264/B-Cu93P-710/795: ISO 3677) which does not require flux.”
(Flux has extremely harmful influence 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 you 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 indoor unit with a flared or a flanged connection.
- Nitrogen should be set to 0.02MPa with a pressure-reducing valve if brazing while inserting nitrogen into the piping. (Refer to Fig. 17)

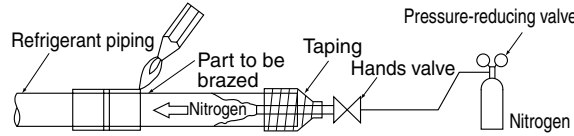
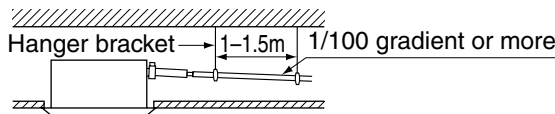


Fig. 17

7. DRAIN PIPING WORK

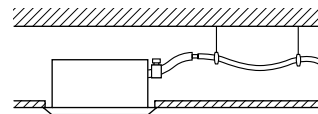
(1) Rig drain piping

- As for drain work, perform piping in such a manner that water can be drained properly.
- Employ a pipe with either the same diameter or with the diameter larger (excluding the raising section) than that of the connecting pipe (PVC pipe, nominal diameter 25mm, outside diameter 32mm).
- Keep the drain pipe short and sloping downwards at a gradient of at least 1/100 to prevent air pockets from forming.
- If the drain pipe cannot be sufficiently set on a slope, execute the drain raising piping.
- To keep the drain pipe from sagging, space hanging wires every 1 to 1.5m.



GOOD O

Fig. 18-1



WRONG X

Fig. 18-2



CAUTION

Water pooling in the drainage piping can cause the drain to clog.

- Use the attached drain hose (1) and Metal clamp (2).
- Insert the drain hose into the drain socket up to the base, and tighten the Metal clamp securely within the portion of a white tape of the hose-inserted tip. Tighten the Metal clamp until the screw head is less than 4mm from the hose.
- Wrap the attached sealing pad (10) over the Metal clamp and drain hose to insulate.
- Make sure that heat insulation work is executed on the following 2 spots to prevent any possible water leakage due to dew condensation.
 - Indoor drain pipe
 - Drain socket

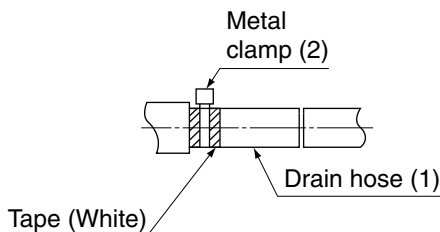


Fig. 19

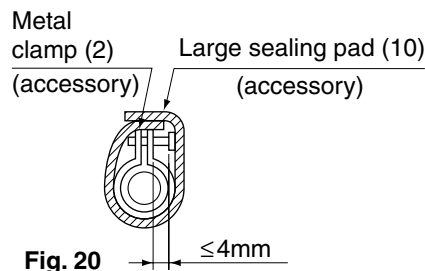


Fig. 20

<PRECAUTIONS FOR DRAIN RAISING PIPING>

- Install the drain raising pipes at a height of less than 675mm. The drain pump of this unit has a high delivery flow rate. Therefore, the higher the drain raising height is, the lower the sound of draining will be. For this reason, a minimum drain raising height of 300mm is recommended.
- Install the drain raising pipes at a right angle to the indoor unit and no more than 300mm from the unit.

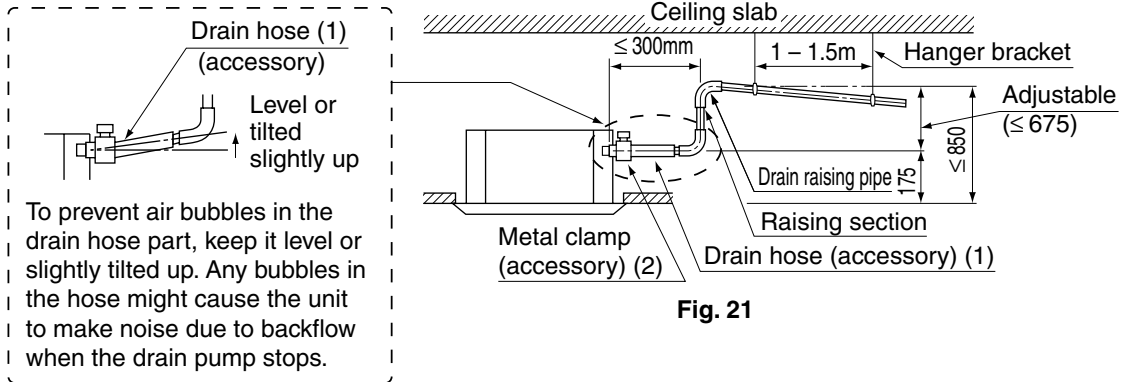


Fig. 21

NOTE

- To ensure no excessive pressure is applied to the included drain hose (1), do not bend or twist when installing. (This may cause leakage.)
- If converging multiple drain pipes, install according to the procedure shown below.

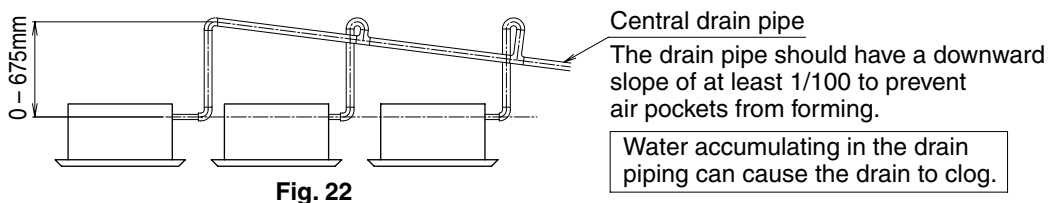


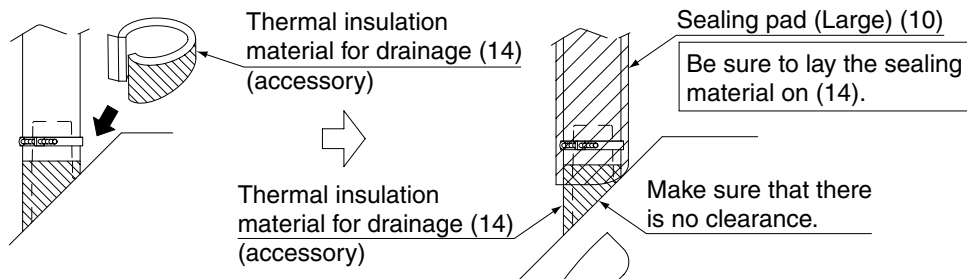
Fig. 22

Select converging drain pipes whose gauge is suitable for the operating capacity of the unit.

(2) After piping work is finished, check if drainage flows smoothly.

WHEN ELECTRIC WIRING WORK IS FINISHED

- Add approximately 1000cc of water slowly from the air outlet and check drainage flow.
- Check drainage flow during COOL running, explained under “12. TEST OPERATION”.
- Refer to the figure on the following after checking the draining of water, and mount the thermal insulation material for drainage (14) and thermal insulate the drain socket.



WHEN ELECTRIC WIRING WORK IS NOT FINISHED

CAUTION

- Electrical wiring work should be done by a certified electrician.
- If someone who does not have the proper qualifications performs the work, perform the following after the test run is complete.

- Remove the terminal box lid. Connect the single phase power supply (SINGLE PHASE 50Hz 240V) to connections No.1 and No.2 on the terminal block for wiring the units. Do not connect to No.3 of the terminal block for wiring the units. (The drain pump will not operate.) Connect the ground wire firmly. When carrying out wiring work around the terminal box, make sure none of the connectors come undone. Be sure to attach the terminal box lid before turning on the power.
- Put approximately 1000cc of water into the drain pan through the blow-off mouth on the left-hand side of the drain socket. Make sure not to pour water over the drain pump or any electric parts including those of the drain pump.
- When the power is turned on, the drain pump will operate and you can check the draining of water through the transparent part of the drain socket. (The drain pump will stop automatically in 10 minutes.) After checking the draining of water, mount the thermal insulation material for drainage (14) and thermal insulate the drain socket.
- After confirming drainage (**Fig.23, Fig.24**), turn off the power and remove the power supply.
- Attach the terminal box lid as before.

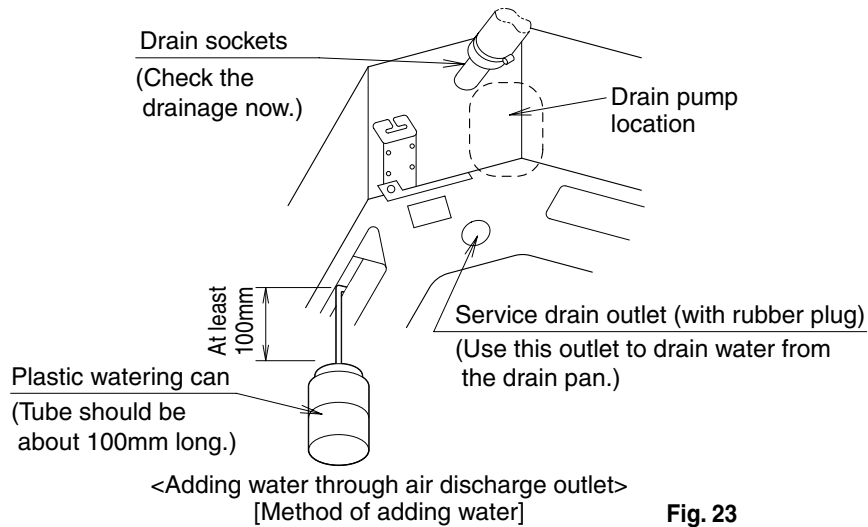


Fig. 23

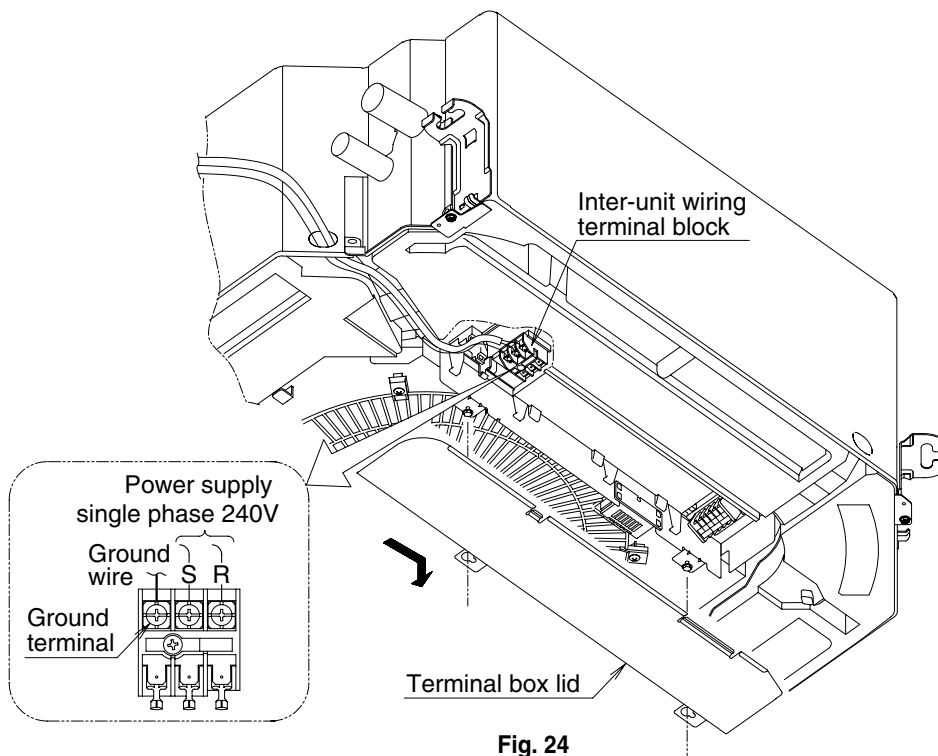


Fig. 24

⚠ CAUTION

Drain piping connections

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

8. ELECTRIC WIRING WORK**8-1 General instructions**

- All 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” attached to the unit body.
- For remote controller wiring details, refer to the installation manual attached to the remote controller.
- All wiring must be performed by an authorized electrician.
- A circuit breaker 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 electric wire connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Be sure to ground the air conditioner.
 - Do not connect the ground wire to gas pipes, plumbing pipes, lightning rods, or telephone ground wires.
 - Gas pipes: might cause explosions or fire if gas leaks.
 - Plumbing: 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 storms.

8-2 Electrical characteristics

Units		Volts	Voltage range	Power supply		Fan motor	
Model	Hz			MCA	MFA	kW	FLA
FXFQ25PVE	50	220-240	Max. 264 Min. 198	0.3	15	0.056	0.2
FXFQ32PVE				0.3	15	0.056	0.2
FXFQ40PVE				0.3	15	0.056	0.2
FXFQ50PVE				0.3	15	0.056	0.2
FXFQ63PVE				0.4	15	0.056	0.3
FXFQ80PVE				0.5	15	0.056	0.4
FXFQ100PVE				1.3	15	0.120	1.0
FXFQ125PVE				1.5	15	0.120	1.2
FXFQ25PVE	60	220	Max. 242 Min. 198	0.3	15	0.056	0.2
FXFQ32PVE				0.3	15	0.056	0.2
FXFQ40PVE				0.3	15	0.056	0.2
FXFQ50PVE				0.3	15	0.056	0.2
FXFQ63PVE				0.4	15	0.056	0.3
FXFQ80PVE				0.5	15	0.056	0.4
FXFQ100PVE				1.3	15	0.120	1.0
FXFQ125PVE				1.5	15	0.120	1.2

MCA: Min. Circuit Amps (A)

MFA: Max. Fuse Amps (A)

kW: Fan Motor Rated Output (kW)

FLA: Full Load Amps (A)

8-3 Specifications for field supplied fuses and wire

Model	Power supply wiring			Remote controller wiring Transmission wiring	
	Field fuses ☐	Wire	Size	Wire	Size
FXFQ25·32·40·50PVE	15A	H05VV-U3G	Wire size must comply with local codes.	Sheathed wire (2 wire)	0.75 - 1.25 mm ²
FXFQ63PVE					
FXFQ80·100PVE					
FXFQ125PVE					

Allowable length of transmission wirings and remote controller wiring are as follows.

- (1) Outdoor unit - Indoor unit:
Max. 1000m (Total wiring length: 2000m)
- (2) Indoor unit - Remote controller
Max. 500m

NOTE 📄

- 1. Shows only in case of protected pipes. Use H07RN-F in case of no protection.
- 2. Vinyl cord with sheath or cable (Insulated thickness : 1mm or more)

9. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER

9-1 How to connect wirings

Connection of wiring between units, ground wire and for the remote controller cord (Refer to Fig. 25)

- Wiring the units and ground wire
Remove the terminal box lid and connect wires of matching number to the terminal block for wiring the units (3 P) inside. And connect the ground wire to the ground terminal. In doing this, pull the wires inside through the hole and fix the wires securely with the included clamp (4) (2 points).
- Remote controller cords (not necessary for slave unit of simultaneous operation system)
Remove the terminal box lid and pull the wires inside through the hole and connect to the terminal block for remote controller (6 P). (no polarity) Securely fix the remote controller cord with the included clamp (4) (2 points).
- After connection, attach sealing pad (13).
- Be sure to attach it to prevent the infiltration of water from the outside.

[PRECAUTIONS]

- 1. Use round crimp-style terminals for connecting wires to the power supply terminal block.
If unavailable, observe the following points when wiring.
 - 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. (Tightening torque: 131N·cm ±10 %)

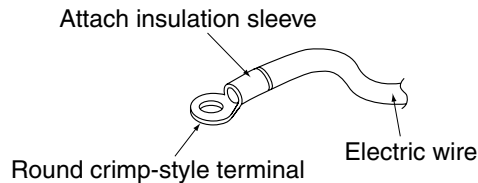


Fig. 25

2. Tightening torque for the terminal screws.

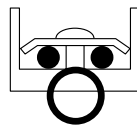
- Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
- If the terminal screws are tightened too hard, screws might be damaged.
- Refer to the table below for the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

Terminal	Size	Tightening torque
Terminal block for remote controller (6P)	M3.5	0.79 – 0.97N·m
Power supply terminal block (3P)	M4	1.18 – 1.44N·m
Ground terminal	M4	1.44 – 1.94N·m

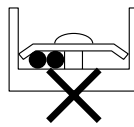
When none are available, follow the instructions below.

3. Do not connect wires of different gauge to the same grounding terminal.

Connect wires of the same gauge to both side.



Do not connect wires of the same gauge to one side.



Do not connect wires of different gauges.

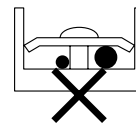


Fig. 26

Looseness in the connection may deteriorate protection.

4. Outside of the unit, keep transmission wiring at least 50mm away from power supply wiring. The equipment may malfunction if subjected to electrical (external) noise.
5. For remote controller wiring, refer to the “INSTALLATION MANUAL OF REMOTE CONTROLLER.” attached to the remote controller.
6. **Never connect power supply wiring to the terminal block for remote controller. 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 popping open the terminal box lid. Make sure the lid closes tight. Incomplete connections could result in overheating, and in worse case, electric shock or fire.

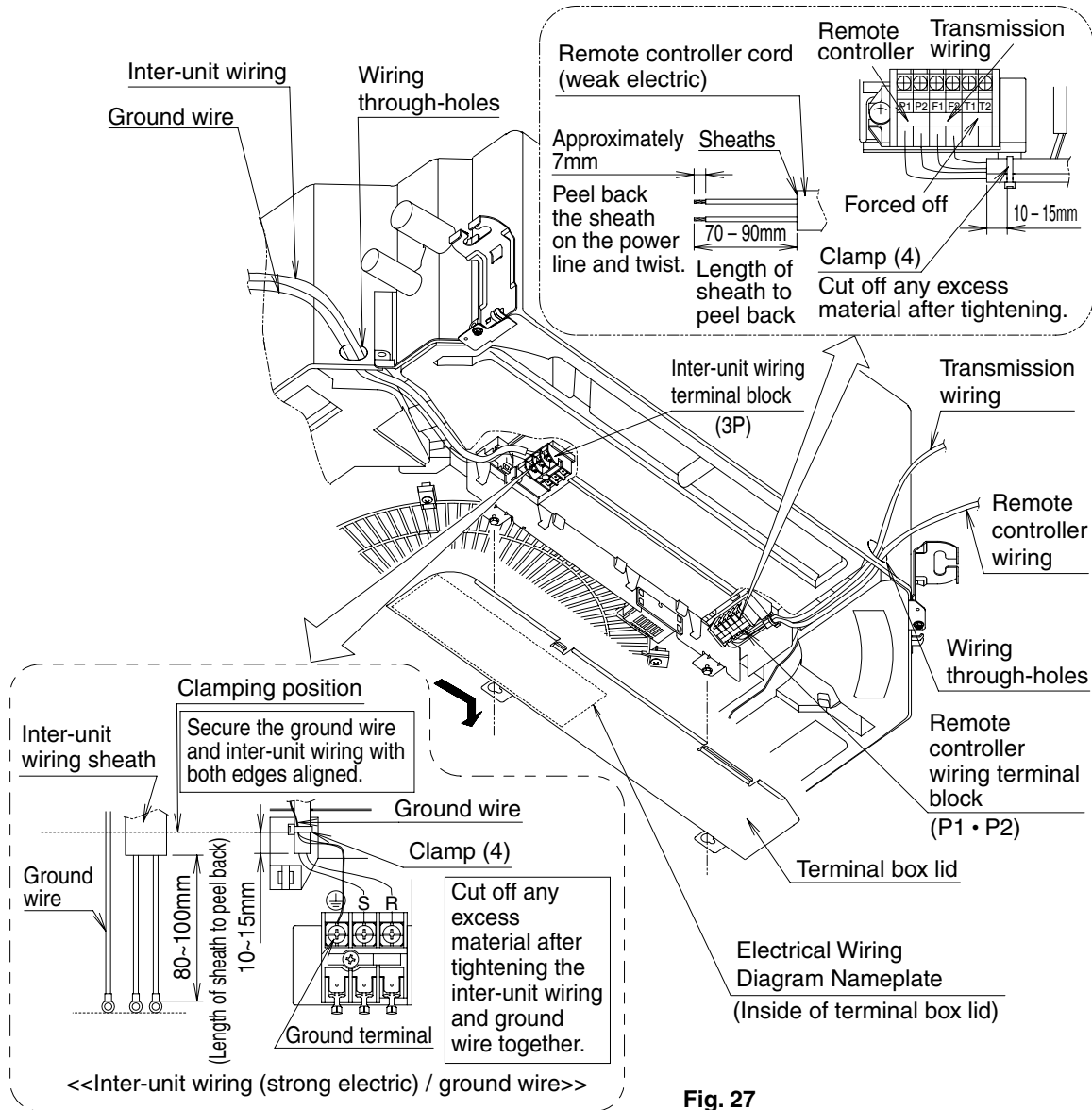


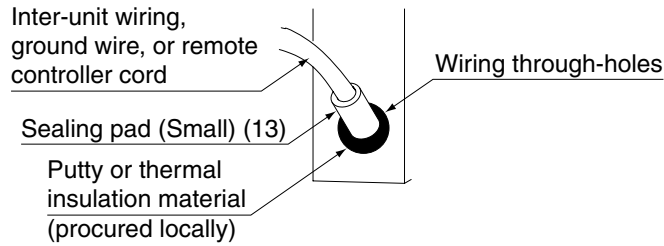
Fig. 27

Observe the notes mentioned below when wiring to the terminal block for wiring the units.

CAUTION

- When clamping wiring, use the included clamping material to prevent outside pressure being exerted on the wiring connections and clamp firmly. When doing the wiring, make sure the wiring is neat and does not cause the terminal box lid to stick up, then close the cover firmly.
- When attaching the terminal box lid, make sure you do not pinch any wires.
- After all the wiring connections are done, fill in any gaps in the through holes with putty or insulation (procured locally) to prevent small animals and insects from entering the unit from outside. (If any do get in, they could cause short circuits in the terminal box.)
- Outside the machine, separate the weak wiring (remote controller cord) and strong wiring (interunit, ground, and other power wiring) at least 50 mm so that they do not pass through the same place together. Proximity may cause electrical interference, malfunctions, and breakage.

Processing method of wiring through-holes



9-2 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)

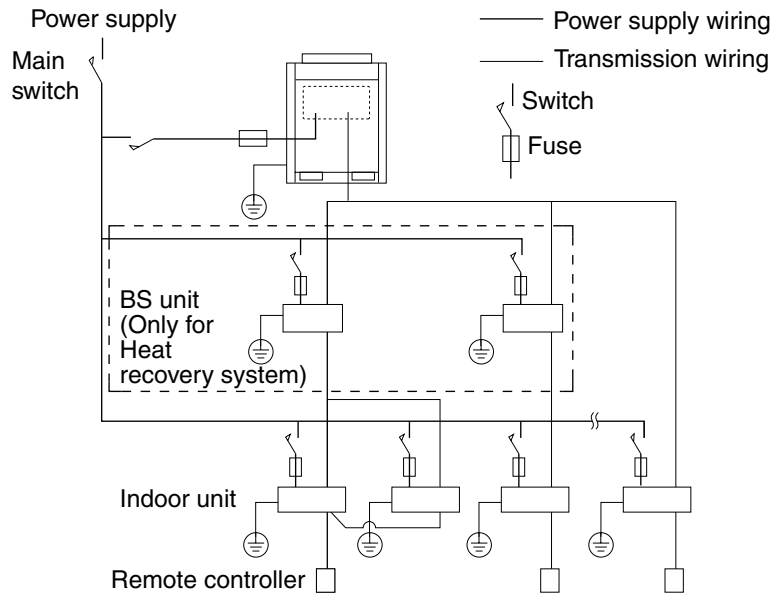


Fig. 28

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

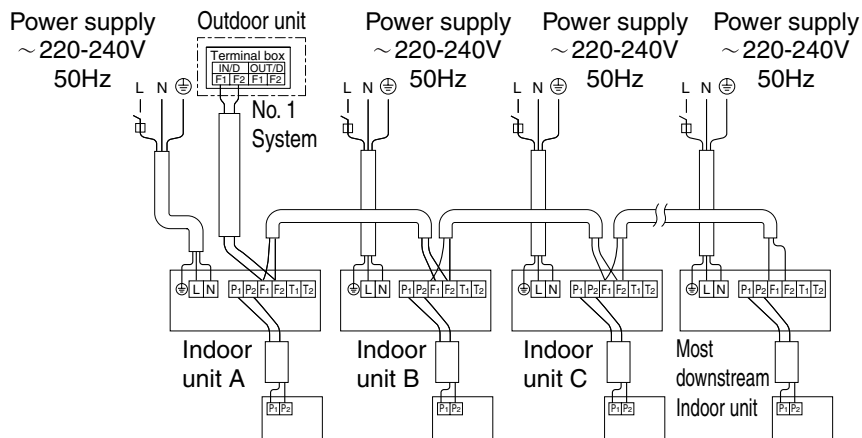


Fig. 29

2. For group control or use with 2 remote controllers

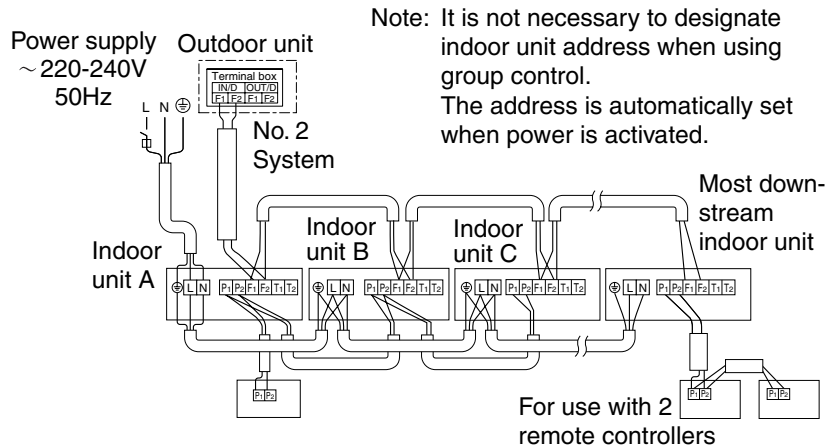


Fig. 30

3. When including BS unit

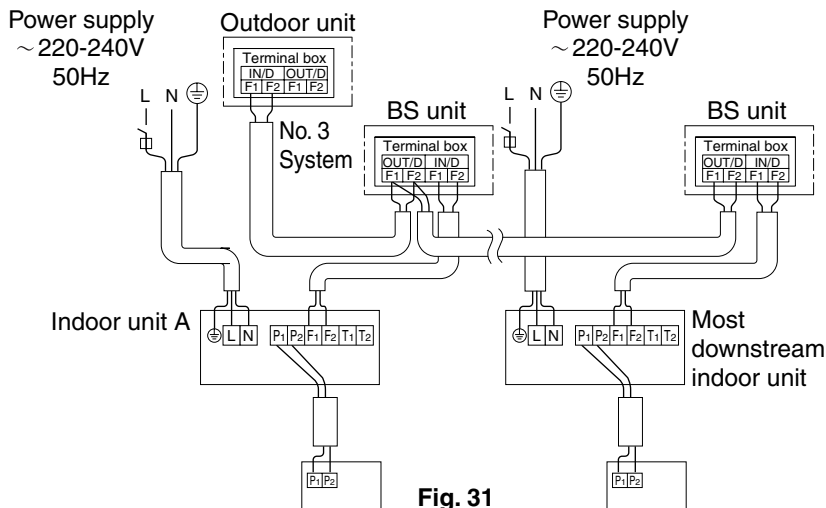


Fig. 31

[PRECAUTIONS]

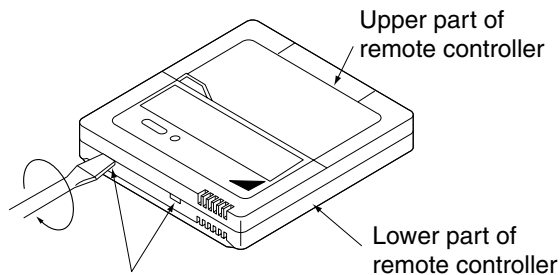
1. A single switch can be used to supply power to units on the same system. However, branch switches and branch circuit breakers must be selected carefully.
2. Do not ground the equipment on gas pipes, water pipes or lightning rods, or crossground with telephones. Improper grounding could result in electric shock.

9-3 Control by 2 remote controllers (controlling 1 indoor unit by 2 remote controllers)

- When using 2 remote controllers, one must be set to “MAIN” and the other to “SUB”.

MAIN/SUB CHANGEOVER

- (1) Insert a ⊖ screw driver into the recess between the upper and lower part of remote controller and, working from the 2 positions, pry off the upper part. (The remote controller PC board is attached to the upper part of remote controller.) **(Refer to Fig. 32)**
- (2) Turn the **main/sub changeover** switch on one of the two remote controller PC boards to “S”. (Leave the switch of the other remote controller set to “M”.) **(Refer to Fig. 33)**



Insert the screwdriver here and gently work off the upper part of remote controller.

Fig. 32

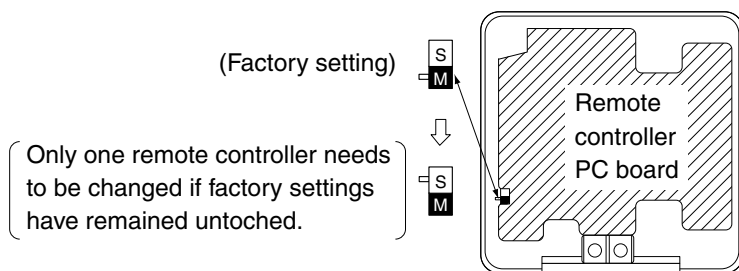


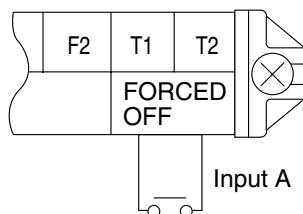
Fig. 33

Wiring Method (See “ELECTRIC WIRING WORK”)

- (3) Remove the terminal box lid
- (4) **Add remote control 2 (slave) to the terminal block for remote controller (P1, P2) in the terminal box. (There is no polarity.) (Refer to Fig. 30 and 8-3.)**

9-4 Computerised control (forced off and on/off operation)

- (1) Wire specifications and how to perform wiring
 - Connect the input from outside to terminals T1 and T2 of the terminal block for remote controller.



Wire specification	Sheathed vinyl cord or cable (2 wire)
Gauge	0.75 - 1.25 mm ²
Length	Max. 100 m
External terminal	Contact that can ensure the minimum applicable load of 15 V DC, 10 mA.

(2) Actuation

- The following table explains FORCED OFF and ON/OFF OPERATIONS in response to Input A.

FORCED OFF	ON/OFF OPERATION
Input "ON" stops operation (impossible by remote controllers.)	Input OFF → ON turns ON unit.
Input OFF enables control by remote controller.	Input ON → OFF turns OFF unit.

(3) How to select FORCED OFF and ON/OFF OPERATION

- Turn the power on and then use the remote controller to select operation.

9-5 Centralized control

- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

10. INSTALLATION OF THE DECORATION PANEL

Caution:

With a wireless remote controller, field setting and test operation cannot be performed without attaching the decoration panel.

<If performing a test run without attaching the decoration panel, read "11. FIELD SETTING" and "12. TEST OPERATION" first.>

Refer to the installation manual attached to the decoration panel.

After installing the decoration panel, ensure that there is no space between the unit body and decoration panel.

11. FIELD SETTING

⚠ CAUTION

When performing field setting or test operation without attaching the decoration panel, do not touch the drain pump. This may cause electric shock.

- Check that the outdoor unit has been wired properly.

Make sure the terminal box lids are closed on the indoor and outdoor units.

Field setting must be made from the remote controller and in accordance with installation conditions.

- Setting can be made by changing the "Mode No.", "FIRST CODE NO." and "SECOND CODE NO."
- For setting procedures and instructions, see "Field settings" provided with the remote controller.

11-1 Setting ceiling height

- Select the SECOND CODE NO. that corresponds to the ceiling height "Table 4".
(SECOND CODE NO. is factory set to "01".)

Table 4

		FXFQ - PVE		Mode No. Note) 1	FIRST CODE NO.	SECOND CODE NO.
		25 · 32 · 40 · 50 · 63 · 80 type	100 · 125 type			
Ceiling height (m)	Standard · All round outlet	≤ 2.7	≤ 3.2	13 (23)	0	01
	High ceiling 1	2.7 - 3	3.2 - 3.6			02
	High ceiling 2	3 - 3.5	3.6 - 4.2			03

Note:

1. "Mode No." setting is done in a batch for the group. To make or confirm settings for an individual unit, set the internal mode number in parentheses.
2. The figure of the ceiling height is for the all round outlet. For the settings for four-direction (part of corner closed off), three-direction and two-direction outlets, see the installation manual and technical guide supplied with the separately sold closure material kit.

11-2 Setting of air direction

- See the installation manual included with the sealing material of air discharge outlet kit, sold separately and technical guide, for ceiling height settings for two and three-direction air discharge. (The SECOND CODE NO. is factory set to “01” (all round outlet) before shipping.)

11-3 Settings for Mounting Options

- When installing an option sold separately, refer to the installation manual provided to the option.

11-4 Setting air filter sign

- Remote controllers are equipped with liquid crystal display air filter signs to display the time to clean air filters.
- Change the SECOND CODE NO. according to “Table 5” depending on the amount of dirt or dust in the room. (SECOND CODE NO. is factory set to “01” for filter contamination-light.)

Table 5

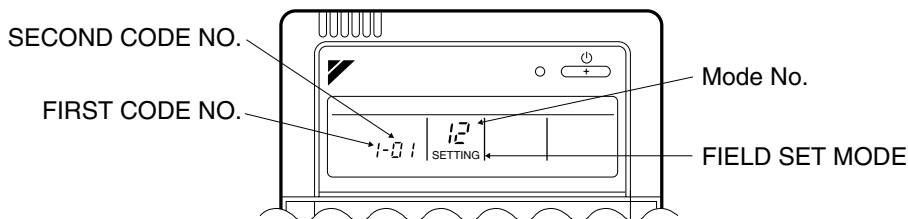
Setting	Spacing time of display air filter sign (long life type)	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Air filter contamination-light	Approx. 2500 hrs	10 (20)	0	01
Air filter contamination-heavy	Approx. 1250 hrs			02
No Display			3	

Note:

1. “Mode No.” setting is done in a batch for the group. To make or confirm settings for an individual unit, set the internal mode number in parentheses.
 2. Make settings for “No Display” in cases where no cleaning display is required, e.g., at the time of regular maintenance servicing.
- The air conditioner is provided with a long life filter as a standard accessory. Explain to the customer the necessity of cleaning the filter periodically along with the set time for filter cleaning for the prevention of clogging.

When using wireless remote controllers

- When using wireless remote controllers, wireless remote controller address setting is necessary. Refer to the installation manual attached to the wireless remote controller for setting instructions.



- Set the remote controller to the field set mode. For details, refer to the “HOW TO SET IN THE FIELD”, in the remote controller manual.
- When in the field set mode, select mode No. 12, then set the first code (switch) No. to “1”. Then set second code (position) No. to “01” for FORCED OFF and “02” for ON/OFF OPERATION. (FORCED OFF at factory set)

12. TEST OPERATION

Refer to the installation manual of the outdoor unit.

- The operation lamp of the remote controller will flash when an malfunction occurs. Check the malfunction code on the liquid crystal display to identify the point of trouble. An explanation of malfunction codes and the corresponding trouble is provided in “CAUTION FOR SERVICING” of the indoor unit.
If any of the items in Table 6 are displayed, there may be a problem with the wiring or power, so check the wiring again.

Table 6

Remote control display	Content
“Concentrated Management” is lit up	<ul style="list-style-type: none"> • There is a short circuit at the FORCED OFF terminals (T1, T2).
“U4” is lit up “UH” is lit up	<ul style="list-style-type: none"> • The power on the outdoor unit is off. • The outdoor unit has not been wired for power supply. • Incorrect wiring for the transmission wiring and / or FORCED OFF wiring.
No display	<ul style="list-style-type: none"> • The power on the indoor unit is off. • The indoor unit has not been wired for power supply. • Incorrect wiring for the remote controller wiring, the transmission wiring, and / or the FORCED OFF wiring.

- If the decoration panel is installed on the indoor unit during the test run, check the operation of the swing flap on the panel.
- In order to protect the indoor unit, instruct the customer not to operate the air conditioner until the interior work is completed if the interior work has not been finished at the end of the test run.
(If the air conditioner is operated, substances discharged from the paint, adhesive, etc. can contaminate the indoor unit, and they may cause splashing or leakage of water.)







NOTE 




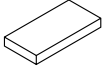





- After the test run is finished, check the items listed in “**2. Items to be checked at time of delivery**”.

11. Accessories

Standard Accessories

FXFQ25-125P

Name	(1) Drain hose	(2) Metal clamp	(3) Washer for hanger bracket	(4) Clamp	(5) Paper pattern for installation	(6) Screw (M4)
Quantity	1 pc.	1 pc.	8 pcs.	6 pcs.	1 pc.	4 pcs.
Shape					Also used as packing material 	For paper pattern for installation 

Name	(7) Washer fixing plate	Insulation for fitting	Sealing pad			Installation guide	(Other) • Installation manual • Operation manual
Quantity	4 pcs.	1 each	1 each	1 pc.	1 pc.	1 pc.	
Shape		(8) for gas pipe  (9) for liquid pipe 	(10) Large  (11) Medium-1  (12) Medium-2 	(13) Small 	(14) 	(15) 	

3P161684-3B

Optional Accessories (For Unit)

Item		Model	FXFQ25PVE	FXFQ32PVE	FXFQ40PVE	FXFQ50PVE	FXFQ63PVE	FXFQ80PVE	FXFQ100PVE	FXFQ125PVE	
Decoration panel			BYCP125K-W1								
Sealing member of air discharge outlet			KDBH55K160F								
Panel spacer			KDBP55H160FA								
Filter related	High efficiency filter unit	65%	KAFP556H80					KAFP556H160			
		90%	KAFP557H80					KAFP557H160			
	Replacement high efficiency filter	65%	KAFP552H80					KAFP552H160			
		90%	KAFP553H80					KAFP553H160			
	Filter chamber			KDDFP55H160							
	Replacement long life filter		Non-woven type	KAFP551K160							
Ultra long-life filter			KAFP55H160								
Replacement ultra long life filter			KAFP55H160H								
Fresh air intake kit	Chamber type	Without T-joint pipe and fan	KDDP55K160								
		With T-joint pipe without fan	KDDP55K160K								
	Direct installation type			KDDP55X160							
Branch duct chamber			KDJP55H80					KDJP55H160			
Chamber connection kit			KKSJ55K160								
Insulation kit for high humidity			KDTP55K80					KDTP55K160			

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Optional Accessories (For Controls) : Refer to P.645

BYCP125K-W1 — Decoration Panel

1. BEFORE INSTALLATION

1. PRECAUTIONS

- Refer also to the installation manual attached to the indoor unit.

2. ACCESSORIES

- Installation manual.

3. NOTE TO INSTALLER

- Be sure to instruct the customer how to properly operate the system showing him/her the attached operation manual.

2. PREPARATION OF DECORATION PANEL

<<For this unit, you are able to select air flow directions. To discharge air in 2 or 3 directions, it is necessary to purchase optional blocking pad kit.>>

HANDLING OF DECORATION PANELS

- Never place the panel facing down nor lean it against a wall nor leave it on a projecting object.
- Never touch or put pressure on the swing flap.
(The swing flap may malfunction)

(1) Remove the suction grille from the decoration panel.

- 1 Press the lever on the suction grille and lift the lever side. **(Refer to Fig. 1)**
- 2 Detach the suction grille from the decoration panel by lifting the grille up approximately 45 degrees. **(Refer to Fig. 2)**
- 3 Remove the transporting cardboard (in 4 locations) from the main unit. **(Refer to Fig. 3)**
- 4 Remove the transporting tape (in 4 locations) on the back of the suction grille. **(Refer to Fig. 4)**

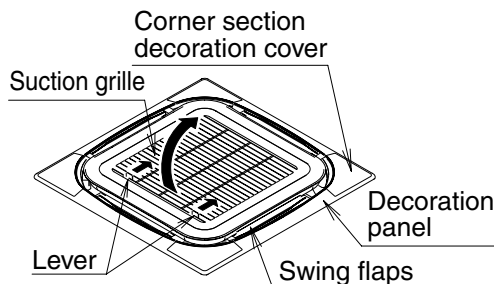


Fig. 1

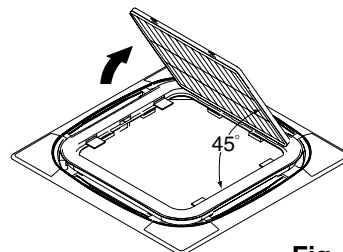


Fig. 2

(2) Remove the corner section decoration cover.

- Lift the four corner decoration covers in the direction of the arrow and remove. **(Refer to Fig. 5)**

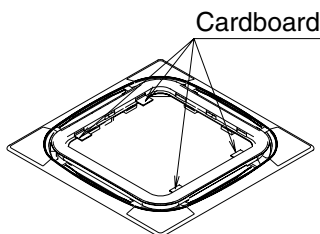
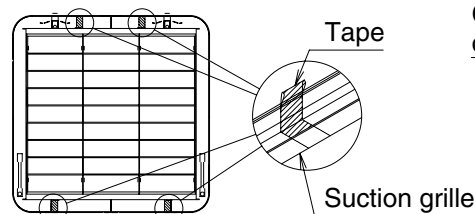


Fig. 3



Rear side of the suction grille

Fig. 4

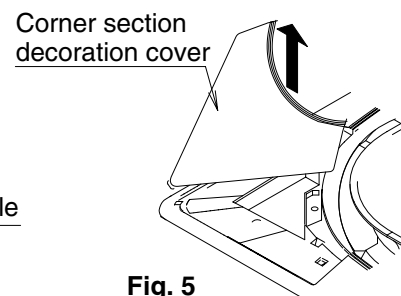


Fig. 5

3. INSTALLATION OF THE DECORATION PANEL TO THE INDOOR UNIT BODY

<<Refer to the installation manual attached to the indoor unit for the installation of the indoor unit.>>

- (1) Match the "PIPING SIDE" and "DRAIN SIDE" displays on the decoration panel with the position of the piping section and drain section on the indoor unit.
- (2) Install the decoration panel
 - 1 Temporarily install the decoration panel to the indoor unit by hanging the temporary latch of the decoration panel to the hook of the indoor unit body. (2 locations)
 - 2 Hook the four mounting brackets on the corner sections of the decoration panels onto the hooks around the main indoor unit body.
(Make sure at this time that the swing motor lead wire does not get caught between the decoration panel and the main unit.)
 - 3 Screw all 4 hexagon head screws located right beneath the latches in approximately 5 mm. (Panel will rise)
 - 4 Adjust the decoration panel by turning it to the arrowed direction in Fig. 6 so that the ceiling opening is completely covered.

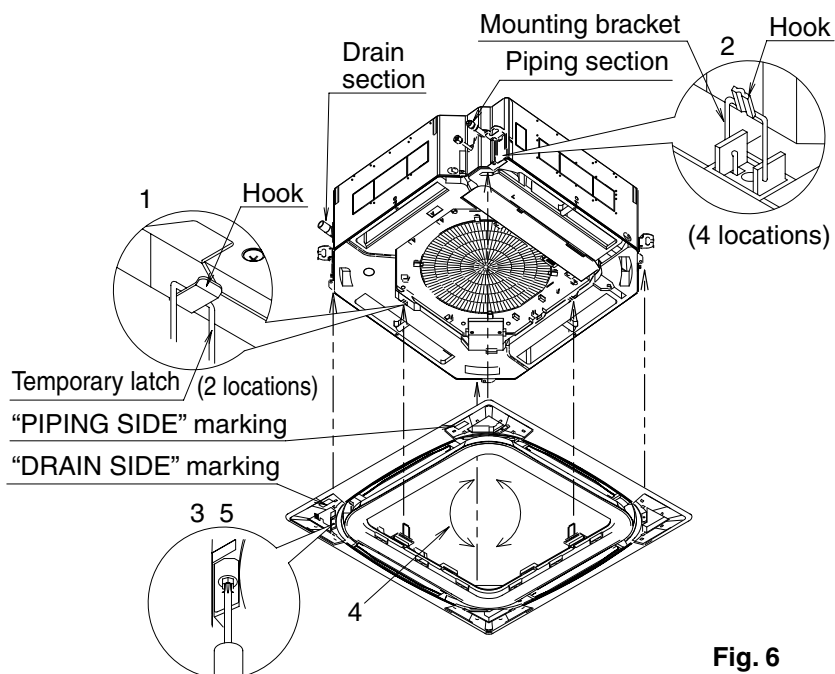
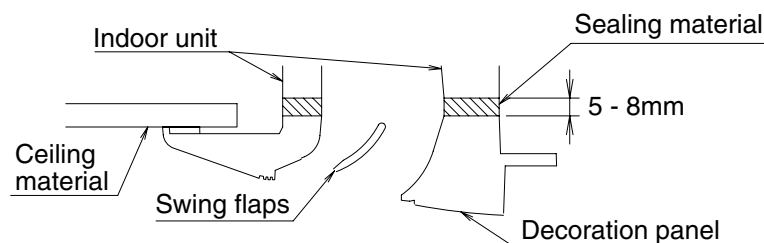


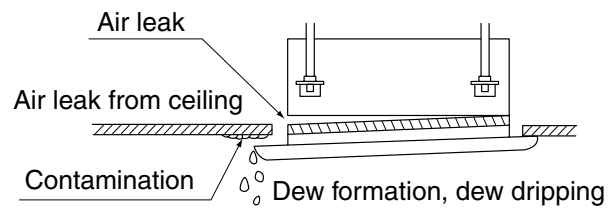
Fig. 6

- 5 Tighten the screws until the thickness of the sealing material between the decoration panel and the indoor unit body reduces to 5-8 mm.

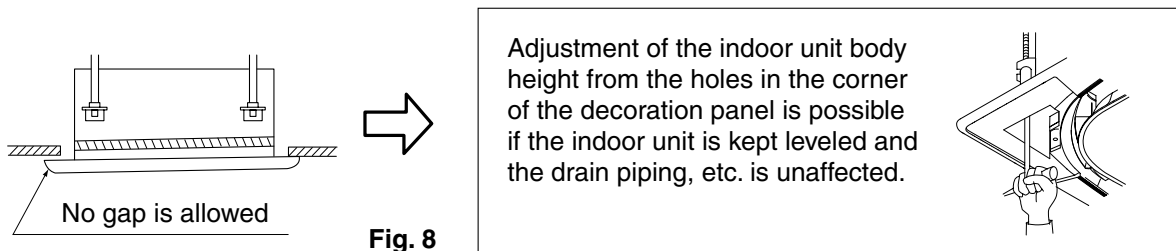


[PRECAUTIONS]

- Improper screwing of the screws may cause the troubles shown in Fig. 7. Screw properly.

**Fig. 7**

- If gap is still left between the ceiling and the decoration panel after screwing the screws, readjust the indoor unit body height. (Refer to Fig. 8)

**Fig. 8****(3) Wiring of the decoration panel (Refer to Fig. 9)**

- 6 Remove the electric components box lid.
- 7 Connect the connectors for swing flap motor lead wire installed on the decoration panel.
- 8 Replace the electric components box lid reversing the procedure to remove it.

Make sure that the swing flap motor lead wire is not caught between the electric components box and its lid, and between the indoor unit body and the decoration panel.

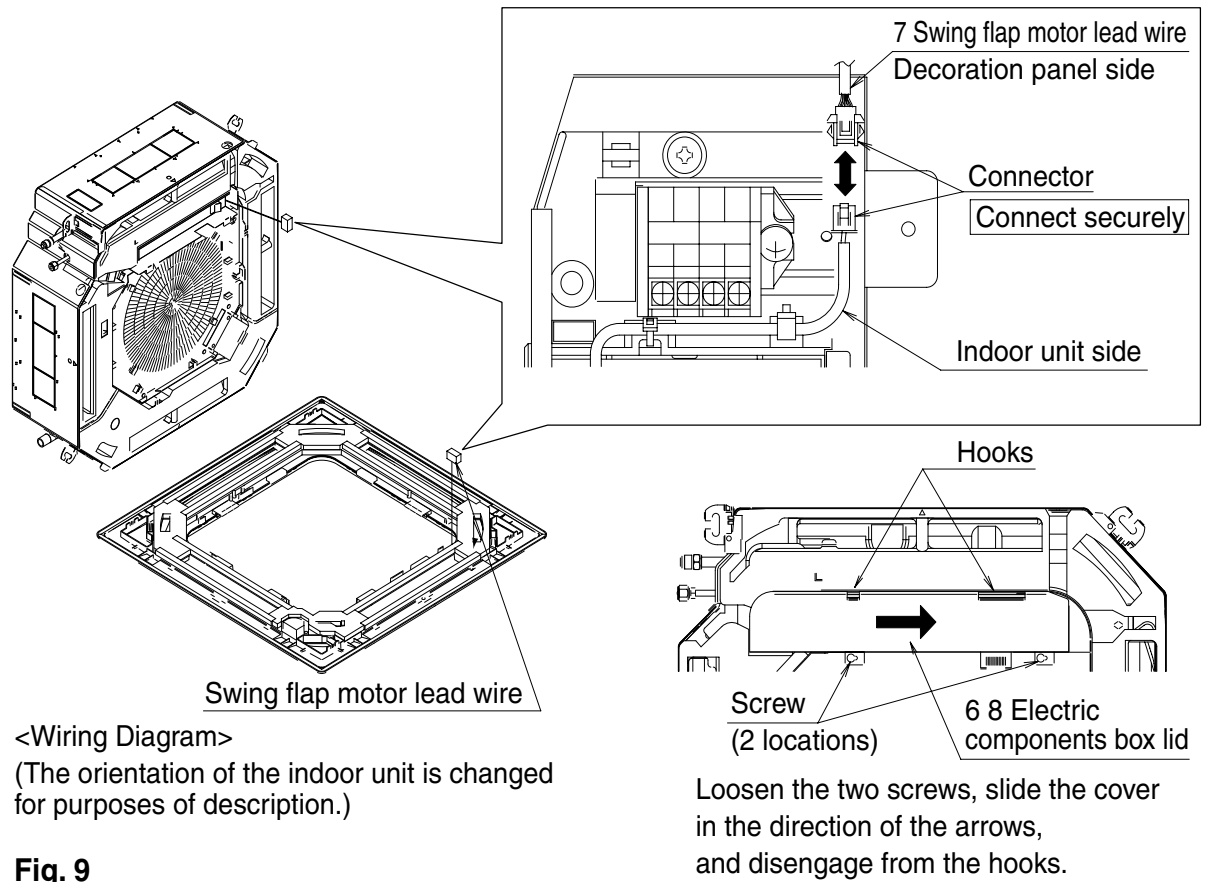


Fig. 9

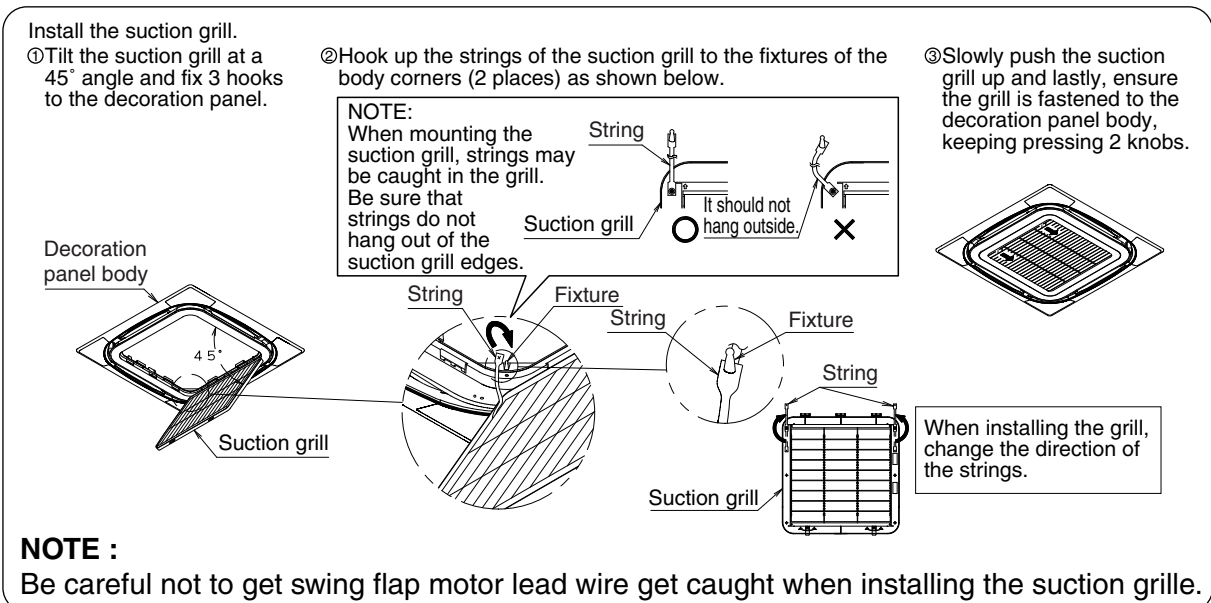
4. INSTALLATION OF SUCTION GRILLE AND SERVICE COVER

(1) Install the suction grille

Install by reversing the procedure shown in “PREPARATION OF DECORATION PANEL”.

It is possible to install the suction grille in 4 directions by turning the suction grille.

Change the direction when adjusting the direction of the suction grille of multiple units or in meeting customers' demands.



(2) Install the corner section decoration cover.

- 1 Attach the string of the corner section decoration cover to the pin of the decoration panel. (Refer to Fig. 10)
- 2 Install the corner section decoration cover over the decoration panel. (Refer to Fig. 11)

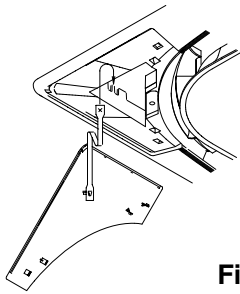
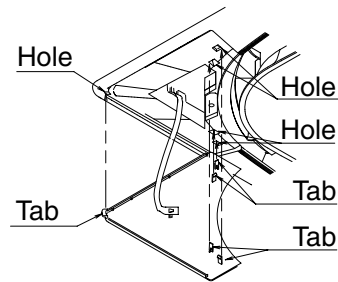


Fig. 10



Attach by inserting the five tabs on the corner section decoration cover into the holes on the decoration panel.

Fig. 11

C : 3PA64319-13Q

KDBH55K160(F) — Sealing Material of Air Discharge Outlet

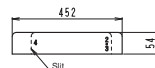
KDBH55K160



Dimensions

Unit:mm

Sealing materials for long air outlets (Polyethylene foam t10): 2 pieces



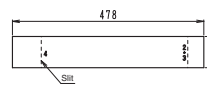
Sealing materials for horizontal blades (Polyethylene foam t10): 8 pieces



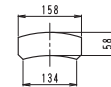
Sealing materials for air outlets at the corner (Polyethylene foam t10): 1 piece for each



Tape for sealing materials for long air outlets (Non-woven fabric t0.6): 2



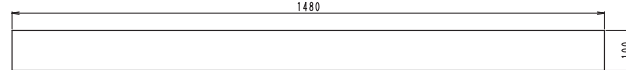
Tape for sealing materials for air outlets at the corner (Non-woven fabric t0.6): 3



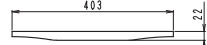
Tape for sealing materials for air outlets at the corner (Non-woven fabric t0.6): 1



Side insulation plate (NB foam t10) : 2

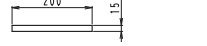


Antisweat material (Flocking tape): See right



Applicable part number	Qty and colour
KDBH55K160F	4, grey
KDBH55K160	4 for each, Dark grey or black

Antisweat material (Flocking tape): See right



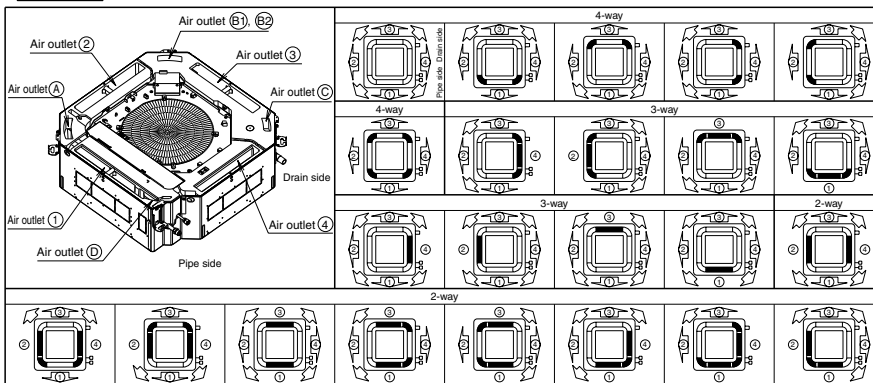
Applicable part number	Qty and colour
KDBH55K160F	4, grey
KDBH55K160	4 for each, Dark grey or black

1 Blow Direction Selection and Sealing Material Mounting

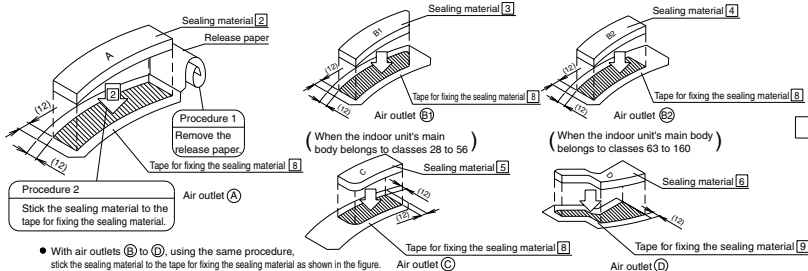
(1) Blow direction selection

- Depending on the installation location, select a blow direction from the table below. For the setting position number, refer to 4 Field Setting.
- For the selection of installation location, refer to the installation manual attached to the indoor unit's main body.

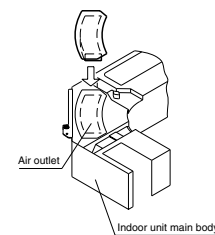
Precautions Blow direction patterns other than those shown in the figure below cannot be selected. (Condensation may occur.)



(2) Matching with the corner air outlets (A) to (D) that are to be blocked, stick the sealing material to the tape for fixing the sealing material. (Stick the sealing material so that the sealing material comes to the positions shown in the schematic diagram.)



(3) Stick the sealing material that was prepared in (2) to the air outlet of indoor unit main body.



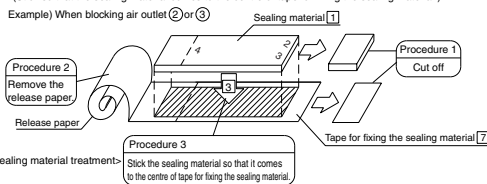
- With air outlets (B) to (D), using the same procedure, stick the sealing material to the tape for fixing the sealing material as shown in the figure.

Precautions

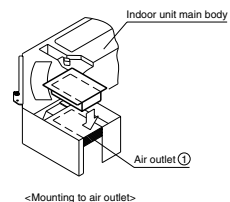
- The sealing material has a directional property. Be sure to stick the sealing material to the tape for fixing the sealing material so that the printed number of outlet to be blocked becomes visible.
- When blocking both the air outlet (1) and air outlet (D), start the sticking of sealing material with the air outlet (D).

(4) Matching the longitudinal air outlet numbered (1) to (4) that are to be blocked, prepare the sealing material and tape for fixing the sealing material.

- Cut both the sealing material and tape for fixing the sealing material along the perforation (dotted line).
- Stick the sealing material to the tape for fixing the sealing material. (Stick so that the sealing material comes to the centre of the tape for fixing the sealing material.)



(5) Stick the sealing material that was prepared in (4) to the air outlet of indoor unit main body.



- When blocking the air outlet (1), the sealing material preparation is not necessary.

Precautions The sealing material has a directional property. Be sure to stick the sealing material to the tape for fixing the sealing material so that the printed number of outlet to be blocked becomes visible.

2 Sticking of Absorbent to Air Outlet

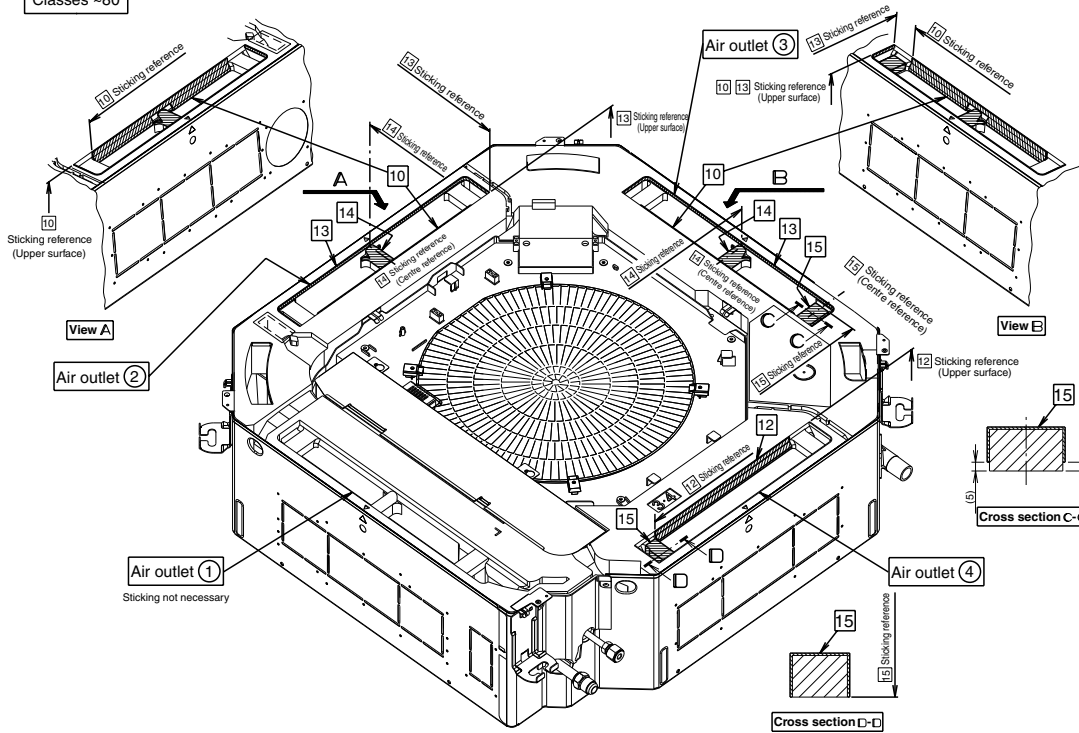
• Stick the absorbent indicated in the table below to the air outlet that was not blocked in 1 according to the procedure shown in the figure below.

	Classes -80	Classes 100-
Air outlet ①	—	—
Air outlet ②	Absorbent 10 13 14 Total 3 pieces	—
Air outlet ③	Absorbent 10 13 14 15 Total 4 pieces	Absorbent 11 13 14 Total 3 pieces
Air outlet ④	Absorbent 12 15 Total 2 pieces	—

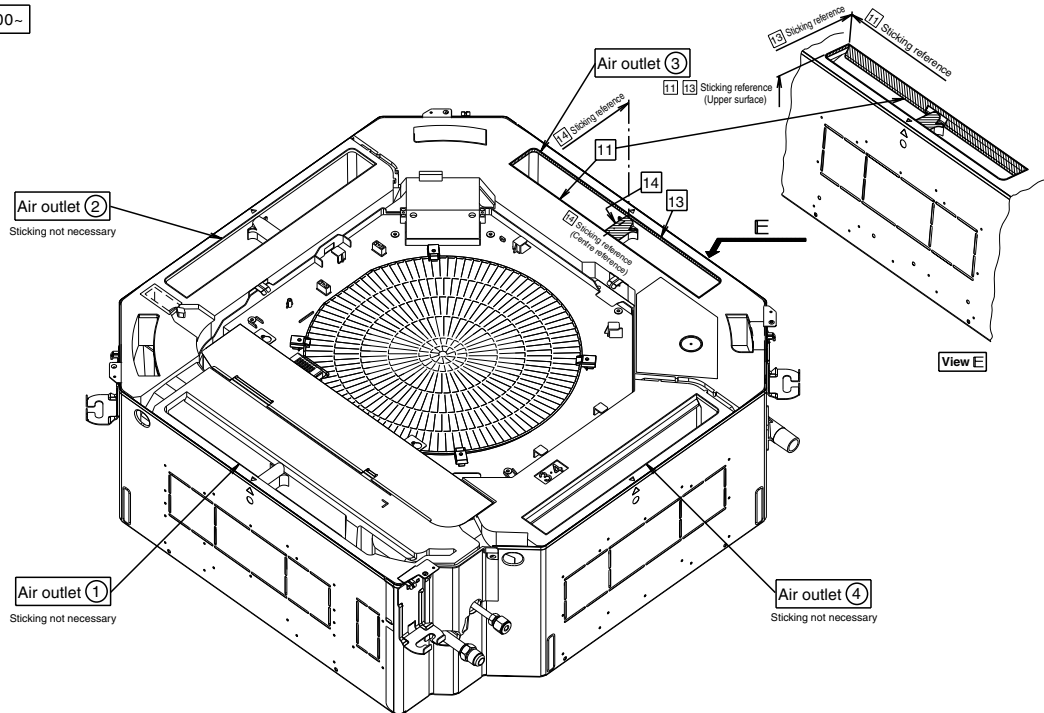
Precautions

- If the sticking of absorbent is omitted, condensation may occur.
- To positions where the absorbent is already stuck, the sticking of absorbent is not necessary.

Classes -80



Classes 100~



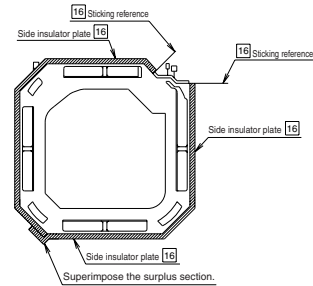
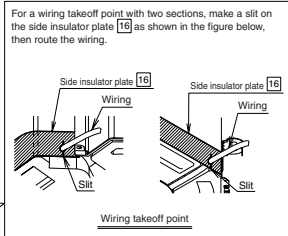
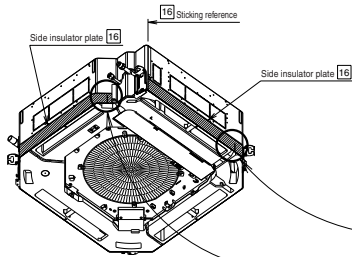
continued on back side

3 Sticking of Insulator to Indoor Unit Main Body

• For safety, be sure to shut off power supply before starting the insulator sticking operation, decoration panel mounting operation, and connecting of connectors for swinging.

- Stick the side insulator plate 16 according to the figure below.

Precautions If the sticking of insulator is omitted, condensation may occur.



4 Sticking of Absorbent to Panel Horizontal Blade

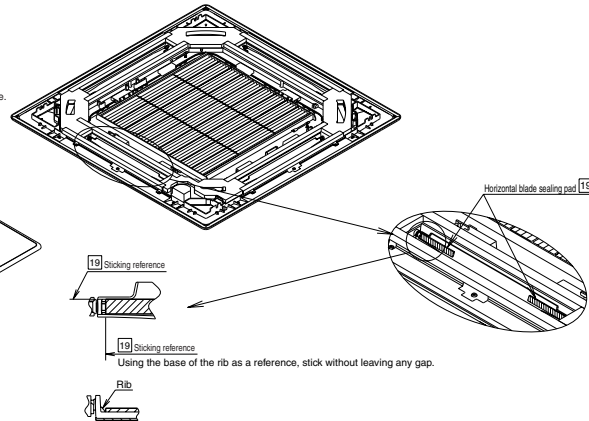
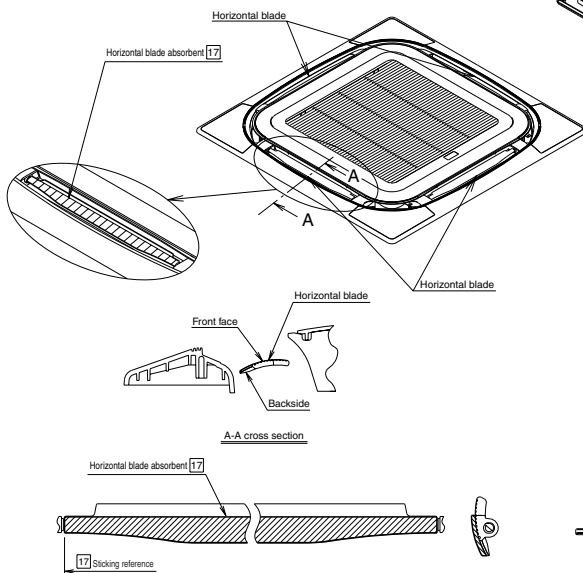
- Perform the operation on soft cloth to prevent damage to the panel.
- Perform sticking for the horizontal blades of all air outlets.
- Do not apply force to the horizontal blade. (Application of force may lead to horizontal blade swing failure.)

- ② Stick the horizontal blade sealing pad 19 to the backside of the blade. (For both left and right)

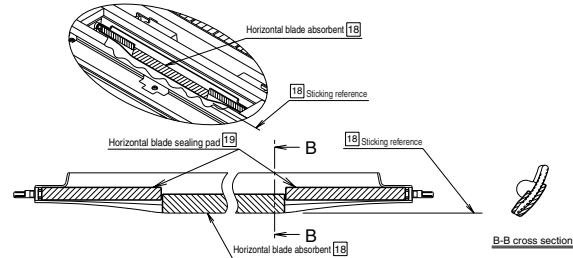
- According to the figure below, stick the horizontal blade absorbent 17 and 18 as well as the horizontal blade sealing pad 19.
- (With KDBH55K160, stick the horizontal blade absorbent with matching blade colour.)

Precautions When the sticking of absorbent and sealant is omitted, condensation may occur.

- ① Stick the horizontal blade absorbent 17 in line with the blade shape to the front face of the horizontal blade.



- ③ Stick the horizontal blade absorbent 18 in between the horizontal blade sealing pad 19.



5 Field Setting

• Depending on the installation status of the indoor unit's main body, the field setting needs to be performed by remote control operation.

- Perform the setting by switching among the following three items: "Mode number", "Setting switch number", and "Setting position number".

- The setting procedure and operation method are described in "How to perform field setting" attached to the remote control.

- (1) Setting by number of air outlets used

While referring to "How to perform field setting" attached to the remote control, perform the setting according to the table in the right.

Also, when the corner air outlet is blocked with 4-way blow, set the wind direction slightly downward.

(Note) When the installation height becomes higher than the standard, the setting by ceiling height in (2) becomes necessary.

- (2) Setting by ceiling height

For the ceiling height, refer to the guidelines of ceiling height and number of air outlets used, then perform the setting for each air outlet used according to the table below.

(Guidelines of ceiling height and number of air outlets used)

Indoor unit	Number of air outlets used							
	Types -80				Types 100-			
	All-around blow	4-way blow	3-way blow	2-way blow	All-around blow	4-way blow	3-way blow	2-way blow
Standard	2.7m or less	3.1m or less	3.0m or less	2.5m or less	3.2m or less	3.4m or less	3.6m or less	4.2m or less
High ceiling ①	3.0m or less	3.4m or less	3.3m or less	3.6m or less	3.6m or less	3.9m or less	4.0m or less	4.2m or less
High ceiling ②	3.5m or less	4.0m or less	3.5m or less	—	4.2m or less	4.5m or less	4.2m or less	—

Values for ceiling height are provided as reference.

[Setting content] (Setting by number of air outlets used)

Number of air outlets used	Mode number	Setting switch number	Setting position number
3-way blow	13 (23)	1	02
2-way blow			03

[Setting content] (Setting for when corner air outlet is blocked with 4-way blow)

(Wind direction)	Mode number	Setting position number
Standard	13 (23)	02
Slightly downward		03

[Setting content] (Setting by ceiling height)

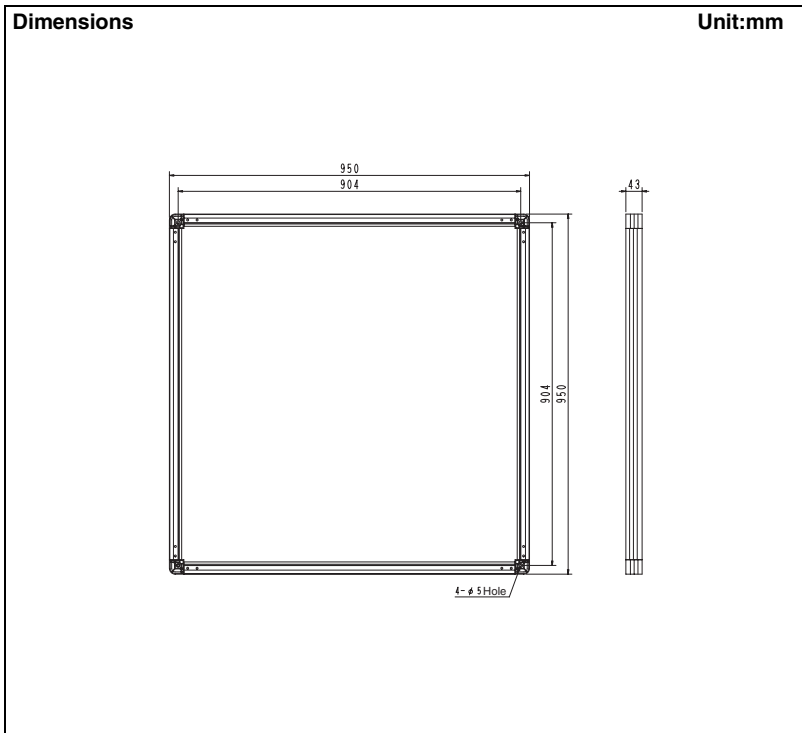
	Mode number	Setting position number
Standard		01
High ceiling ①	13 (23)	02
High ceiling ②		03

KDBP55H160FA — Panel Spacer



- Using the panel spacer in areas of the ceiling with limited space makes it possible to install the air conditioner.
- Hides the gap between the decoration panel and the ceiling.

Model	KDBP55H160FA
Item	
Exterior	Fresh White
Material	Outside frame: Resin Insulation: Foam polyethylene
Component	Panel spacer, Insulation, Sealant, Mounting screws, Installation manual
Mass (kg)	1.2



Combination table

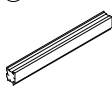
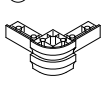


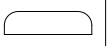
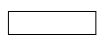
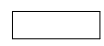
Panel spacer	KDBP55H160FA	KDBP55H160WA KDB55K160WA
Decoration panel	BYCP125K-W1	BYCP125D-W1 BYC125K-W1 BYC125KJW1

Caution

- When the Panel Spacer is installed, it is not possible to have 2-way air outlet.
- Refer to the installation manual for both indoor unit and the Panel spacer for its installation.

Contents of kit

Check if following parts are included with Your Kit,

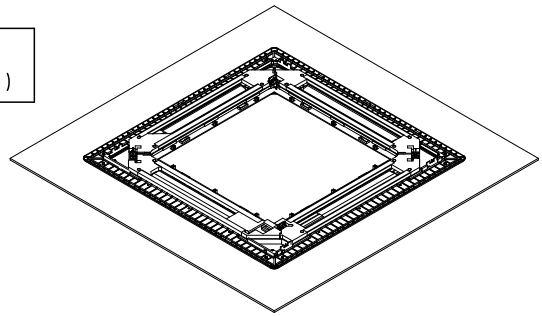
Name	Panel spacer frame	Resin corner part	Fixing metal	Screw
Quantity	4 PCS,	4 PCS,	4 PCS,	28 PCS,
Shape・number	① 	② 	③ 	④  M4×1.0 Tapping screw (Class 2)
Name	Sealing material	Caution label	Others	
Quantity	2 PCS,	2 PCS,	1 PC,	
Shape・number	⑤ 	⑥ 	⑦  • This Installation Manual	

1 Preparation of the Decoration panel

- Handle the decoration panel with care,

Never place the panel face down, or lean the panel against wall or place on the projective object.
(It causes the dent or damage of the surface of the panel or damage of swing motor.)

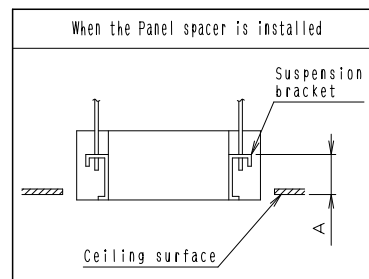
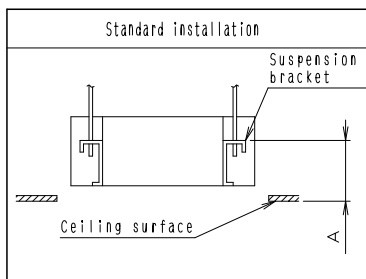
- (1) Remove the suction grill from the decoration panel.
(Refer to the installation manual of the decoration panel how to remove.)
- (2) Place the panel face down on the corrugated board or the vinyl sheet to protect the surface of the panel.



2 Installation of the indoor unit

Adjust the height of the indoor unit.

Be sure the piping will not contact with the ceiling joist etc, after adjusting the height.

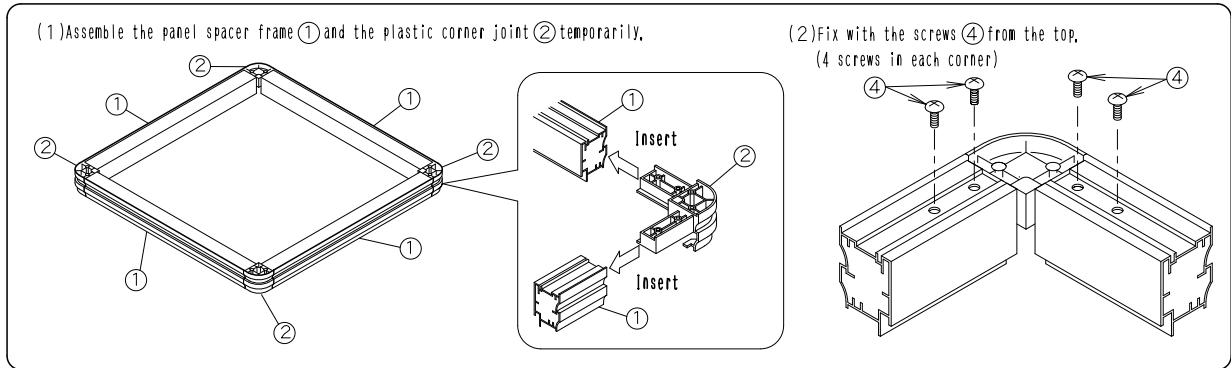


Decoration panel	A(mm)
BYCP125D-W1 BYC125K-W1 BYC125KJW1	145~150
BYCP125K-W1	125~130

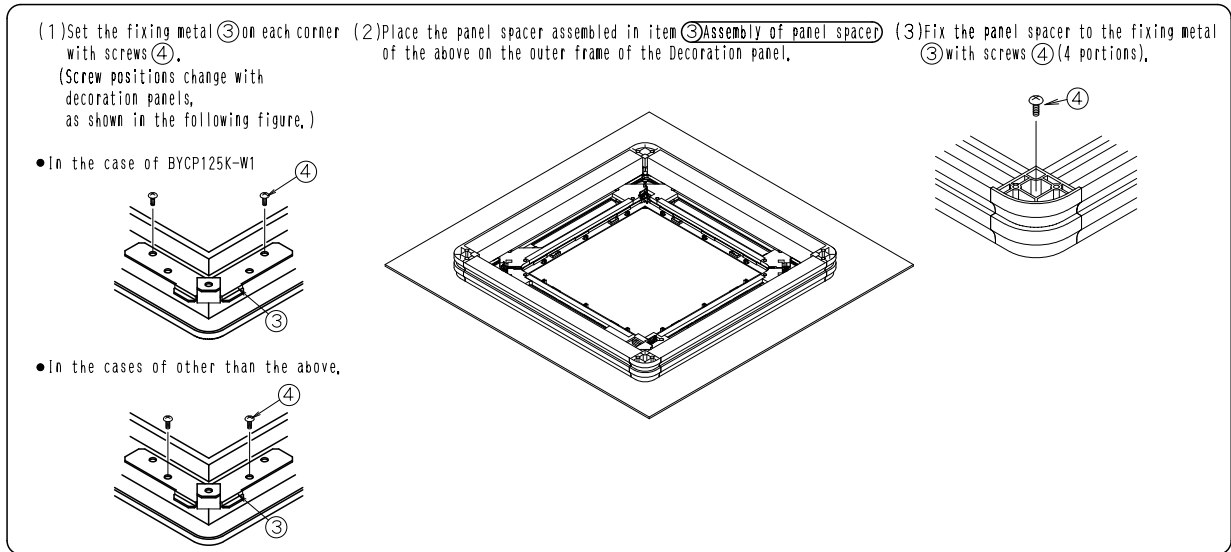
Decoration panel	A(mm)
BYCP125D-W1 BYC125K-W1 BYC125KJW1	105~110
BYCP125K-W1	85~90

1P136564E

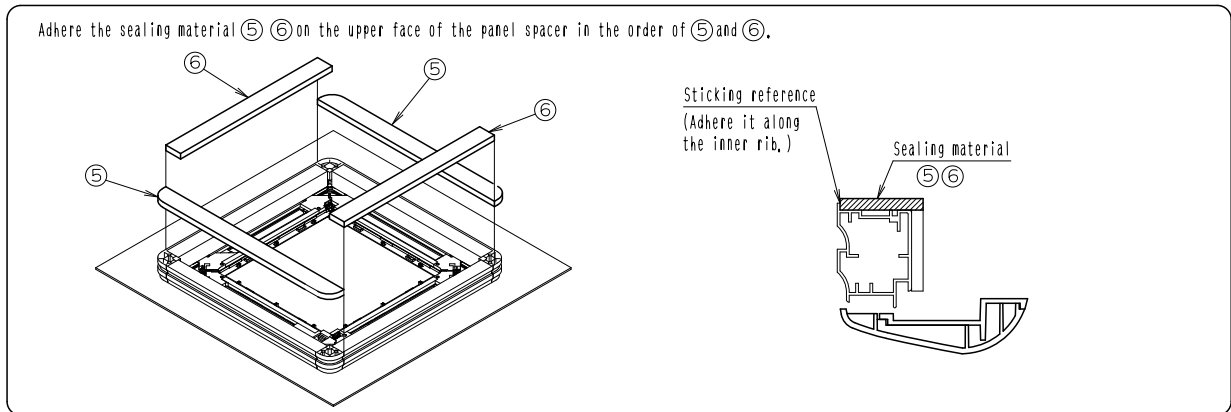
3 Assembly of panel spacer



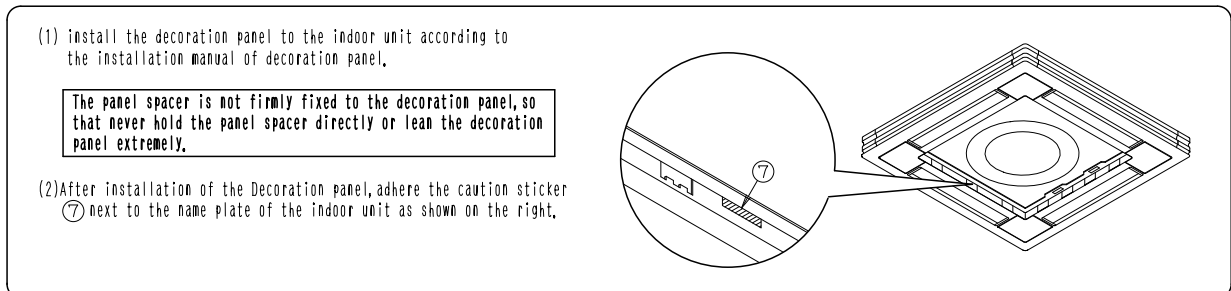
4 Fixing to the Decoration panel



5 Adhesion of the sealing material



6 Installation of the Decoration panel



1P136564E

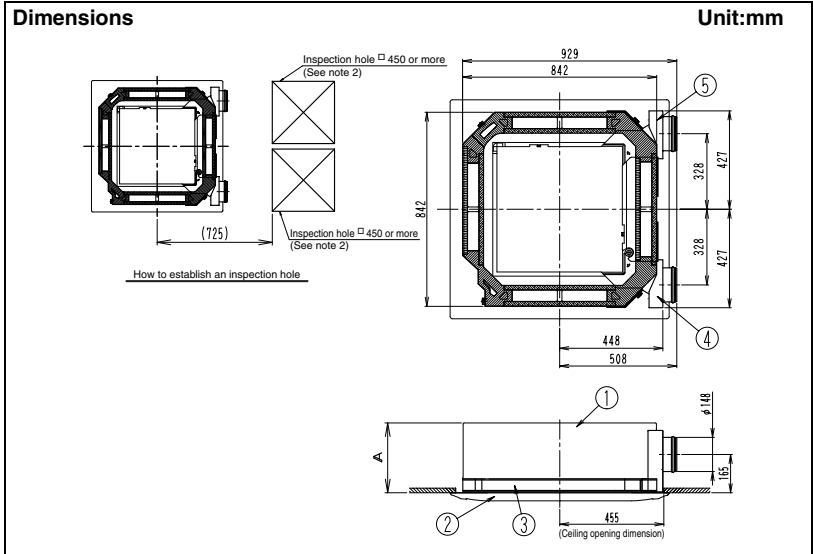
KDDP55K160(K) — Fresh Air Intake Kit (Chamber type)

KDDP55K160 (without T-shape, without Fan)



Caution

1. Maximum length of the duct is 4 meters.
2. When installing this kit, an inspection hole is required (in order to maintain this kit). Establish an inspection holes on either side.
3. This kit is field assembly.
4. Install the hanging fixing for the T joint. Otherwise the load from T-shape pipe assembly, etc., could create a gap between the indoor unit and suction chamber.
5. When mounting the duct fan, be sure to use the wiring modification adaptor to interlock with the indoor unit fan.
6. With the intake wind volume, 10% or less of the “H” wind volume of the indoor unit is recommended.
7. This graph shows values from the inlet of the T joint through that of the indoor unit when KDDP55K160K (with a T joint) is connected.



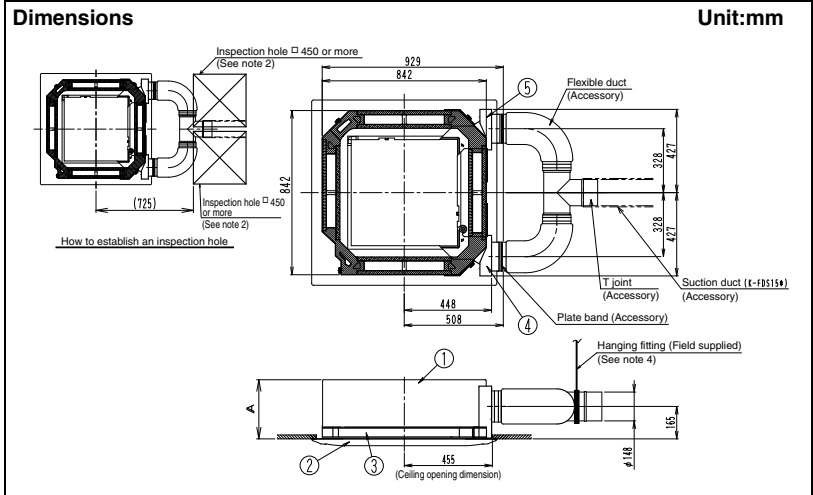
Item	Model	KDDP55K160
Fresh air intake method		Fresh air intake by air conditioning fan
Diameter of connection duct		φ150
Mass (kg)		4.5

KDDP55K160K (with T-shape, without Fan)



Caution

1. Maximum length of the duct is 4 meters.
2. When installing this kit, an inspection hole is required (in order to maintain this kit). Establish an inspection holes on either side.
3. This kit is field assembly.
4. Install the hanging fixing for the T joint. Otherwise the load from T-shape pipe assembly, etc., could create a gap between the indoor unit and suction chamber.
5. When mounting the duct fan, be sure to use the wiring modification adaptor to interlock with the indoor unit fan.
6. With the intake wind volume, 10% or less of the “H” wind volume of the indoor unit is recommended.
7. This graph shows values from the inlet of the T joint through that of the indoor unit when KDDP55K160K (with a T joint) is connected.



Item	Model	KDDP55K160K
Fresh air intake method		Fresh air intake by air conditioning fan
Diameter of connection duct		φ150
Mass (kg)		6.5

Caution After thoroughly reading these "Safety precautions", properly perform the installation.

- For the installation parts, accessory parts and specified components must always be used. If the specified components are not used, the kit may fall or an air leak may occur.
- After the completion of installation, perform a test run to check that no abnormality is present.

Recommendations

- This product can be mounted to a ceiling mounted cassette-type air conditioner <Round flow>.
- According to the table to the left, check the model name of the indoor unit, then mount the kit.
- At the time of mounting, also refer to the installation manual for the indoor unit and to the one for the decoration panel.
- When mounting the duct fan, be sure to use the wiring modification adaptor [KRP1C63] to interlock with the indoor unit fan.
- For the intake wind volume, 10% or less of the indoor unit wind volume of "H" is recommended.
- When the intake wind volume becomes excessive, operation noise may become louder or the intake temperature detection of the indoor unit may be affected.
- Be sure to mount the supplied sensor assembly.
- <For the duct used for field connection, those in the table below are recommended.>

Combination table

Model name	Installable indoor unit / Panel model name	
KDDP55K160 (K)	SkyAir	FCQ(N)71-100-125-140KVEA
	VRV	FXFQ25-125PVE
	Panel	BYCP125K-W1

Parts content Check the following parts. (Shaded part is included in a different package.)

Name	① Suction chamber	② Connecting chamber (left)	③ Connecting chamber (right)	④ Corner air outlet sealing material	⑤ Corner air outlet tape for fixing the sealing material	⑥ Mounting screw (M5 x 12)	⑦ Sensor assembly	⑧ Clamp	⑨ Mounting screw (for sensor)	⑩ T joint	⑪ Flexible duct	⑫ Sealing pad	⑬ Installation manual
Shape													
Number of pieces	1	1	1	2	2	4	1	2	1	1	2	4	1

Part name	Part number	Name	⑭ Partition plate
Flexible duct (Nominal diameter φ150)	K-FDS151D (1m)	Shape	1
	K-FDS152D (2m)		
	K-FDS153D (3m)		
	K-FDS154D (4m)		

1 Selection of Installation Location and Establishment of Inspection Opening

(1) Refer to the figure below to select the installation location.

*1. Install the suspension bracket for the T joint section. Because of the load from T joint, etc., a gap may be created in between the indoor unit and suction chamber.

	Indoor unit	A (mm)
BYCP125K-W1	classes 28 to 90	306
	classes 112 to 160	348

(2) Establish an inspection opening.

*2. Establish an inspection opening (□450 or more). Establish an inspection opening to either side.

2 Mounting of Sensor Assemblies and Suction Chamber

* When the indoor unit main body is already installed, perform the following operations, complying with precautions below.

- Shut off power supply before performing operation.
- Remove the decoration panel from the indoor unit main body. (For details, refer to the installation manual attached to the decoration panel.)

<Mounting of sensor assembly>

- According to the installation manual attached to the indoor unit main body, remove the cover of the control box.
- Using the supplied screws, tighten the sensor assembly together with the bell mouth to the indoor unit main body. (Mount without pinching the float switch lead wire.)
- Remove the connector (X16A) of the existing sensor from the PC board of the indoor unit main body.
- Connect the lead wire of the mounted sensor assembly to the connector (X16A) on the PC board of the indoor unit main body as shown in the figure below.
- As shown in the figure below, fix the lead wire using the supplied clamp.
- After all the wiring is completed, fit the control box cover according to the installation manual attached to the main body.
- Making sure that the control box cover is covered with the partition plate (14), tighten these together using the screws on the cover. (Hook the partition plate tab onto the cover.)

<Mounting of suction chamber>

* Figure shows an example where the indoor unit main body is newly installed.

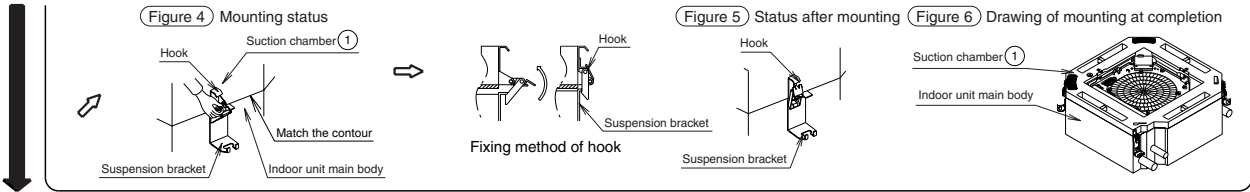
- Stick the corner air outlet tape for fixing the sealing material (5) to the corner air outlet sealing material (4), then stick it to the air outlet of the indoor unit main body. (2 positions) (Figure 1) (Figure 2)
- Mount the suction chamber (1) to the indoor unit main body using the hook (4 positions). (Figure 3) to (Figure 5) For the fixing method of the hook, refer to (Figure 4), then mount at 4 positions.

* Mount so that the contours of the indoor unit main body and suction chamber match. (Figure 4) (Figure 6)

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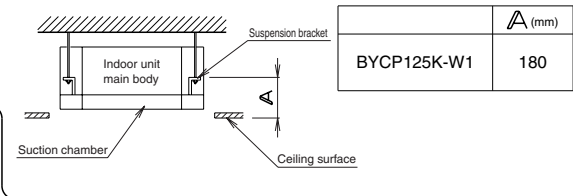
98

FXFQ-P



3 Installation of Indoor Unit Main Body and Suction Chamber

- Install the indoor unit main body and suction chamber. At the time of installation, perform the engineering work according to the installation manual attached to the indoor unit main body. (For the installation height, refer to the figure to the right.)
- When mounting the suction chamber to the existing indoor unit main body, change the installation height of the indoor unit main body to height **A** in the figure to the right.



4 Mounting of Connecting Chamber and Connection of Flexible Duct

- Mount the connecting chamber. (1 piece each for left and right, a total of 2 pieces) (Figure 7)
- (1) Press the square hole area of the connecting chamber (2) (3) into the hook section (tab) of the suction chamber (1). (2 positions)
 - (2) Using the supplied screws (6), fix the connecting chamber. (2 positions)

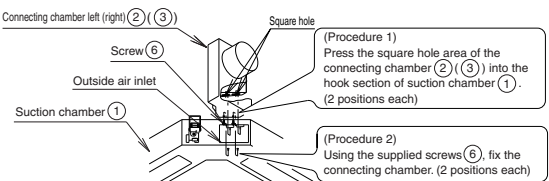
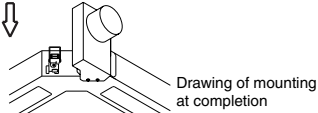


Figure 7 Mounting of connecting chamber (This figure shows the connecting chamber (left) (2).)



In case of KDDP55K160K

- (3) Connect the connecting chamber and T joint. (Figure 8)

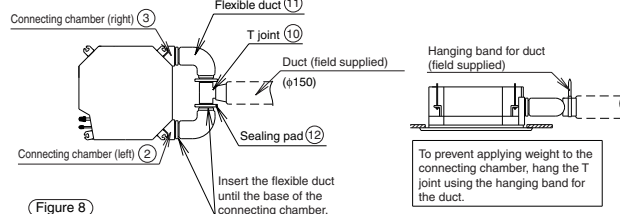


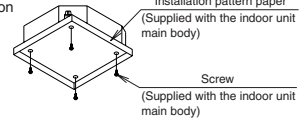
Figure 8

<How to Tight Sealing Pad>

- (1) Flexible duct
- (2) Insert the tip of the band through the gap of the split pin, then lightly tighten by hand.
- (3) Using a standard tool (driver, pliers, etc.), turn the split pin to the direction shown in the figure to tighten the band.
- (4) This completes the mounting.

Precautions
Because the split pin has a structure to prevent counter rotation, be careful with the turning direction. (When a counter rotation is forced, the ratchet will be damaged, and the tightening force will be weakened.)

- (4) Mount the supplied installation pattern paper to the indoor unit by using screws to cure the indoor unit. (Refer to the installation manual of the indoor unit main body.) (Mounting of installation pattern paper)



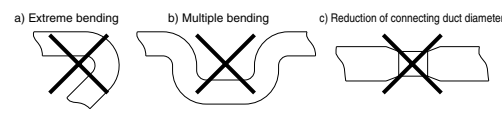
- Complete all the refrigerant and drain piping works for the indoor unit main body.

5 Duct Connection <<Duct: Nominal diameter φ150>>

- (1) Connect the duct to the duct connection area.
- (2) Wrap the connection area with vinyl tape, etc., (arrangement at site) to prevent an air leak.

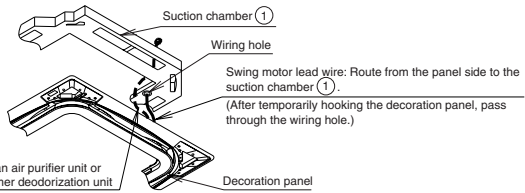
Precautions

- For the duct, be sure to apply the insulation treatment to prevent condensation.
- Do not perform duct manipulations described in the figure to the right.
- Beware that, in accordance with the local law, there may be cases where the use of a nonflammable duct is compulsory.
- When a duct goes through fire protection areas including a fire proof structure, beware that, in accordance with the local law, it may be required to establish a damper or to build a structure that is not detrimental to fire protection.
- When penetrating a wooden construction wall with a metal duct, apply electrical insulation to the duct and wall.
- Mount the outside duct so that it has a downslope toward the outside, and prevent rainwater from leaking in with a hood, etc. (Gradient of 1/100 to 1/50)
- To prevent the intrusion of small animals, such as birds, and bugs, be sure to attach a netting to sections open to outside air.
- To protect the heat exchanger of the indoor unit, be sure to attach an air filter to sections open to outside air.



6 Mounting of Decoration Panel

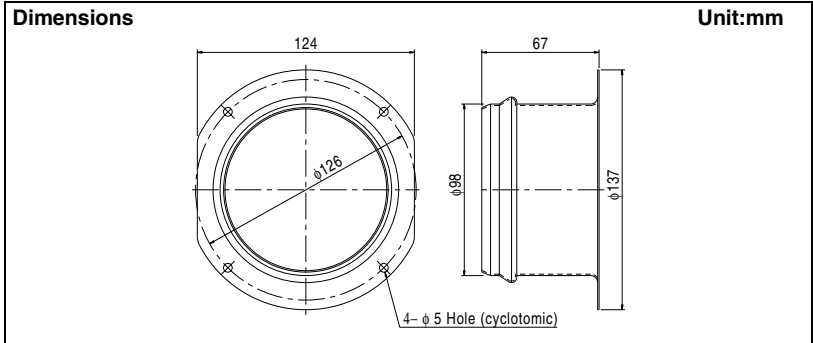
- After temporarily hooking the decoration panel, pass the swing motor lead wire, which is coming out from the decoration panel, through the wiring hole of the suction chamber. However, when used in combination with the air purifier unit or streamer deodorization unit, perform wiring without routing through the wiring hole.
- Mount the decoration panel according to the installation manual attached to the decoration panel.



With wireless unit

- For details on connection method, refer to the installation manual attached to the wireless remote control kit (sold separately).

KDDP55X160 — Fresh Air Intake Kit (Direct installation type)









Item	Model	KDDP55X160
Material		Hot-dip zinc-coated carbon steel sheet
Diameter of connection duct		φ100
Accessories		Mounting screws : 4 Insulating material : 1 unit Installation manual

- Precautions**
- This kit can be mounted to a ceiling mounted cassette-type air conditioner.
 - When using this kit, a duct (nominal diameter: $\phi 100$) is required separately.

- Beware that, in accordance with the local law, there may be cases where the use of a nonflammable duct is compulsory.
- When a duct goes through fire protection areas including a fire proof structure, beware that, in accordance with the local law, it may be required to establish a damper or to build a structure that is not detrimental to fire protection.
- When penetrating a wooden construction wall with a metal duct, apply electrical insulation to the duct and wall.
- Mount the outside duct so that it has a downslope toward the outside, and prevent rainwater from leaking in. (Gradient of 1/100 to 1/50)
- To prevent the intrusion of small animals, such as birds, and bugs, be sure to attach a netting to sections open to outside air.

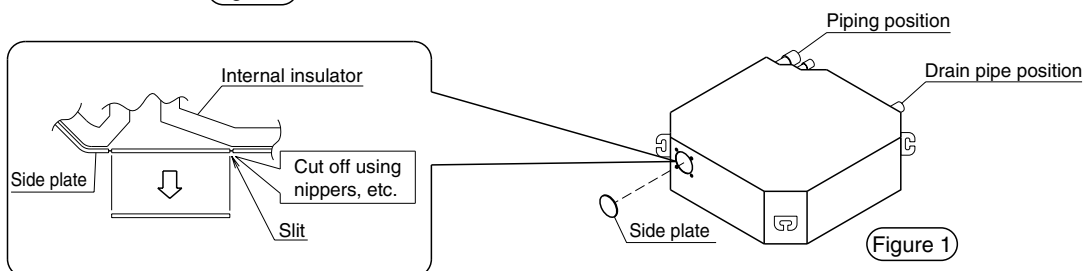
Parts content Check the following parts.

Name	① Duct flange	② Mounting screws	③ Duct flange insulator	④ Main body opening insulator	⑤ Sealing pad retainer	⑥ Installation manual
Number of pieces	1	4	1	1	1	1
Shape		 M4x12				

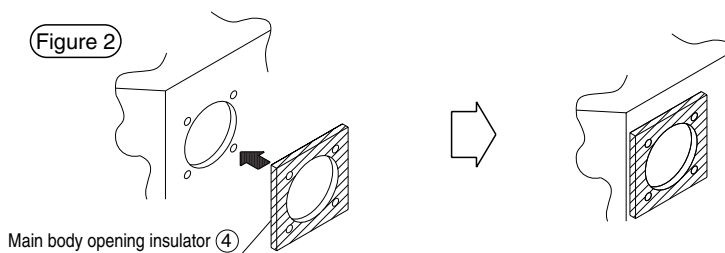
Tools needed for mounting Phillips-type screwdriver, nippers, and cutter, etc.

1 Mounting of Duct Flange

1) Cut off the side plate of the indoor unit main body along the dowel hole without damaging the internal insulator. (Figure 1)

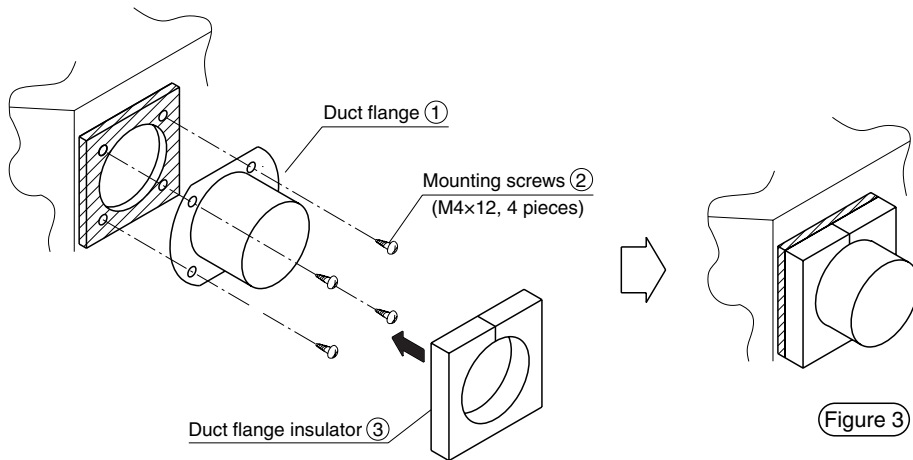


2) Stick the main body's opening insulator ④ to the opening. (Figure 2)

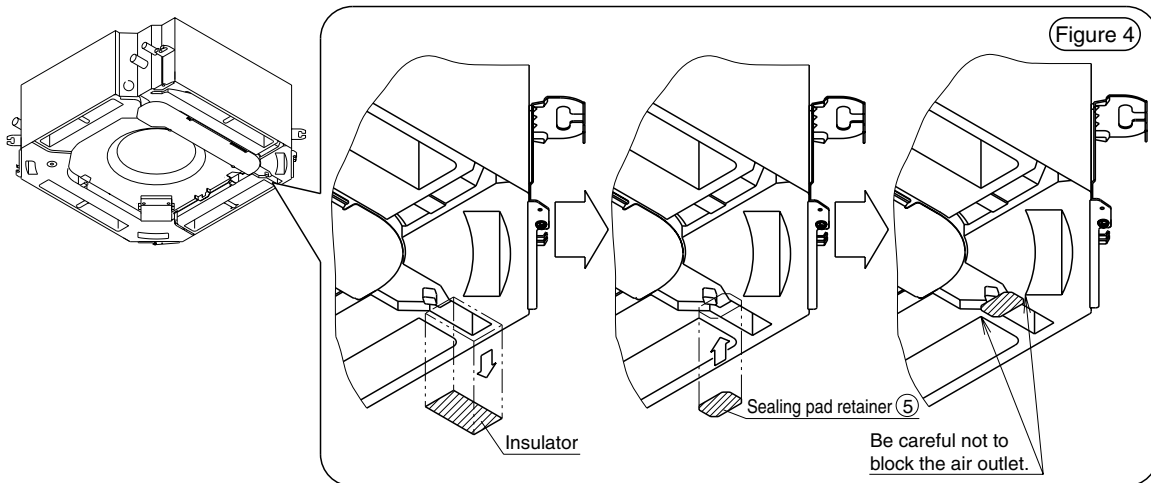


JC : 2P137676B

3) After mounting the duct flange ① to the opening using the mounting screws ② (M4x12, 4 pieces), stick the duct flange insulator ③. (Figure 3)

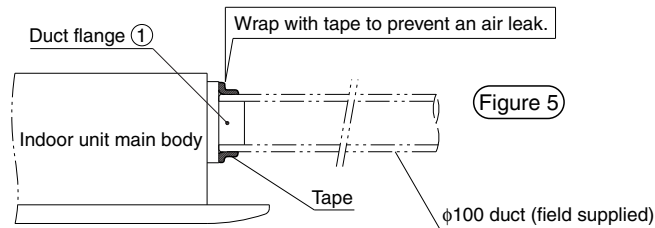


4) Before mounting the decoration panel, remove the insulator, and stick the sealing pad retainer ⑤ to the indoor unit drain pan. (Figure 4)



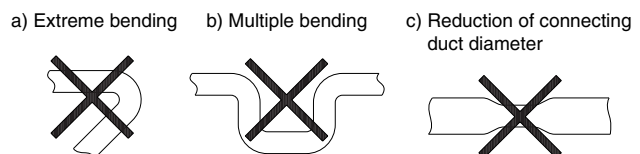
2 Duct Connection <<Duct: Nominal diameter $\phi 100$ >>

1) Connect the duct to the outside of the duct flange. (Figure 5)
 2) After the connection, wrap the connection area with tape (field supplied) to prevent an air leak.



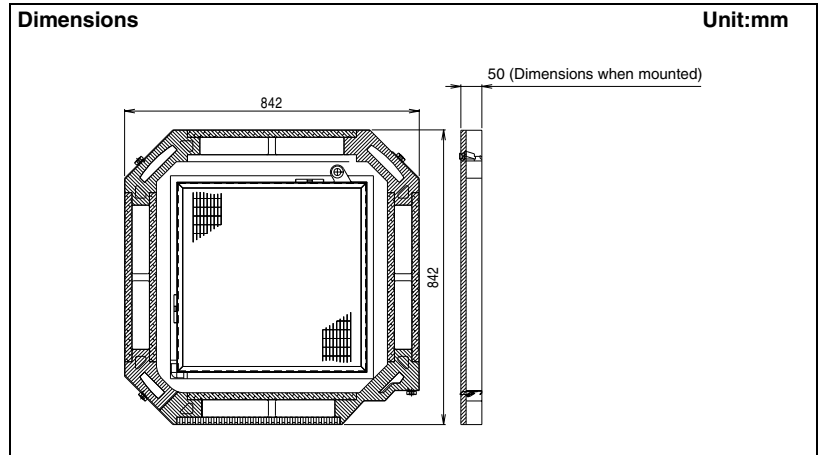
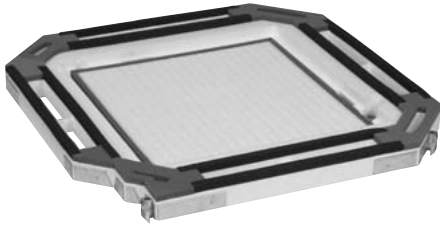
Precautions

- Perform insulation for all ducts.
- Do not perform duct manipulations shown to the right.



J : 2P137676B

KAFP556H80-160, KAFP557H80-160 — High Efficiency Filter (including chamber)



Caution

- Field setting by remote controller is necessary when the high efficiency filter is installed.

Item		Model			
		KAFP556H80	KAFP556H160	KAFP557H80	KAFP557H160
Average efficiency (%)		65 (colorimetric method)		90 (colorimetric method)	
Number of sheets included		1	1	1	1
Air flow rate	l/sec	317	583	317	583
	m ³ /min	19	35	19	35
Initial pressure loss (Pa)		34 or less			
Final pressure loss (Pa)		98 or less			
Filter element		Non-woven fabric of synthetic fiber			
Life (h)		2,500 (dust concentration 0.15 mg/m ³)		1,800 (dust concentration 0.15 mg/m ³)	
Mass (kg)		3.6	4.2	3.6	4.2
Replacement filter (optional Accessories)		KAFP552H80	KAFP552H160	KAFP553H80	KAFP553H160

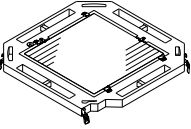

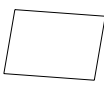
Caution After thoroughly reading these "Safety precautions", properly perform the installation.

- For the installation parts, accessory parts and specified components must always be used.
- If the specified components are not used, the kit may fall or an air leak may occur.
- After the completion of installation, perform a test run to check that no abnormality is present.

Recommendations

- This product can be mounted to a ceiling mounted cassette-type air conditioner <round flow >.
- According to the table below, check the model name of the indoor unit main body, then mount the product.
- At the time of mounting, also refer to the installation manual of the indoor unit and to the installation manual of the decoration panel.

Parts content Check the following parts.

Name	High efficiency filter unit	Sealing pad	Installation manual
Shape			
Number of pieces	1	2	1 (This document)

Combination table

Model name	Installable indoor unit model name / Panel model name	
KAFP556H80 KAFP557H80	SkyAir	FCQ(N)71KVEA
	VRV	FXFQ25-32-40-50-63-80PVE
KAFP556H160 KAFP557H160	SkyAir	FCQ(N)100-125-140KVEA
	VRV	FXFQ100-125PVE
Panel	BYCP125K-W1	

1 Mounting of High Efficiency Filter Unit

* When the indoor unit main body is already installed, perform the following operations, complying with precautions below.

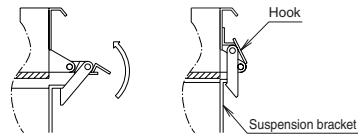
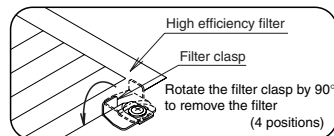
Shut off power supply before performing the operation.
Remove the decoration panel from the indoor unit's main body.
(For details, refer to the installation manual attached to the decoration panel.)

* When the indoor unit main body is newly installed

- Remove the high efficiency filter from the chamber. (Figure 1)
- Mount the high efficiency filter unit to the indoor unit main body using the hooks (4 positions). (Figure 2) to (Figure 4)
For the fixing method of the hooks, refer to the figure to the right. Mount at 4 positions.

* Mount so that the contours of the indoor unit main body and chamber match. (Figure 3) (Figure 5)

Figure 1



Fixing method of hooks

Figure 2

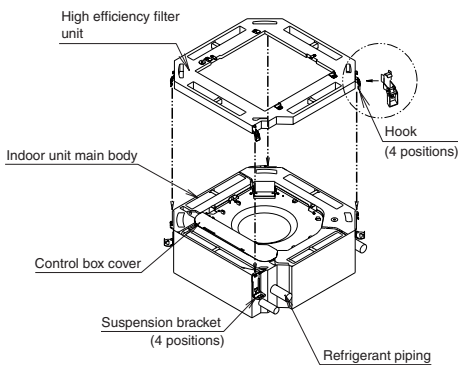


Figure 3 Mounting status

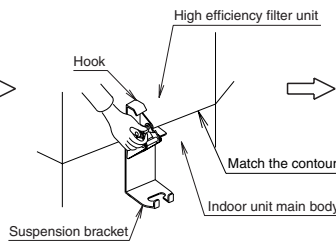


Figure 4 Status after mounting

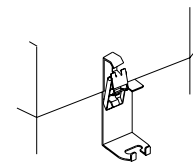
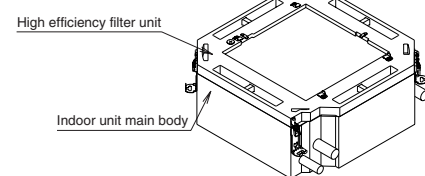


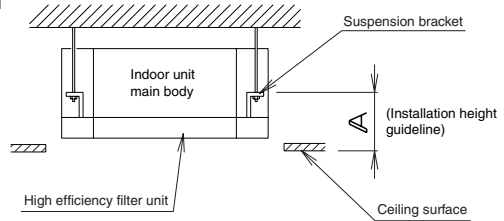
Figure 5 Drawing of mounting at completion



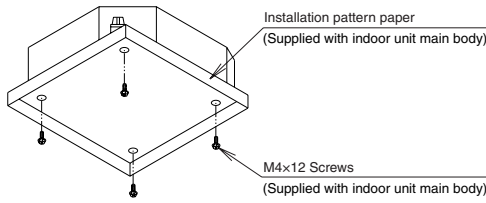
JC : 3K015220E

2 Installation of Indoor Unit Main Body and High Efficiency Filter Unit

- Install the indoor unit main body and high efficiency filter unit.
At the time of installation, perform engineering work according to the installation manual attached to the air conditioner's main body. (For the installation height, refer to the figure to the right.)
- When mounting the high efficiency filter unit to the existing indoor unit main body, change the installation height of the indoor unit main body to height Δ in the figure to the right.
- Mount the supplied installation pattern paper to the indoor unit using screws to cure the indoor unit.
(Refer to the installation manual for the indoor unit main body.)
(Refer to the figure below.)



	Δ (mm)
BYCP125K-W1	180

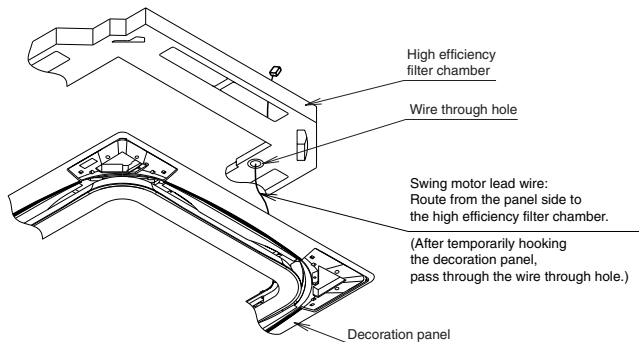


[Mounting of installation pattern paper]

- Complete all the refrigerant and drain piping work for the indoor unit main body.

3 Mounting of Decoration Panel and Mounting of High Efficiency Filter

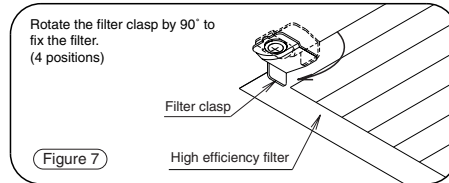
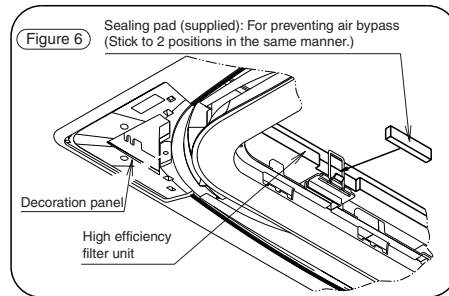
- After temporarily hooking the decoration panel, pass the swing motor lead wire, which is coming out from the decoration panel, through the wire through hole of the high efficiency filter unit.
- Mount the decoration panel according to the installation manual attached to the decoration panel.



- Mounting of high efficiency filter
After the completion of wiring and sticking of sealing pad (2 positions), mount the high efficiency filter. (Figure 6) (Figure 7)

With wireless unit

- Route the connector of the receiver lead wire through the wire through hole, then connect the connector on the indoor PC board ass'y.
- For details on the connection method, refer to the installation manual attached to the wireless remote control kit (sold separately).



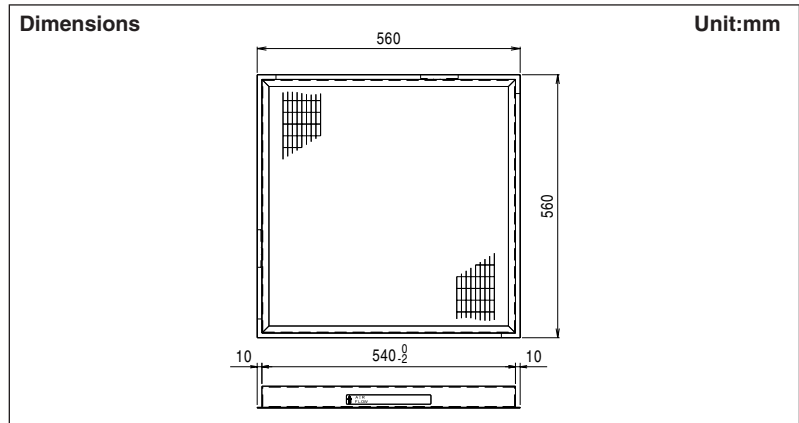
4 Preparation of Indoor Unit

- With the mounting of a high efficiency filter unit, setting the indoor unit main body is required.
Using the field setting mode on the remote control, switch to the setting position number as shown in the table to the right.
For the field setting mode, refer to "How to perform field setting" attached to the remote control.

Mode number	Setting switch number	Setting position number	Remarks
13 or 23	0	02	80 only
	1	02	Both 80 and 160

JC : 3K015220E

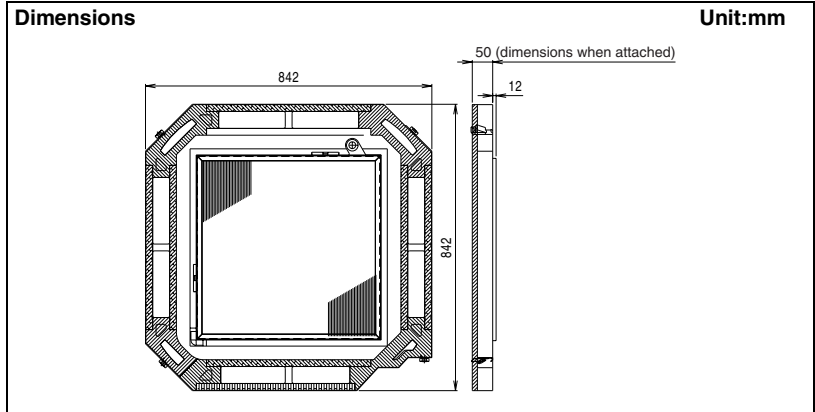
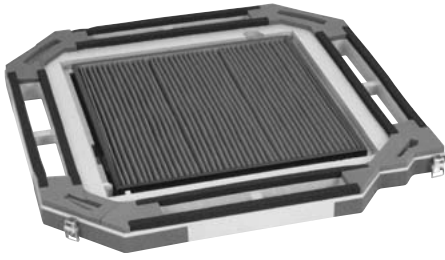
KAFP552H80-160, KAFP553H80-160 — Replacement High Efficiency Filter



- Cannot be water-washed for reuse.
- The Filter Chamber (KDDFP55H160) is required when the high efficiency filter will be installed.

Item	Model	KAFP552H80	KAFP552H160	KAFP553H80	KAFP553H160
Average efficiency (%)		65 (colorimetric method)		90 (colorimetric method)	
Number of sheets included		1	1	1	1
Air flow rate (m ³ /min)		19	35	19	35
Initial pressure loss (Pa)		34			
Final pressure loss (Pa)		98			
Filter element		Non-woven fabric of synthetic fiber			
Life (h)		2,500 (dust concentration 0.15 mg/m ³)		1,800 (dust concentration 0.15 mg/m ³)	
Mass (kg)		0.6	1.2	0.6	1.2

KAFP55H160 — Ultra Long Life Filter Unit



Caution

- In order to mount a ultra long life filter unit, setting of the main unit of indoor unit should be made.
- Individual filter (KAFP55H160H) is available

Mounting locations	Filter cleaning period
Locations with much dust	Approximately every 5,000 hours
Locations with little dust (e.g. offices)	Approximately every 10,000 hours

Item	Model	KAFP55H160
Average efficiency (%)		50 (Gravity method)
Number of sheets included		1
Air flow rate	l/sec	492
	m ³ /min	29.5
Initial pressure loss (Pa)		8 or less
Final pressure loss (Pa)		49 or less
Filter element		Polypropylene honeycomb (with mould-proof)
Life (h)		5,000 (dust concentration 0.3 mg/m ³)
Mass (kg)		4.7

Caution After thoroughly reading these "Safety precautions", properly perform the installation.

- For the installation parts, accessory parts and specified components must always be used.
- If the specified components are not used, the kit may fall or an air leak may occur.
- After the completion of installation, perform a test run to check that no abnormality is present.

Recommendations

- This product can be mounted to a ceiling mounted cassette-type air conditioner <Round flow>.
- According to the table below, check the model name of the indoor unit main body, then mount the product.
- At the time of mounting, also refer to the installation manual for the indoor unit and to the one for the decoration panel.

Recommendations

The ultra-long life filter can be reused after cleaning. After the engineering works are completed, provide instructions to the customer about the filter cleaning interval and how to remove the filter.

Parts content Check the following parts.

Name	Ultra-long life filter unit	Sealing pad	Installation manual
Shape			
Number of pieces	1	2	1 (This document)

Combination table

Model name	Installable indoor unit model name / Panel model name	
KAFP55H160	SkyAir	FCQ(N)71-100-125-140KVEA
	VRV	FXFQ25-32-40-50-63-80-100-125PVE
Panel	BYCP125K-W1	

1 Mounting of Ultra-Long Life Filter Unit

* When the indoor unit main body is already installed, perform the following operations, complying with precautions below.

Shut off power supply before performing the operation.
Remove the decoration panel from the indoor unit main body.
(For details, refer to the installation manual attached to the decoration panel.)

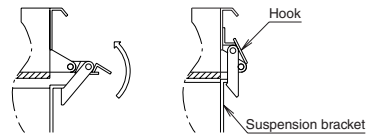
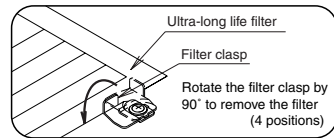
* When the indoor unit main body is newly installed

- (1) Remove the ultra-long life filter from the chamber. (Figure 1)
- (2) Mount the ultra-long life filter unit to the indoor unit main body using the hooks (4 positions). (Figure 2) to (Figure 4)

For the fixing method of the hooks, refer to the figure to the right. Mount at 4 positions.

* Mount so that the contours of the indoor unit main body and chamber match. (Figure 3) (Figure 5)

Figure 1



Fixing method of hooks

Figure 2

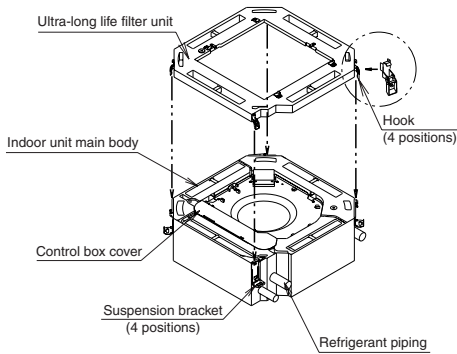


Figure 3 Mounting status

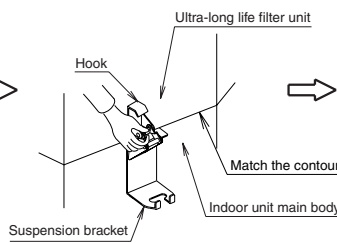


Figure 4 Status after mounting

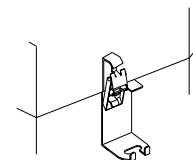
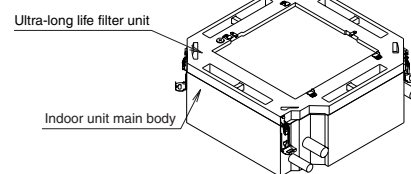


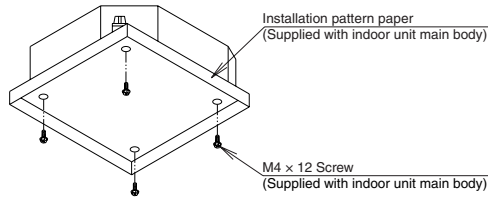
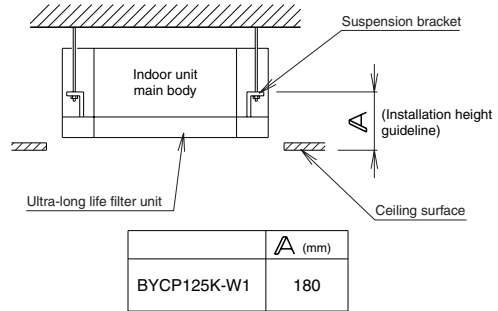
Figure 5: Drawing of mounting at completion



JC : 3K01521D

2 Installation of Indoor Unit Main Body and Ultra-Long Life Filter Unit

- Install the indoor unit main body and ultra-long life filter unit.
At the time of installation, perform engineering work according to the installation manual attached to the air conditioner's main body. (For the installation height, refer to the figure to the right.)
- When mounting the ultra-long life filter unit to the existing indoor unit main body, change the installation height of the indoor unit main body to height Δ in the figure to the right.
- Mount the supplied installation pattern paper to the indoor unit by using screws to cure the indoor unit.
(Refer to the installation manual of the indoor unit main body.)
(Refer to the figure below.)

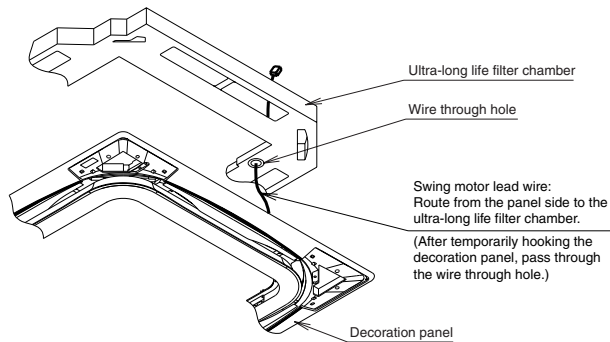


[Mounting of installation pattern paper]

- Complete all the refrigerant and drain piping work for the indoor unit main body.

3 Mounting of Decoration Panel and Mounting of Ultra-Long Life Filter

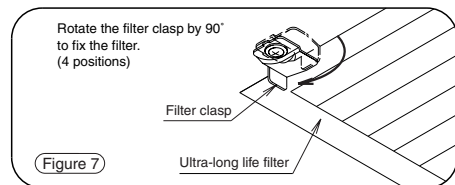
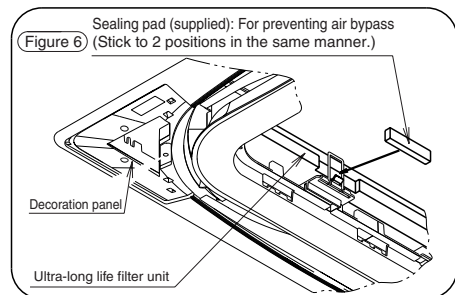
- After temporarily hooking the decoration panel, pass the swing motor lead wire, which is coming out from the decoration panel, through the wire through hole of the ultra-long life filter unit.
- Mount the decoration panel according to the installation manual attached to the decoration panel.



- Mounting of ultra-long life filter
After the completion of wiring and sticking of sealing pad (2 positions), mount the ultra-long life filter. (Figure 6) (Figure 7)

With wireless unit

- Route the connector of the receiver lead wire through the wire through hole, then connect the connector on the indoor printed circuit board assembly.
- For details on the connection method, refer to the installation manual attached to the wireless remote control kit (sold separately).



4 Preparation of Indoor Unit

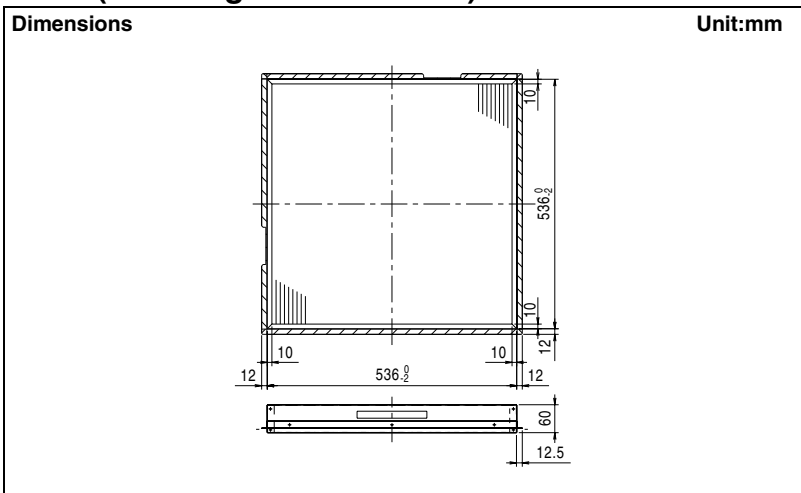
- With the mounting of a ultra-long life filter unit, setting the indoor unit main body is required.
Using the field setting mode on the remote control, switch to the setting position number shown in the table to the right.
For the field setting mode, refer to "How to perform field setting" attached to the remote control.

Mode number	Setting switch number	Setting position Number	Filter sign display interval time
10 or 20	0	Where there is minimal fouling (Example: Office, etc.)	01 Approximately every 10,000 hours
		Where there is considerable fouling (Example: Pacifino parlor, etc.)	02 Approximately every 5,000 hours
	1	02	Initial setting for ultra-long life filter

JC : 3K015221D

KAFP55H160H

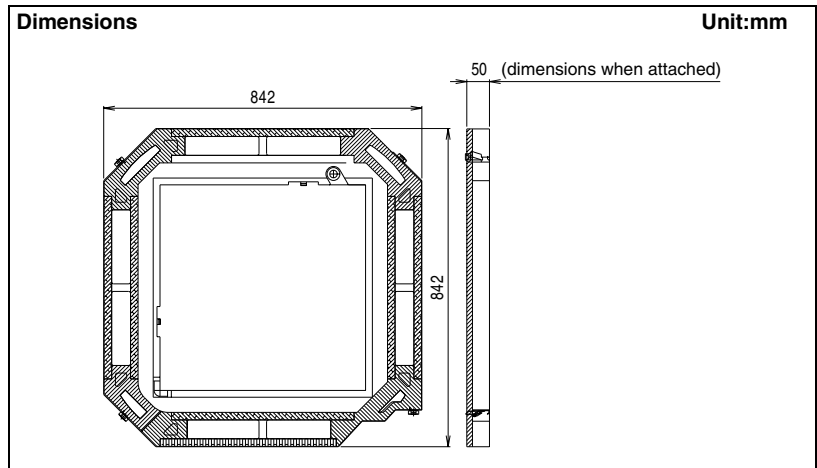
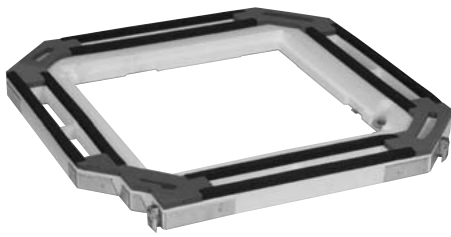
— Replacement Ultra-Long Life Filter Unit (including Filter Chamber)



- Can be water-washed. Can be reused.
- The Filter Chamber (KDDFP55H160) is required when the ultra long-life filter will be installed.

Item		Model	KAFP55H160H
Average efficiency (%)			50 (Gravity method)
Number of sheets included			1
Air flow rate	l/sec		492
	m ³ /min		29.5
Initial pressure loss (Pa)			8 or less
Final pressure loss (Pa)			49 or less
Filter element			Mould-proof resin net
Life (h)			5,000 (dust concentration 0.3 mg/m ³)
Mass (kg)			3.4

KDDFP55H160 — Filter Chamber



2

Item		Model	KDDFP55H160
Inserted filter	High-efficiency filter	65% (colorimetric method)	KAFP552H80 KAFP552H160
		90% (colorimetric method)	KAFP553H80 KAFP553H160
	Ultra long-life filter		KAFP55H160H
Mass (kg)			8.0

Caution After thoroughly reading these "Safety Precautions", properly perform the installation.

- For the installation parts, accessory parts and specified components must always be used.
- If the specified components are not used, the kit may fall or an air leak may occur.
- After the completion of installation, perform a test run to check that no abnormality is present.

Recommendations (When using ultra-long life filter)

The ultra-long life filter can be reused after cleaning. After engineering work is completed, provide instructions to the customer about the filter cleaning interval and how to remove the filter.

Parts content Check the following parts.

Name	Filter chamber	Sealing pad	Installation manual
Shape			
Number of pieces	1	2	1 (This document)

Recommendations

- This product can be mounted to ceiling mounted cassette-type air conditioner <round flow>.
- According to the table below, check the model name of the indoor unit main body, then mount the product.
- At the time of mounting, also refer to the installation manual for the indoor unit and to the one for the decoration panel.

Combination table

Model name	High efficiency filter	Ultra-long life filter	Installable indoor unit model name / Panel model name	
KDDFP55H160	KAFP552H80 or KAFP553H80	KAFP55H160H	SkyAir	FCQ(N)71KVEA
			VRV	FXFQ25-32-40-50-63-80PVE
	KAFP552H160 or KAFP553H160		SkyAir	FCQ(N)100-125-140KVEA
			VRV	FXFQ100-125PVE
Panel			BYCP125K-W1	

1 Mounting of Filter Chamber

* When the indoor unit main body is already installed, perform the following operations, complying with precautions below.

Shut off power supply before performing the operation.
Remove the decoration panel from the indoor unit main body.
(For details, refer to the installation manual attached to the decoration panel.)

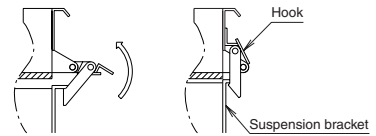
* When the indoor unit main body is newly installed

(1) Mount the filter chamber to the indoor unit main body using the hooks (4 positions).

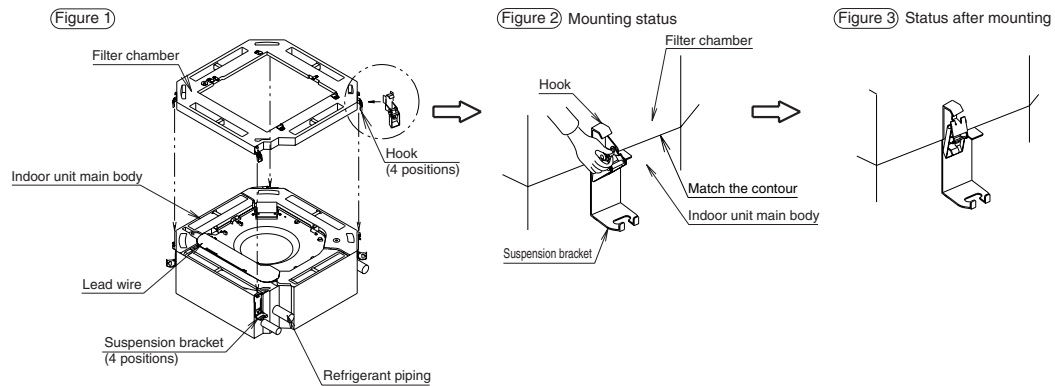
(Figure 1) to (Figure 3)

For the fixing method of the hooks, refer to the figure to the right. Mount at 4 positions.

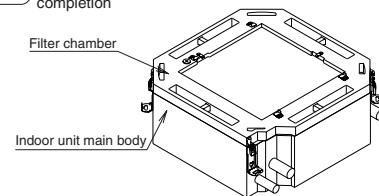
* Mount so that the contours of the indoor unit main body and chamber are match. (Figure 2) (Figure 4)



Fixing method of hooks



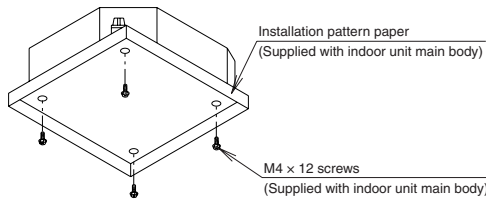
(Figure 4) Drawing of mounting at completion



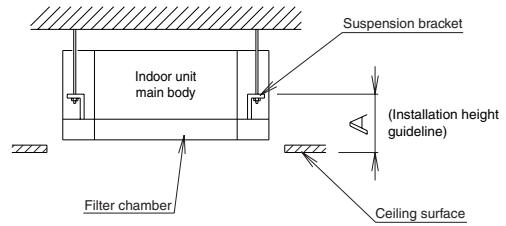
JC : 3K015219E

2 Installation of Indoor Unit Main Body and Filter Chamber

- Install the indoor unit main body and filter chamber.
At the time of installation, perform engineering work according to the installation manual attached to the air conditioner's main body. (For the installation height, refer to the figure to the right.)
- When mounting the filter chamber to the existing indoor unit main body, change the installation height of the indoor unit main body to height Δ in the figure to the right.
- Mount the supplied installation pattern paper to the indoor unit using screws to cure the indoor unit.
(Refer to the installation manual of the indoor unit main body.)
(Refer to the figure below.)



[Mounting of installation pattern paper]

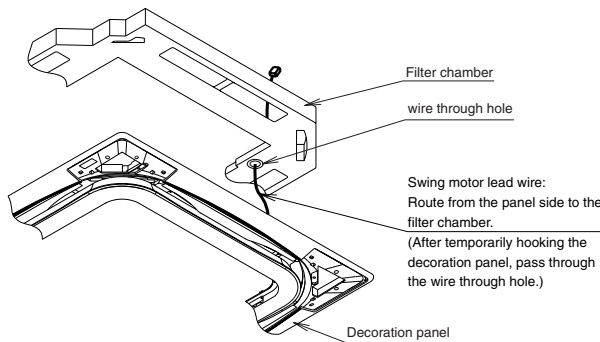


	Δ (mm)
BYCP125K-W1	180

- Complete all the refrigerant and drain piping work for the indoor unit main body.

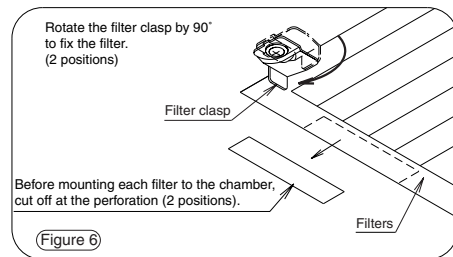
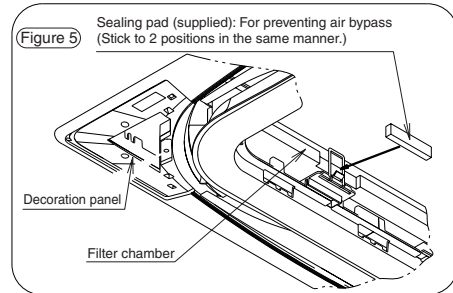
3 Mounting of Decoration Panel and Mounting of Filter Chamber

- After temporarily hooking the decoration panel, pass the swing motor lead wire, which is coming out from the decoration panel, through the wire through hole of the filter chamber.
- Mount the decoration panel according to the installation manual attached to the decoration panel.



- Mounting of filter
After the completion of wiring and sticking of sealing pad (2 positions), mount the filter.
Figure 5 **Figure 6**

With wireless unit



- Route the connector of the receiver lead wire through the wire through hole, then connect the connector on the indoor PC board assembly.
- For details on the connection method, refer to the installation manual attached to the wireless remote control kit (sold separately).

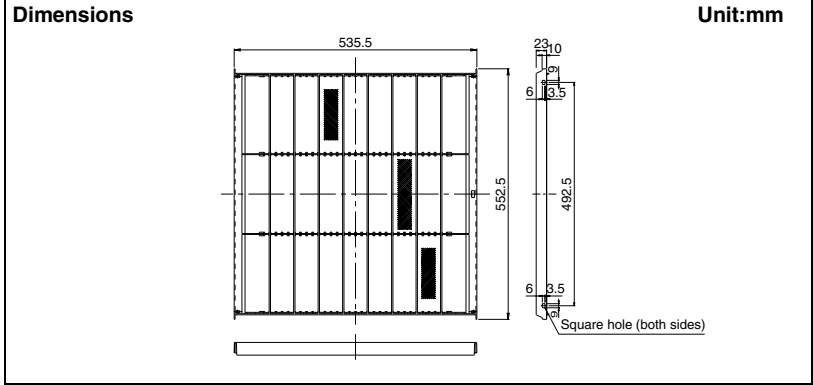
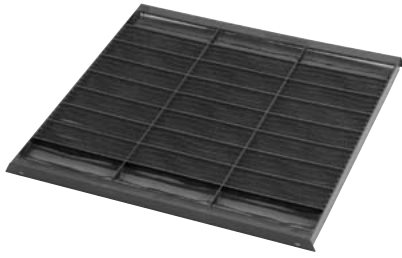
4 Preparation of Indoor Unit

- Depending on the types of mounting filters, setting the indoor unit main body is may be required. Using the field setting mode on the remote control, switch to the setting position number shown in the table to the right. For the field setting mode, refer to "How to perform field setting" attached to the remote control.

Filter name	Mode number	Setting switch number	Setting position number	Filter sign display interval time	
High performance filter	80 only Both 80 and 160	13 or 23	0	02	
			1	02	
Ultra-long life filter	10 or 20	0	Where there is minimal fouling (Example: Office, etc.)	01	Approximately every 10,000 hours
			Where there is considerable fouling (Example: Pachinko parlor, etc.)	02	Approximately every 5,000 hours
			1	02	Initial setting for ultra-long life filter

JC : 3K015219E

KAFP551K160 — Replacement Long Life Filter



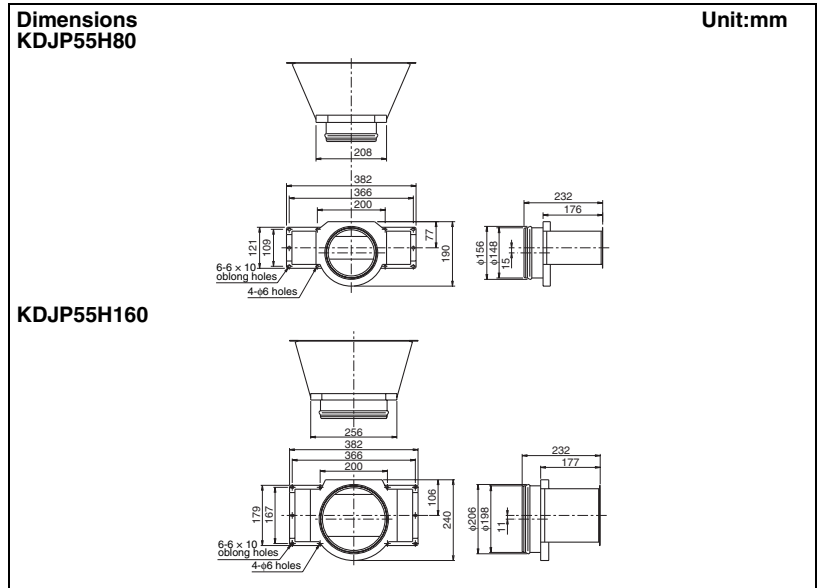
· Can be water-washed. Can be reused.

Model		KAFP551K160
Item		
Average efficiency (%)		60 (Gravity method)
Number of sheets included		1
Air flow rate	l/sec	300
	m ³ /min	18
Initial pressure loss (Pa)		4.9 or less
Final pressure loss (Pa)		49 or less
Filter element		Mould-proof and antibacterial resin net
Life (h)		5,000 (dust concentration 0.15 mg/m ³)
Mass (kg)		0.2

KDJP55H80-160 — Branch Duct Chamber



2



Item	Model	KDJP55H80	KDJP55H160
Material	Hot-dip zinc-coated carbon steel sheet (with insulation)		

Caution

1. When mounting, refer to the installation manuals for the indoor unit and the decoration panel.

Precautions

- This product can be mounted to a ceiling mounted cassette-type air conditioner <round flow>.
- According to the table to the right, check the model name of the indoor unit, then mount the product.
- At the time of mounting, also refer to the installation manual for the indoor unit main body and to the one for the decoration panel.
- For the duct (field supplied) to be connected, those specified in the table to the right are recommended.

Parts content

Check the following parts.					
Name	Branch duct chamber	Mounting screw	Installation manual	Sealing material	Tape for fixing the sealing material
Shape/ Number					
Number of pieces	80 160	1 10	1	2	2
Name	Main body insulator			Main body opening sealant	
Shape/ Number					
Number of pieces	80 160	1 1	2	2	2 1

Combination table

Model name	Installable indoor unit model name	
KDJP55H80	SkyAir	FCQ(N)71KVEA
	VRV	FXFQ25-80PVE
KDJP55H160	SkyAir	FCQ(N)100-125-140KVEA
	VRV	FXFQ100-125PVE

Recommended duct

Branch duct chamber	Connecting duct kit name
KDJP55H80	K-FDK151B (1 m) or K-FDK152B (2 m) (Flexible duct: Nominal diameter of φ150)
KDJP55H160	K-FDK201B (1 m) or K-FDK202B (2 m) (Flexible duct: Nominal diameter of φ200)

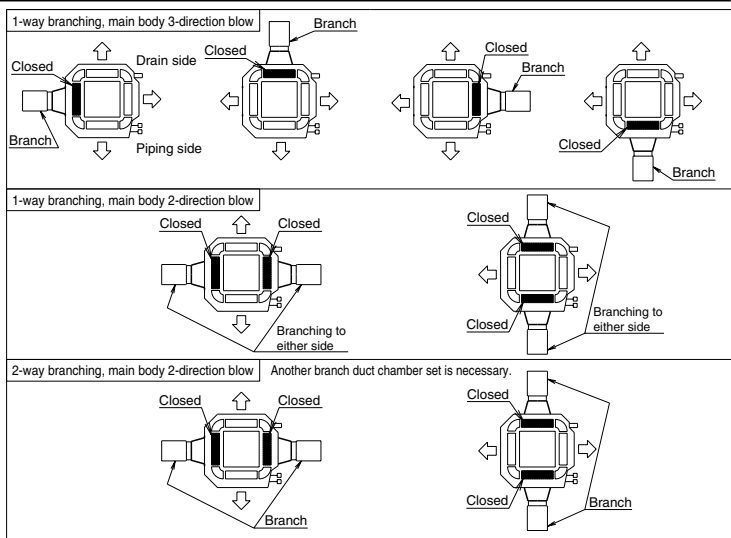
1 Preparation Before Installation

With this branch duct, an independent 4-way and simultaneous 2-branch drawing are also possible.

- With this branch duct chamber, the blow directions shown in the figure to the right can be selected.
- Select the blow direction that is most appropriate for the room shape and installation position. (Blow directions other than those in the figure to the right cannot be selected.)
- From the external static pressure/air volume characteristics (refer to the technical guide), select the duct length and air outlet.

Precautions

- Be sure to securely block the air outlet of the indoor unit main body to which the branch duct chamber is mounted. If the blocking is incomplete, water spraying or condensation may occur. (Refer to **4 Mounting of Sealing Material to Indoor Unit**.)
- When mounting the branch duct chamber, be sure to perform field setting of the indoor unit main body. (Refer to **5 Field Setting**.)



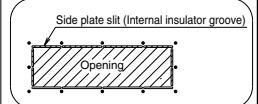
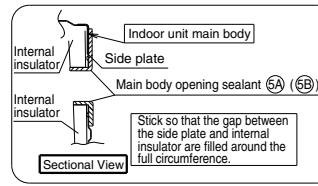
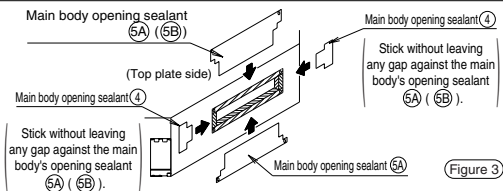
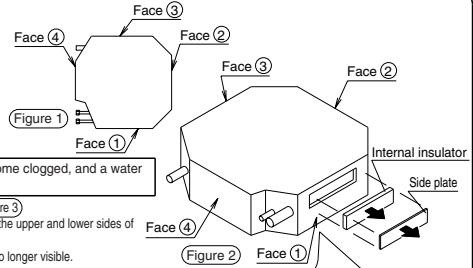
2 Mounting of Branch Duct Chamber

When an installation is performed after mounting the branch duct chamber to the indoor unit main body (at new installation), do not apply force to the branch duct chamber. (Deformation may occur.)

- (1) Select the position where the branch duct chamber is mounted.
- (2) Mount the branch duct chamber to the indoor unit according to the following procedure. (Figure 2 is an example of the face ① side.)
 - 1) Along the slit, cut the side plate of the indoor unit to which the branch duct chamber is mounted. Then, cut the internal insulator along the groove. (Use nippers, etc., to cut the slit section, and cutter, etc., to cut the groove section.) (Figure 2)

⚠ For the port opening operation, do not use a tool that produces chips, such as a saw. The drain system may become clogged, and a water leak may occur.

- 2) Use the sealant for sticking so that the gaps between the side plate and internal insulator are filled around the full circumference. (Figure 3)
 - First, stick the main body's opening sealant ① to left and right of the opening, and the main body's opening sealant ⑤A (⑤B) to the upper and lower sides of the opening.
 - At this time, fold the main body opening sealant towards the inside so that the gap between the side plate and internal insulator is no longer visible.



JC : 1P137894D

3) Mount the branch duct chamber. (Figure 4)

Indoor unit
Mount so that the flat face becomes the top plate side of the indoor unit.
Branch duct chamber
Mounting screw, 10 pieces (M4x16)
Figure 4

(3) Stick the main body insulator to the indoor unit. (The figure is an example of the face ① side) (Figure 5)

Stick with the left sides of the main body insulators ①, ②, and ③ aligned.
Be sure to stick the main body insulator from the top of the branch duct chamber flange (sheet metal section). Otherwise, condensation may occur.

Main body insulator ①
Stick with the end folded.
Main body insulator ②
Stick with the end folded. Create a slit to the wiring hole using a cutter, etc..
Main body insulator ③
Stick with the end folded.
Main body insulator ③
Figure 5

3 Duct Connection <<Duct: KDJP55H90 ... Nominal diameter of $\phi 150$
KDJP55H160 ... Nominal diameter of $\phi 200$ >>

1) Connect the duct to the outside of the branch duct chamber. (Figure 6)

- After the connection, wrap the connection area with tape (field supplied) to prevent an air leak.

Apply insulation for all the ducts.

2) Do not perform duct manipulation described below.

a) Extreme bending
b) Multiple bending
c) Reduction of connecting duct diameter

Branch duct chamber
Tape
Wrap with tape to prevent an air leak.
Indoor unit main body
Duct of $\phi 150$ or $\phi 200$ (field supplied)
Figure 6

1. Beware that, in accordance with the local law, there may be cases where the use of a nonflammable duct is compulsory.
2. When a duct goes through fire protection areas, including a fire proof structure, beware that, in accordance with the local law, it may be required to establish a damper or to build a structure that is not detrimental to fire protection.
3. When penetrating a wooden construction wall with a metal duct, apply electrical insulation to the duct and wall.

4 Mounting of Sealing Material to Indoor Unit <<With the sealing material supplied in this kit, blocking of two openings can be performed.>>

For the block position, refer to 1 Preparation Before Installation, then determine the position. Always block the branch duct mounting surface.

3-way blow
2-way blow

(1) Matching the longitudinal air outlets numbered from ① to ④ to be blocked, prepare the sealing material and tape for fixing the sealing material. (2) Stick the sealing material that was prepared in (1) to the air outlet of the indoor unit main body.

- Cut both the sealing material and tape for fixing the sealing material along the perforation (dotted line).
- Stick the sealing material to the tape for fixing the sealing material. (Stick so that the sealing material is at the centre of the tape for fixing the sealing material.)

Example) When blocking air outlet ② or ③

<Sealing material preparation>

Procedure 1
Cut off.

Procedure 2
Remove the release paper.

Procedure 3
Stick the sealing material so that it is at the centre of the tape for fixing the sealing material.

Precautions
The sealing material has a directional property. Be sure to stick the sealing material to the tape for fixing the sealing material so that the printed number of the outlet to be blocked becomes visible.

<Mounting to air outlet>

Indoor unit main body
Air outlet ①

• When blocking the air outlet ①, sealing material preparation is not necessary.

5 Mounting of Decoration Panel For safety, be sure to shut off power supply before starting the decoration panel mounting operation and connecting the connectors for swinging.

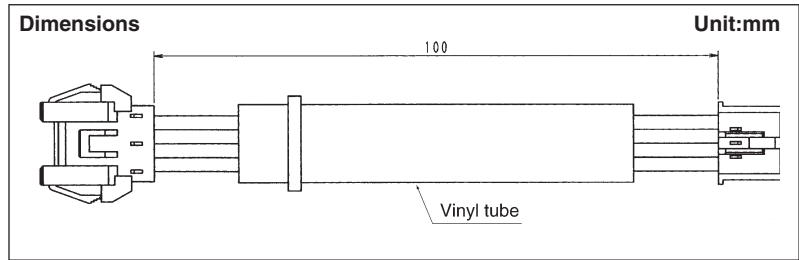
Refer to the installation manual attached to the decoration panel.
After mounting the decoration panel, check that no gap is present between the decoration panel and the unit's main body.

6 Field Setting

When mounting the branch duct chamber, setting the indoor unit main body is required. After all the engineering work is completed, perform setting together with field setting of the indoor unit.
Using the field setting mode on the remote control, switch to the setting position number shown in the table to the right. For the field setting mode, refer to "How to perform field setting" attached to the remote control.

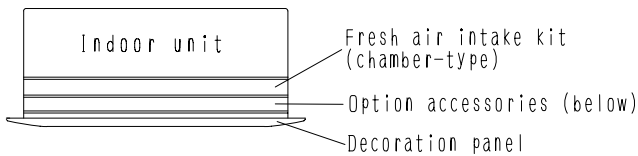
Branch blow pattern	Mode number	Setting switch number	Setting position number
1-way branching, 3-direction blow	13 or 23	1	02
1-way branching and 2-way blow or 2-way branching and 2-way blow			03

KKSJ55K160 — Chamber Connection Kit



Combining with option accessories (chamber-type)

- This chamber connection kit is for use with the multi-flow set. Refer to the catalog, etc, for details on the separately sold items (chamber-type) to be connected.
- Refer to the table at right for combinations of this kit and other option accessories(chamber-type). Also, be sure to install the fresh air intake (chamber-type) kit above.



Contents of parts

Check the following parts

Name	Relay harness	Clamping material
Shape	①	②
Quantity	1 PC.	2 PCS.

		Above
		Fresh air intake kit
below	Option accessories (chamber-type)	
	Air purification unit	○
	High Efficiency filter unit	○
	Ultra-long life filter unit	○
Fresh air intake kit		△

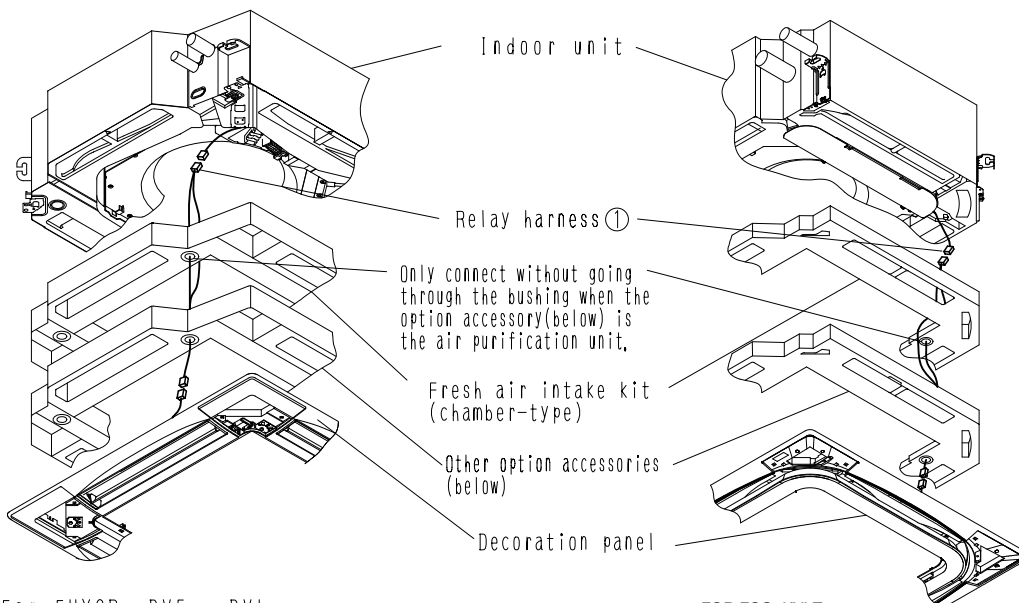
Combinations not listed in this table should not be attempted as they will cause malfunctions.

Installation of the Chamber connection kit.

Refer to the installation (attachment) manuals included with the indoor unit, the option accessories (chamber-type), and Decoration panel for details on installation (attachment).

Caution

Extend the Decoration panel's swing motor lead wire using the included relay harness ① and connect it to the indoor unit. When doing this, use the included clamping material ② to tie the lead wire so it does not droop.



For FHYCP~DVE, ~DVL
FXF~LVE, FXFQ~MVE, ~LVEC

FOR FCQ-KVLT
FCQ(N)-KVEA
FXFQ-PVE(D)

KDTP55K80 · 160 — Installation Kit for High Humidity

Dimensions **Unit:mm**

Model	AA	AB
KDTP55K80	245	157
KDTP55K160	287	186

Item	Model	KDTP55K80	KDTP55K160
Material		Polyethylene foam	
Maximum temperature		40°CDB, RH85%	
Accessories		Insulation for hanger bracket, Installation manual	

Precautions

- This kit can be mounted to an ceiling mounted cassette-type air conditioner <round flow>.
- According to the chart below, check the model name of indoor unit, then mount the kit.
- This kit cannot be used for the mounting of humidifier and branch duct.

Combination table

Model name	Installable indoor unit model name	
KDTP55K80	SkyAir	FCQ(N)71KVEA
	VRV	FXFQ25-80PVE
KDTP55K160	SkyAir	FCQ(N)100-125-140KVEA
	VRV	FXFQ100-125PVE

Parts content

Name	① Side insulator plate (1)	② Side insulator plate (2)	③ Side insulator plate (3)	④ Side insulator plate (4)	⑤ Top insulator plate (1)
Shape					
Number of pieces	1	1	1	1	1

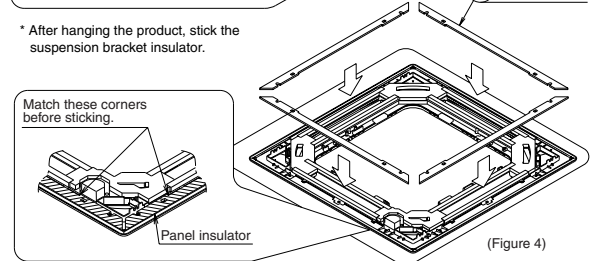
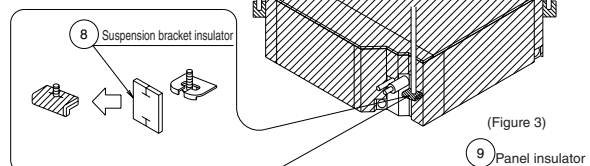
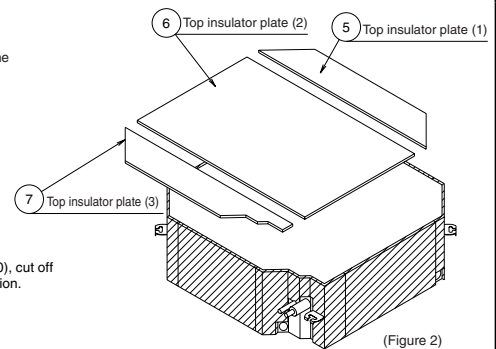
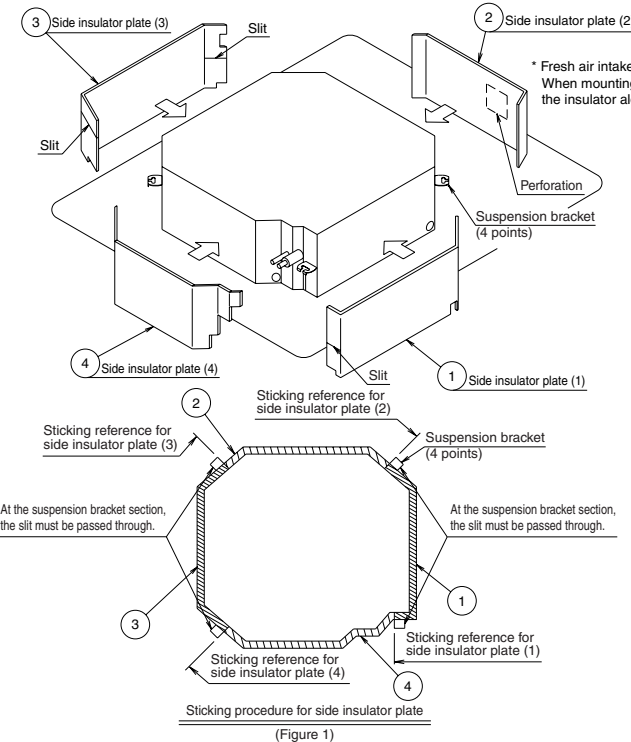
Name	⑥ Top insulator plate (2)	⑦ Top insulator plate (3)	⑧ suspension bracket insulator	⑨ Panel insulator	Others
Shape					- This manual
Number of pieces	1	1	4	4	

1 Sticking Procedure

- Perform the work on soft cloth to prevent damage to the indoor unit and panel.

<Procedure>

- (1) According to the sticking procedure for the side insulator plate, stick the side insulator plates (1 to 4) in sequential order without leaving any gap in between. (Figure 1)
(When mounting the fresh air intake kit (KDDP55X160), cut off the side insulator plate (2) with a cutter knife along the perforation. The cut-off insulator is no longer needed.)
- (2) Stick the top insulator plates (1 to 3) without leaving any gap in between. Also, stick the top insulator plates without leaving any gap against the side insulator plates all the way around. (Figure 2)
- (3) Hang the product.
- (4) Stick the suspension bracket insulator to the suspension bracket together with the washer and bolt. (Figure 3)
- (5) Lastly, stick the panel insulator to the backside of the panel. (Figure 4)



JC : 3P179341C

FXCQ-M Ceiling Mounted Cassette Type (Double-Flow)

3

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- 2. Specifications 124
- 3. Dimensions 126
- 4. Piping Diagrams 130
- 5. Wiring Diagrams 131
- 6. Electric Characteristics 133
- 7. Capacity Tables 134
 - 7.1 Cooling Capacity 134
- 8. Sound Levels 135
- 9. Installation 136
- 10. Accessories 139

1. Features

= Drastic change of performance, function and design =



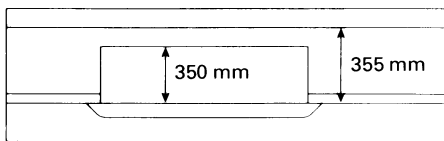
Line-up

FXCQ20MVE-FXCQ125MVE

<Features>

Compactness

- Lowest height in the industry with whisper quietness



Low operation sound

Less weight

Improvement in installation and design flexibility

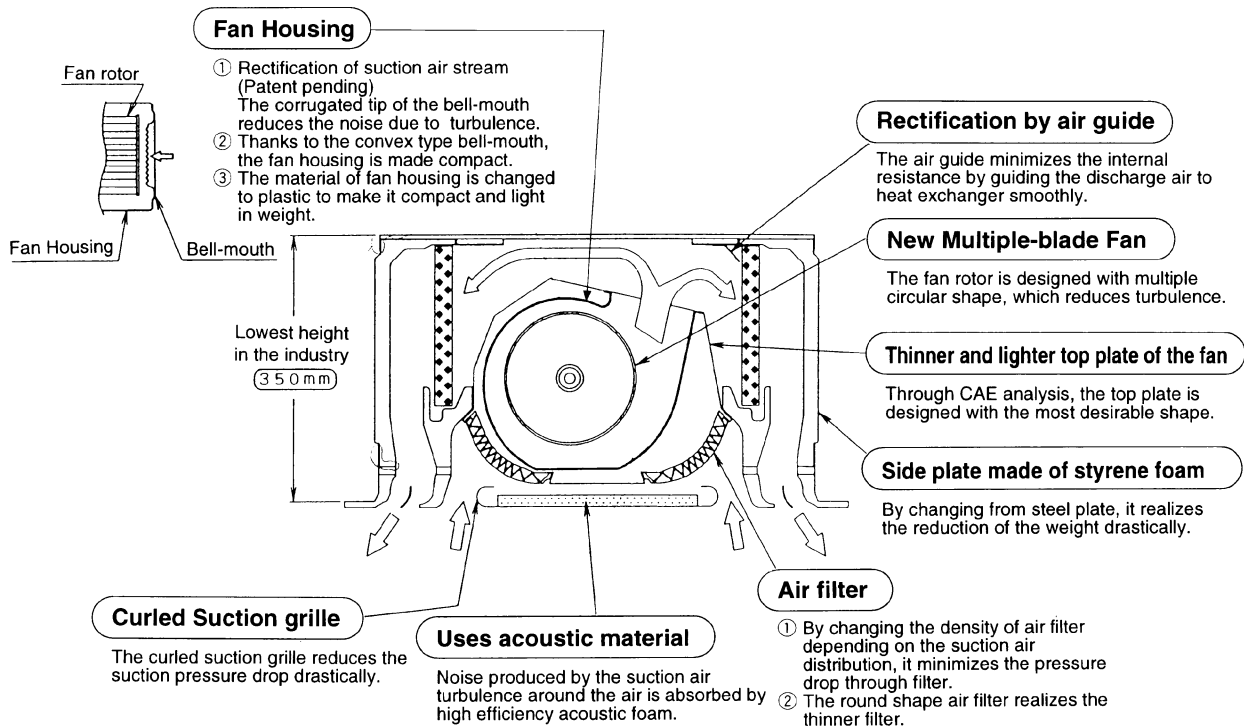
- Reduction of weight of both main unit and panel
- Standardized sectional module
- Matching the center of main unit and panel

Less maintenance

- Flat type suction grille of easy cleaning
- Detachable blade
- To minimize the soiling of the ceiling

<Details>

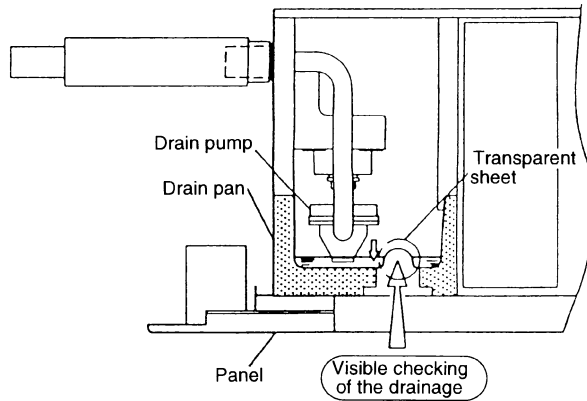
(1) Main technical improvement for compactness



(2) Improvements for facilitating the installation and maintenance

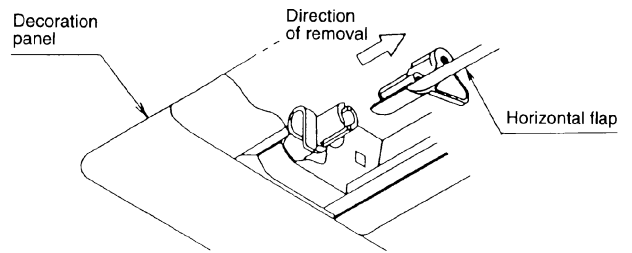
Facilitating the installation

- **Lighter in weight**
(Main unit and panel)
- **Center of the ceiling opening and the unit.**
The same position
- **Checking the drainage flow**
The cover of inspection hatch is detachable with one touch.
- **Facilitating the checking of drainage**








Facilitating the maintenance

- **Soiling of the ceiling**
About 1/5 of the conventional model
- **Cleaning of the suction grille**
Easy to clean because of flat shape
- **Cleaning of the air discharge flap (Detachability)**
The flap can be detached with one touch without removing the panel
- **Detachment of air discharge flap**



■ **2 different positions of auto-swing for more comfort.**

Position of Auto-Swing	Standard Position	Ceiling Soiling Prevention Position
Operation of Auto-Swing	 Flaps swing within the range of 0°~60°	
5 Steps of Direction	 5 steps within the range of 0°~60°	 5 steps within the range of 45°~60°
Prevention of Draft	 Prevents cold draft (heating operation)	—
Auto-set Air Direction	 The position of flaps is automatically set at the position of previous operation. (Initial position is 30° for cooling, and 60° for heating.)	

2. Specifications

Ceiling Mounted Cassette Type (Double-Flow)

Model		FXCQ20MVE	FXCQ25MVE	FXCQ32MVE	FXCQ40MVE	
*1 Cooling Capacity (19.5°CWB)	kcal/h	2,000	2,500	3,200	4,000	
	Btu/h	7,800	9,900	12,600	16,000	
	kW	2.3	2.9	3.7	4.7	
*2 Cooling Capacity (19.0°CWB)	kW	2.2	2.8	3.6	4.5	
Casing		Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	
Dimensions: (HxWxD)		mm	305x775x600	305x775x600	305x990x600	
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm	2x10x1.5	2x10x1.5	2x10x1.5	
	Face Area	m ²	2x0.100	2x0.100	2x0.145	
Fan	Model		D17K2AA1	D17K2AB1	D17K2AB1	2D17K1AA1
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output x Number of Units	W	10x1	15x1	15x1	20x1
	Air Flow Rate (H/L)	m ³ /min	7/5	9/6.5	9/6.5	12/9
		cfm	247/177	318/230	318/230	424/318
Drive		Direct 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	Microprocessor Thermostat for Cooling and Heating	
Sound Absorbing Thermal Insulation Material		Glass Wool/Urethane Foam	Glass Wool/Urethane Foam	Glass Wool/Urethane Foam	Glass Wool/Urethane Foam	
Piping Connections	Liquid Pipes	mm	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)
	Gas Pipes	mm	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Machine Weight (Mass)		kg	26	26	26	31
*4 Sound Level (H/L) (220V)		dBA	32/27	34/28	34/28	34/29
Safety Devices		Fuse. Thermal Protector for Fan Motor.	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	Electronic Expansion Valve	
Connectable Outdoor Unit		R-410A PA Series	R-410A PA Series	R-410A PA Series	R-410A PA Series	
Decoration Panels (Option)	Model		BYBC32G-W1	BYBC32G-W1	BYBC32G-W1	BYBC50G-W1
	Panel Color		White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions: (HxWxD)	mm	53x1,030x680	53x1,030x680	53x1,030x680	53x1,245x680
	Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
	Weight	kg	8	8	8	8.5
Standard Accessories		Operation Manual. Installation Manual. Paper Pattern for Installation. Washer for Hanging Brackets. Clamp Metal. Drain Hose. Insulation for Fitting. Washer Fixing Plates. Sealing Pads. Clamps. Screws. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Washer for Hanging Brackets. Clamp Metal. Drain Hose. Insulation for Fitting. Washer Fixing Plates. Sealing Pads. Clamps. Screws. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Washer for Hanging Brackets. Clamp Metal. Drain Hose. Insulation for Fitting. Washer Fixing Plates. Sealing Pads. Clamps. Screws. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Washer for Hanging Brackets. Clamp Metal. Drain Hose. Insulation for Fitting. Washer Fixing Plates. Sealing Pads. Clamps. Screws. Washers.	
Drawing No.		C : 3D039413				

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- *4 Anechoic chamber conversion value, measured at a point 1.5 m downward from the unit center. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- 5 Refer to page 133 for Fan Motor Input.

Conversion Formulae
kcal/h=kWx860
Btu/h=kWx3412
cfm=m ³ /minx35.3

Ceiling Mounted Cassette Type (Double-Flow)

Model		FXCQ50MVE	FXCQ63MVE	FXCQ80MVE	FXCQ125MVE	
*1 Cooling Capacity (19.5°CWB)	kcal/h	5,000	6,300	8,000	12,500	
	Btu/h	19,800	24,900	31,700	49,500	
	kW	5.8	7.3	9.3	14.5	
*2 Cooling Capacity (19.0°CWB)	kW	5.6	7.1	9.0	14.0	
Casing		Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	
Dimensions: (HxWxD)		mm	305x990x600	305x1,175x600	305x1,665x600	
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm	2x10x1.5	2x10x1.5	2x10x1.5	
	Face Area	m ²	2x0.145	2x0.184	2x0.287	
Fan	Model		2D17K1AA1	2D17K2AA1VE	3D17K2AA1	3D17K2AB1
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output x Number of Units	W	20x1	30x1	50x1	85x1
	Air Flow Rate (H/L)	m ³ /min	12/9	16.5/13	26/21	33/25
		cfm	424/318	582/459	918/741	1,165/883
Drive		Direct 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	Microprocessor Thermostat for Cooling and Heating	
Sound Absorbing Thermal Insulation Material		Glass Wool/Urethane Foam	Glass Wool/Urethane Foam	Glass Wool/Urethane Foam	Glass Wool/Urethane Foam	
Piping Connections	Liquid Pipes	mm	φ6.4 (Flare Connection)	φ9.5 (Flare Connection)	φ9.5 (Flare Connection)	φ9.5 (Flare Connection)
	Gas Pipes	mm	φ12.7 (Flare Connection)	φ15.9 (Flare Connection)	φ15.9 (Flare Connection)	φ15.9 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Machine Weight (Mass)		kg	32	35	47	48
*4 Sound Level (H/L) (220V)		dBA	34/29	37/32	39/34	44/38
Safety Devices		Fuse. Thermal Protector for Fan Motor.	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	Electronic Expansion Valve	
Connectable Outdoor Unit		R-410A PA Series	R-410A PA Series	R-410A PA Series	R-410A PA Series	
Decoration Panels (Option)	Model		BYBC50G-W1	BYBC63G-W1	BYBC125G-W1	BYBC125G-W1
	Panel Color		White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions: (HxWxD)	mm	53x1,245x680	53x1,430x680	53x1,920x680	53x1,920x680
	Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
	Weight	kg	8.5	9.5	12	12
Standard Accessories		Operation Manual. Installation Manual. Paper Pattern for Installation. Washer for Hanging Brackets. Clamp Metal. Drain Hose. Insulation for Fitting. Washer Fixing Plates. Sealing Pads. Clamps. Screws. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Washer for Hanging Brackets. Clamp Metal. Drain Hose. Insulation for Fitting. Washer Fixing Plates. Sealing Pads. Clamps. Screws. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Washer for Hanging Brackets. Clamp Metal. Drain Hose. Insulation for Fitting. Washer Fixing Plates. Sealing Pads. Clamps. Screws. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Washer for Hanging Brackets. Clamp Metal. Drain Hose. Insulation for Fitting. Washer Fixing Plates. Sealing Pads. Clamps. Screws. Washers.	
Drawing No.		C : 3D039413				

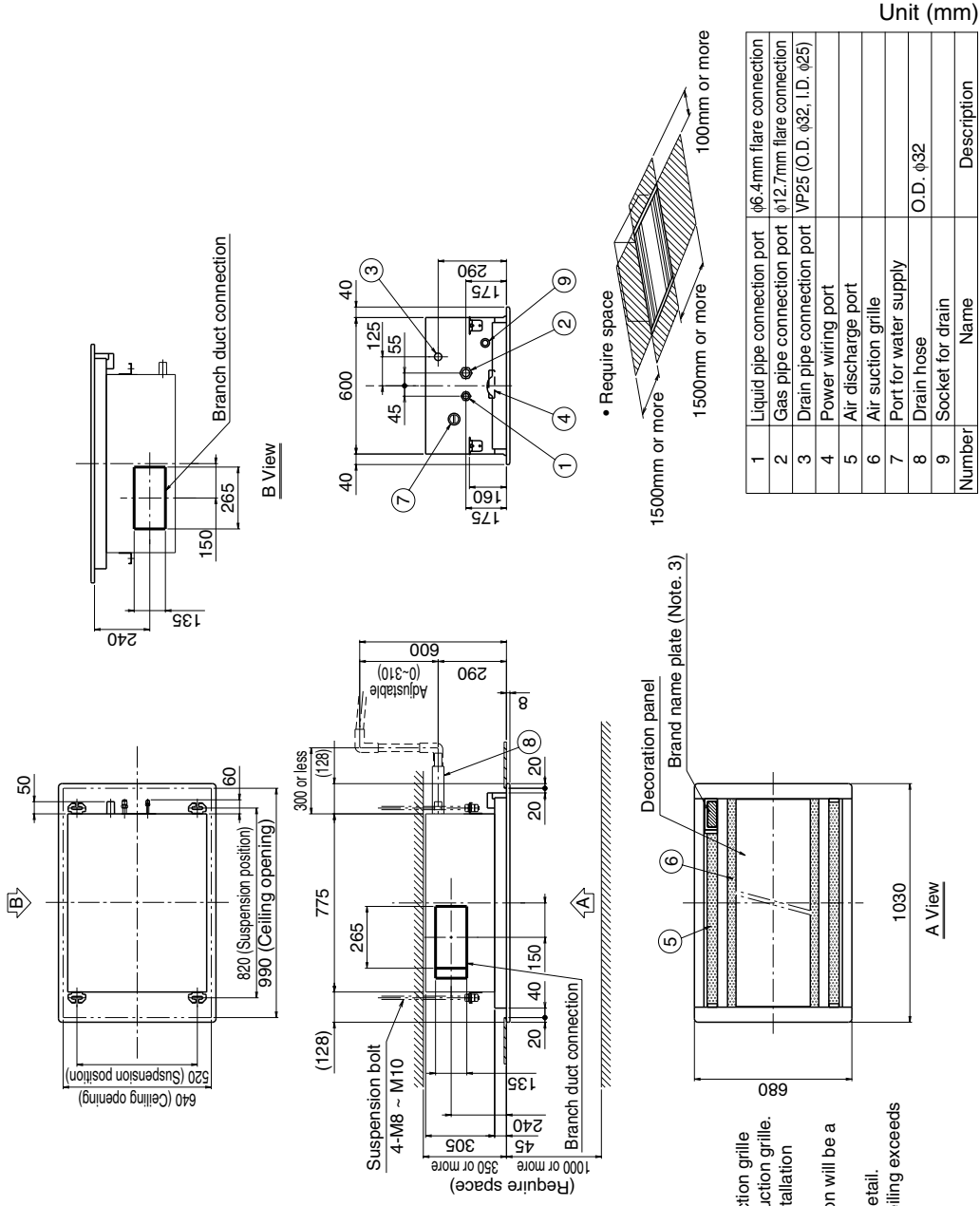
Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
 *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
 *3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
 *4 Anechoic chamber conversion value, measured at a point 1.5 m downward from the unit center. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
 *5 Refer to page 133 for Fan Motor Input.

Conversion Formulae
kcal/h=kWx860
Btu/h=kWx3412
cfm=m ³ /minx35.3

3. Dimensions

- FXCQ20M + BYBC32G-W1 (Decoration Panel)
- FXCQ25M + BYBC32G-W1 (Decoration Panel)
- FXCQ32M + BYBC32G-W1 (Decoration Panel)

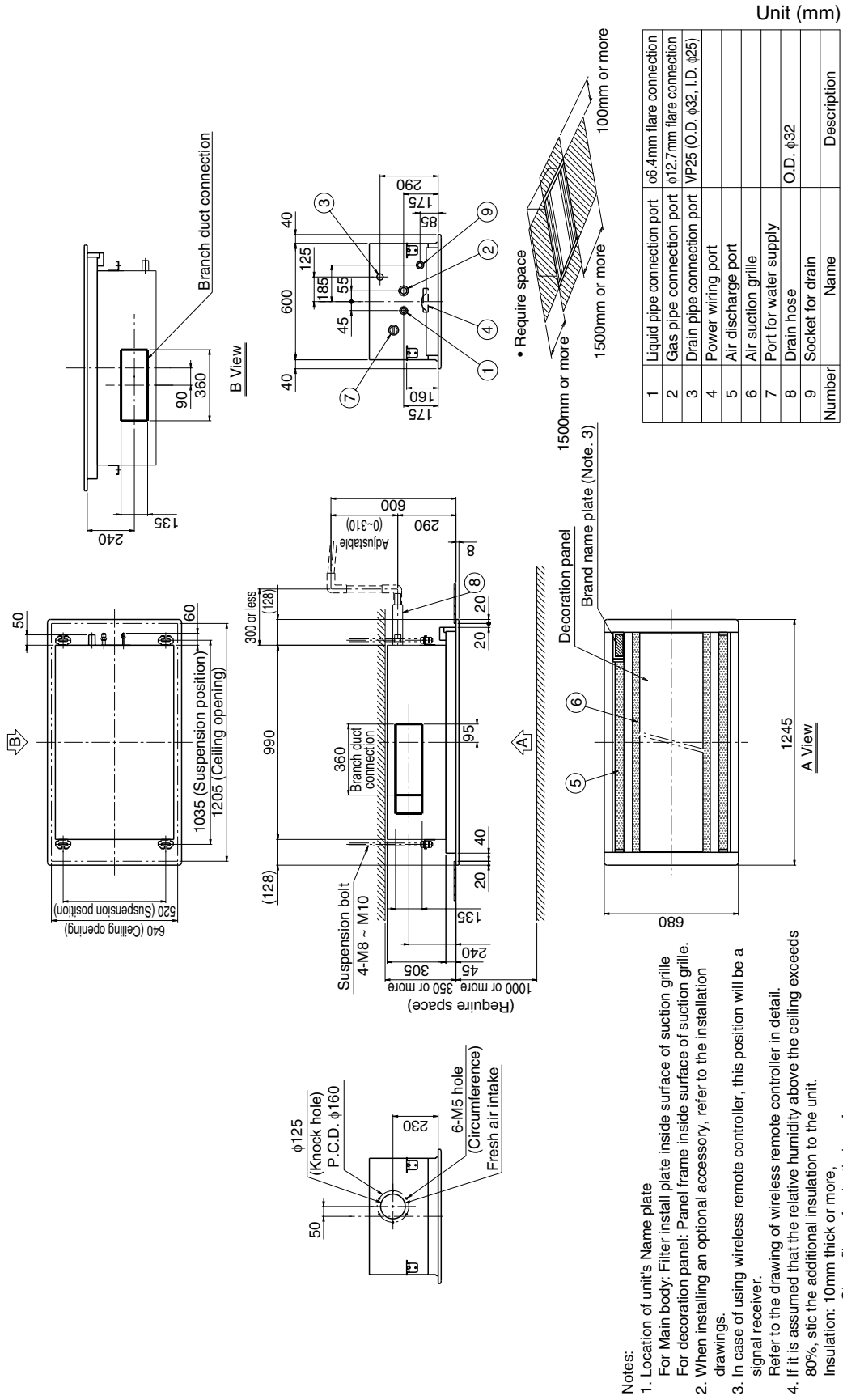


3D039405A

- Notes:**
1. Location of unit's Name plate
For Main body: Filter install plate inside surface of suction grille
For decoration panel: Panel frame inside surface of suction grille.
 2. When installing an optional accessory, refer to the installation drawings.
 3. In case of using wireless remote controller, this position will be a signal receiver.
 4. Refer to the drawing of wireless remote controller in detail.
If it is assumed that the relative humidity above the ceiling exceeds 80%, sitc the additional insulation to the unit.
Insulation: 10mm thick or more.
Glass fiber of polyethylene foam.

FXCQ40M + BYBC50G-W1 (Decoration Panel)

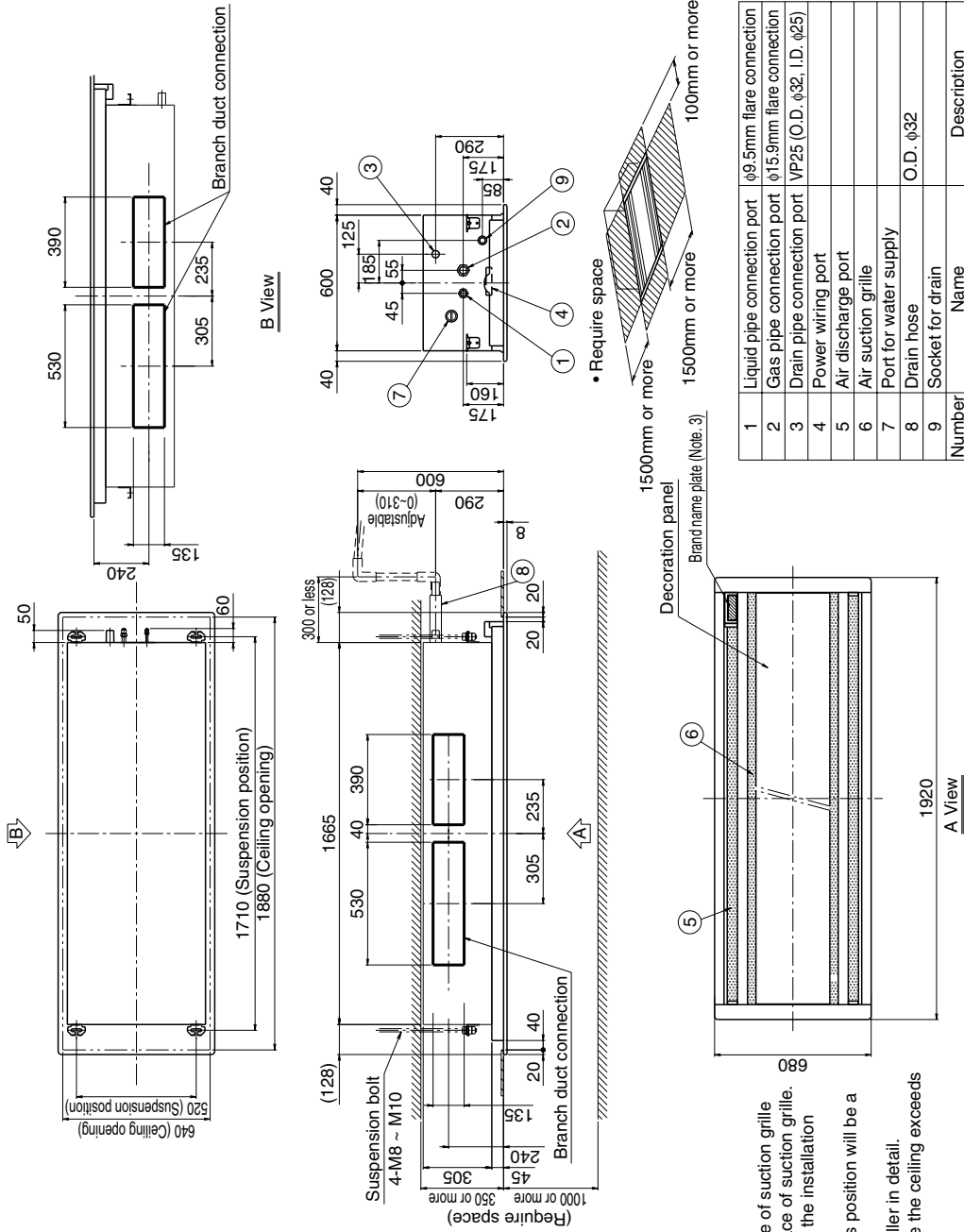
FXCQ50M + BYBC50G-W1 (Decoration Panel)



3D039406A

FXCQ80M + BYBC125G-W1 (Decoration Panel)
FXCQ125M + BYBC125G-W1 (Decoration Panel)

Unit (mm)



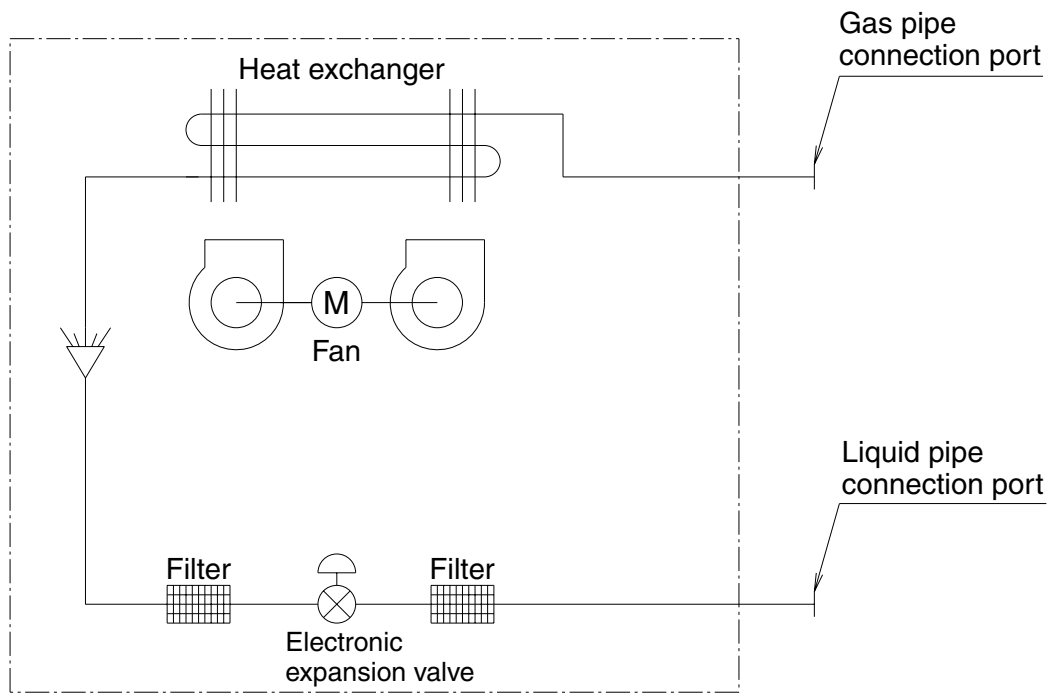
Notes:

1. Location of unit's Name plate
For Main body: Filter install plate inside surface of suction grille
For decoration panel: Panel frame inside surface of suction grille.
2. When installing an optional accessory, refer to the installation drawings.
3. In case of using wireless remote controller, this position will be a signal receiver.
4. Refer to the drawing of wireless remote controller in detail.
If it is assumed that the relative humidity above the ceiling exceeds 80%, stick the additional insulation to the unit.
Insulation: 10mm thick or more,
Glass fiber of polyethylene foam.

Number	Name	Description
1	Liquid pipe connection port	φ9.5mm flare connection
2	Gas pipe connection port	φ15.9mm flare connection
3	Drain pipe connection port	VP25 (O.D. φ32, I.D. φ25)
4	Power wiring port	
5	Air discharge port	
6	Air suction grille	
7	Port for water supply	
8	Drain hose	O.D. φ32
9	Socket for drain	

3D039409A

4. Piping Diagrams



4D034245C

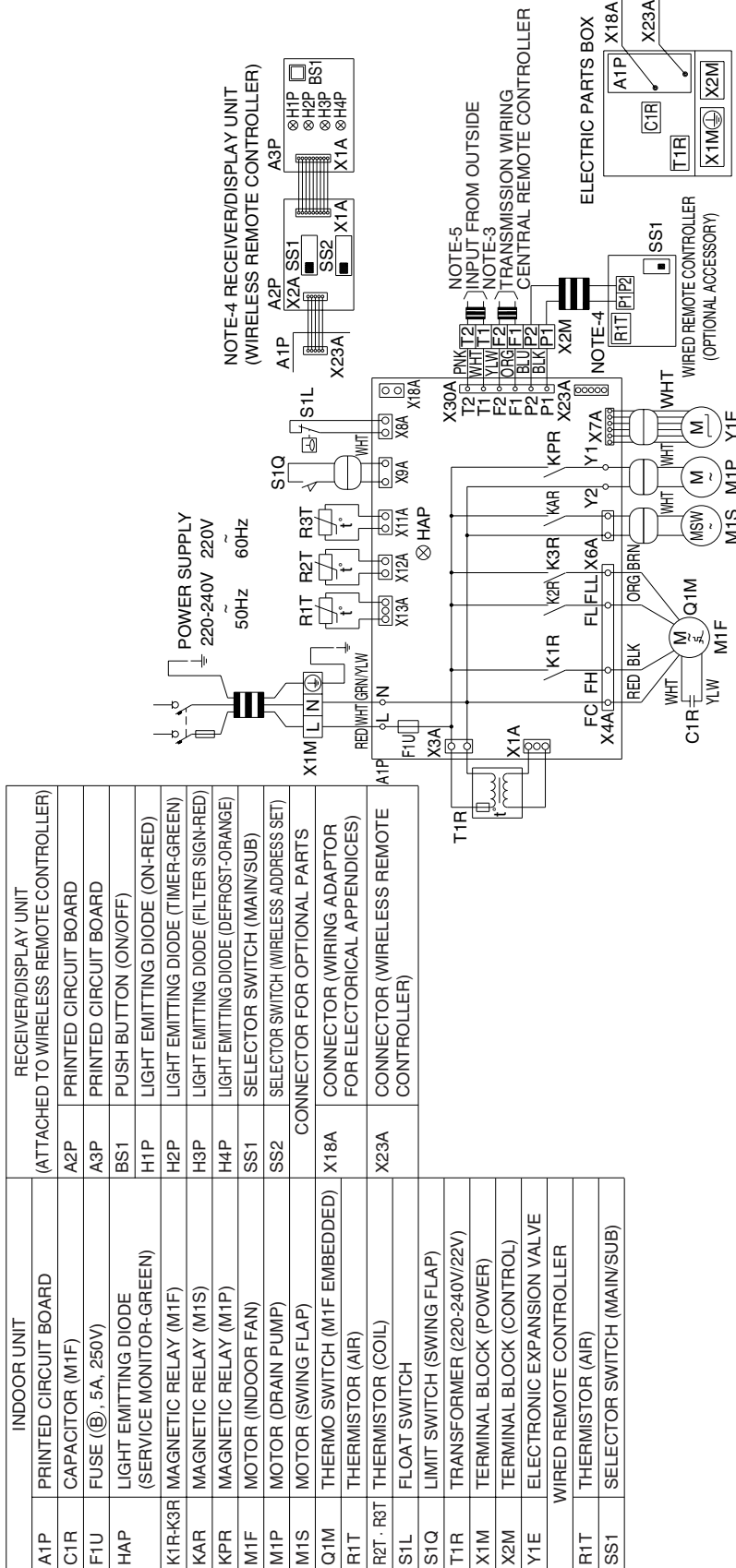
■ Refrigerant pipe connection port diameters

(mm)

Model	Gas	Liquid
FXCQ20 · 25 · 32 · 40 · 50M	φ12.7	φ6.4
FXCQ63 · 80 · 125M	φ15.9	φ9.5

5. Wiring Diagrams

FXCQ20 · 25 · 32 · 63MVE



- INDOOR UNIT
- | INDOOR UNIT | RECEIVER/DISPLAY UNIT
(ATTACHED TO WIRELESS REMOTE CONTROLLER) |
|--|---|
| A1P PRINTED CIRCUIT BOARD | A2P PRINTED CIRCUIT BOARD |
| C1R CAPACITOR (M1F) | A3P PRINTED CIRCUIT BOARD |
| F1U FUSE (B, 5A, 250V) | BS1 PUSH BUTTON (ON/OFF) |
| HAP LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN) | H1P LIGHT EMITTING DIODE (ON-RED) |
| K1R-K3R MAGNETIC RELAY (M1F) | H2P LIGHT EMITTING DIODE (TIMER-GREEN) |
| KAR MAGNETIC RELAY (M1S) | H3P LIGHT EMITTING DIODE (FILTER SIGN-RED) |
| KPR MAGNETIC RELAY (M1P) | H4P LIGHT EMITTING DIODE (DEFROST-ORANGE) |
| M1F MOTOR (INDOOR FAN) | SS1 SELECTOR SWITCH (MAIN/SUB) |
| M1P MOTOR (DRAIN PUMP) | SS2 SELECTOR SWITCH (WIRELESS ADDRESS SET) |
| M1S MOTOR (SWING FLAP) | CONNECTOR FOR OPTIONAL PARTS |
| Q1M THERMO SWITCH (M1F EMBEDDED) | X18A CONNECTOR (WIRING ADAPTOR FOR ELECTORICAL APPENDICES) |
| R1T THERMISTOR (AIR) | X23A CONNECTOR (WIRELESS REMOTE CONTROLLER) |
| R2T-R3T THERMISTOR (COIL) | |
| S1L FLOAT SWITCH | |
| S1Q LIMIT SWITCH (SWING FLAP) | |
| T1R TRANSFORMER (220-240V/22V) | |
| X1M TERMINAL BLOCK (POWER) | |
| X2M TERMINAL BLOCK (CONTROL) | |
| Y1E ELECTRONIC EXPANSION VALVE | |
| WIRED REMOTE CONTROLLER | |
| R1T THERMISTOR (AIR) | |
| SS1 SELECTOR SWITCH (MAIN/SUB) | |
- NOTES) 1. □□□□ : TERMINAL BLOCK, □□□, □ : CONNECTOR, —○— : TERMINAL
 2. ■■■ : FIELD WIRING
 3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTRUCTION MANUAL.
 4. X23A IS CONNECTED WHEN THE WIRELESS REMOTE CONTROLLER KIT IS BEING USED.
 5. WHEN 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 THE UNIT.
 6. SYMBOLS SHOWS AS FOLLOWS.
 (PNK : PINK WHT : WHITE YLW : YELLOW ORG : ORANGE BLU : BLUE BLK : BLACK RED : RED BRN : BROWN GRN : GREEN)
 7. USE COPPER CONDUCTORS ONLY.

3D039556A

6. Electric Characteristics

Model	Units				Power supply		IFM		Input(W)	
	Type	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
FXCQ20M	VE	50	220-240	MAX. 264 Min. 198	0.5	15	0.010	0.4	77	44
FXCQ25·32M					0.5	15	0.015	0.4	92	59
FXCQ40·50M					0.8	15	0.020	0.6	130	97
FXCQ63M					0.9	15	0.030	0.7	161	126
FXCQ80M					1.1	15	0.050	0.9	209	176
FXCQ125M					1.3	15	0.085	1.0	256	223

Symbols :

MCA : Min. Circuit Amps (A)
 MFA : Max. Fuse Amps (See note 5)
 KW : Fan Motor Rated Output(KW)
 FLA : Full Load Amps(A)
 IFM : Indoor Fan Motor

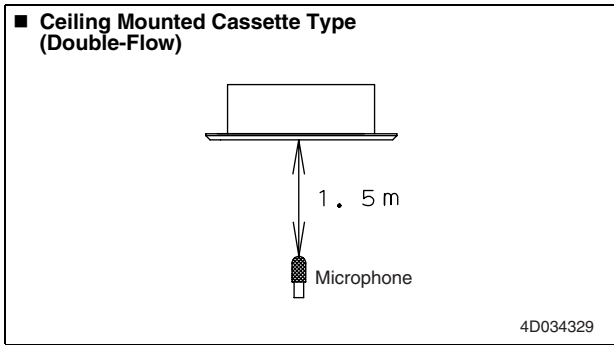
Note :

- Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
- Maximum allowable voltage unbalance between phases is 2%.
- MCA/MFA
 $MCA = 1.25 \times FLA$
 $MFA \leq 4 \times FLA$
 (Next lower standard fuse rating. Min. 15A)
- Select wire size based on the MCA.
- Instead of fuse, use Circuit Breaker.

C : 4D034243A

8. Sound Levels

Overall



Note:

1. The operating conditions are assumed to be standard (JIS conditions).
2. These operating values were obtained in a dead room (conversion values).
Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

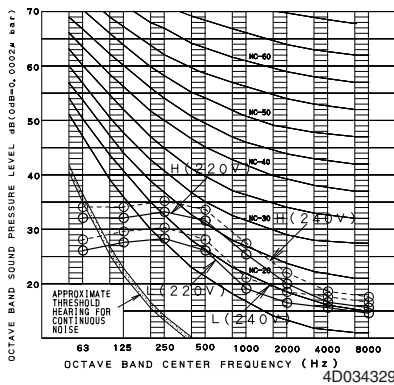
dBA

Model	220V, 50Hz		240V, 50Hz	
	H	L	H	L
FXCQ20M	32	27	34	29
FXCQ25M FXCQ32M	34	28	36	30
FXCQ40M FXCQ50M	34	29	37	32
FXCQ63M	37	32	39	34
FXCQ80M	39	34	41	36
FXCQ125M	44	38	46	40

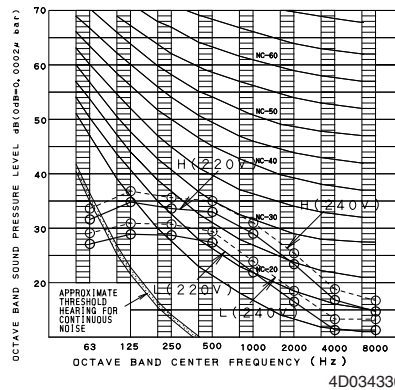
Octave Band Level

- — ○ 220V 50Hz
- - - - ○ 240V 50Hz

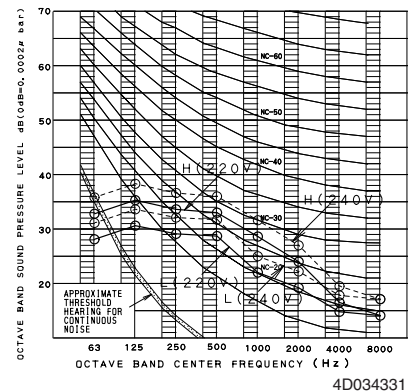
FXCQ20MVE



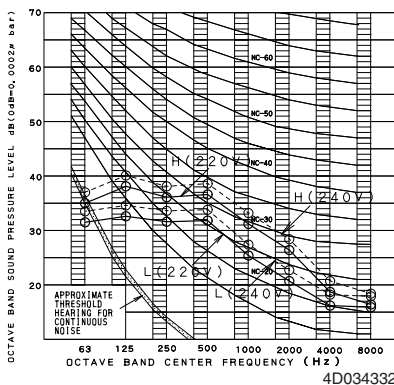
FXCQ25 · 32MVE



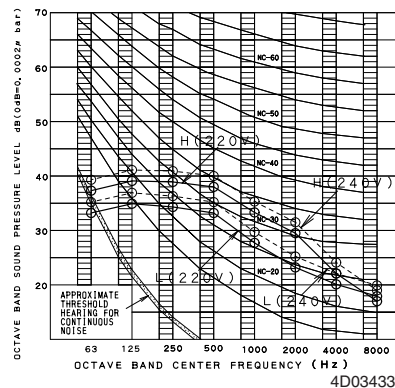
FXCQ40 · 50MVE



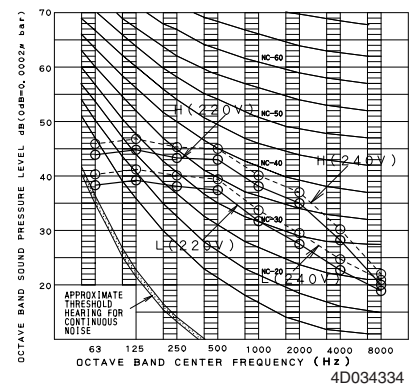
FXCQ63MVE



FXCQ80MVE

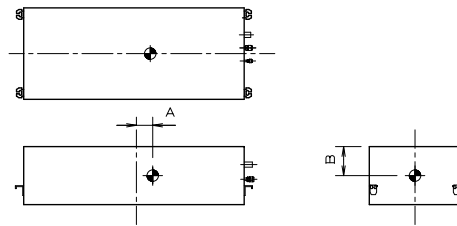


FXCQ125MVE



9. Installation

Center of Gravity

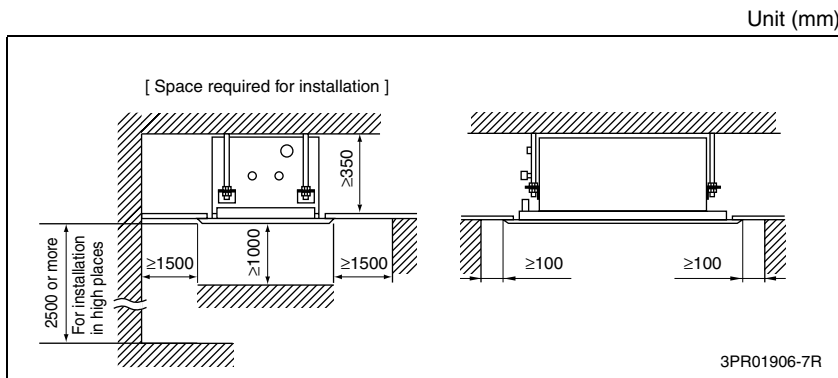


Unit (mm)

MODEL	A	B
FXCQ20 · 25 · 32MVE	20	140
FXCQ40 · 50MVE	25	
FXCQ63MVE	30	150
FXCQ80 · 125MVE	35	

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Service Space

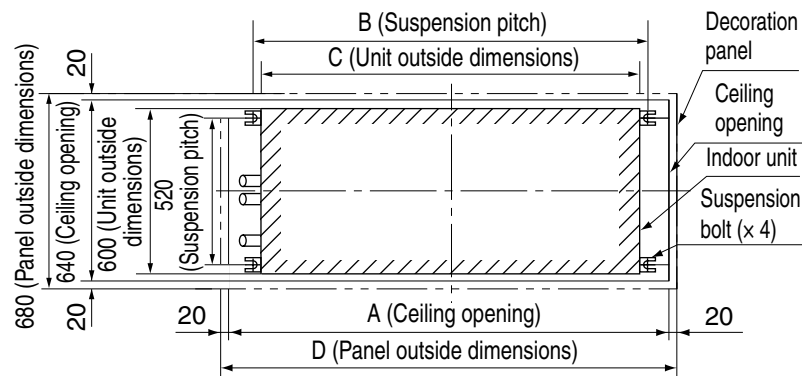


Unit (mm)

Note:

Above figure means minimum value. Please keep these value at least.

Bolt Pitch



(Unit : mm)

Model	A	B	C	D
FXCQ20 · 25 · 32MVE	990	820	775	1030
FXCQ40 · 50MVE	1205	1035	990	1245
FXCQ63MVE	1390	1220	1175	1430
FXCQ80 · 125MVE	1880	1710	1665	1920

3PR01906-7R

Drain Pump Kit

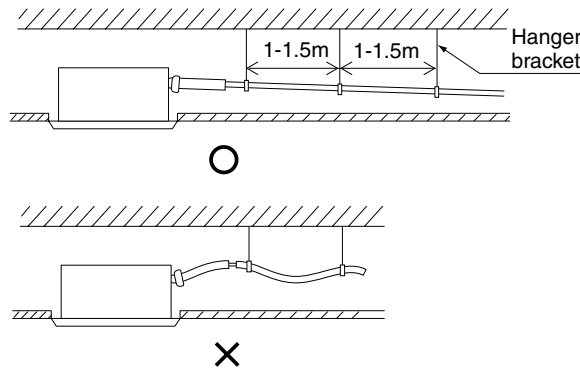
Indoor unit	Drain pump kit
FXCQ-M	Standard (Equipped with indoor unit)

Drain Piping Work

«Rig the drain pipe as shown below and take measures against condensation. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.»

(1) Carry out the drain piping

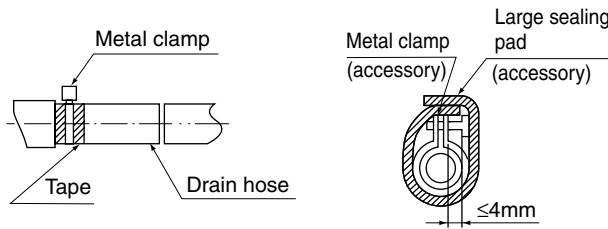
- The diameter of the drain pipe should be greater than or equal to the diameter of the connecting pipe (vinyl tube ; pipe size : 25 mm ; outer dimension : 32 mm).
- Keep the drain pipe short and sloping downwards at a gradient of at least 1 / 100 to prevent air pockets from forming.
- If the drain hose cannot be sufficiently set on a slope, execute the drain raising piping.
- To keep the drain hose from sagging, space hanging wires every 1 to 1.5 m.



CAUTION

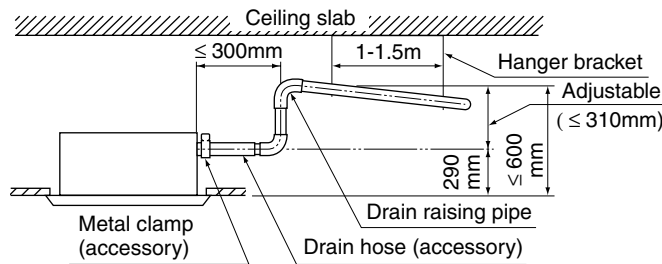
Setting the unit at an angle opposite to the drain piping might cause leaks.

- Use the drain hose and the metal clamp.
Insert the drain hose into the drain socket, up to the tape.
Tighten the clamp until the screw head is less than 4 mm from the hose.
- Wrap the attached sealing pad over the clamp and drain hose to insulate.
- Insulate the drain hose inside the building.

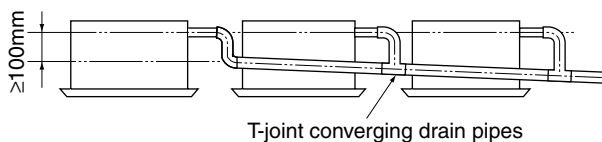


PRECAUTIONS FOR DRAIN RAISING PIPING

- Install the drain raising pipes at a height of less than 310 mm.
- Install the drain raising pipes at a right angle to the indoor unit and no more than 300 mm from the unit.



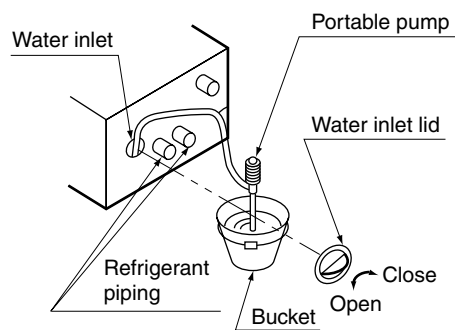
- If converging multiple drain pipes, install according to the procedure shown below.



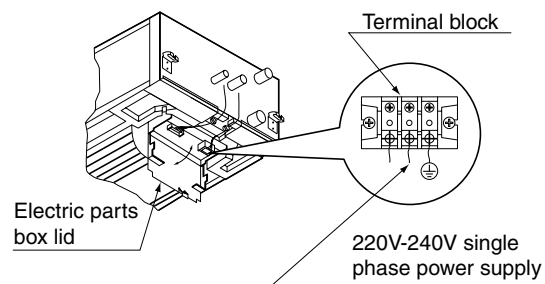
Select converging drain pipes whose gauge is suitable for the operating capacity of the unit.






(2) After piping work is finished, check drainage flows smoothly.

- Open the water inlet lid, add approximately 2.5 liter of water gradually and check drainage flow.

**[WHEN ELECTRIC WIRING WORK IS FINISHED]**

- Check drainage flow during COOL running, explained under “TEST OPERATION.”

[WHEN ELECTRIC WIRING WORK IS NOT FINISHED]

- Remove the electric parts box lid, connect a power supply and remote controller to the terminals. (Refer to the “HOW TO CONNECT WIRINGS”)
Be sure attach the electric parts box lid before turning on the power.
- Next, press the inspection / test operation button “ TEST” on the remote controller. The unit will engage the test operation mode. Press the operation mode selector button “ ” until selecting FAN OPERATION “ ”. Then, press the ON / OFF button “ ”. The indoor unit fan and drain pump will start up. Check that the water has drained from the unit. Press “ TEST” to go back to the first mode.
- **Be careful when doing so because the fan is turning at the same time.**
- Attach the electric parts box lid as before.

**CAUTION**




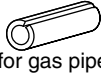




- Drain piping connections
Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.
- Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.




3PR01906-7R

10. Accessories

Standard Accessories

FXCQ20~125M

Name	Metal clamp	Paper pattern for installation	Drain hose	Insulation for fitting	Washer fixing plate	Sealing pad
Quantity	1 pc.	1 pc.	1 pc.	1 each	4 pcs.	1 each
Shape				 for gas pipe  for liquid pipe		 Large  Small

Name	Washer for hanging bracket	Clamp	Screws (M5)	(Other) • Operation manual • Installation manual
Quantity	8 pcs.	8 pcs.	4 pcs.	
Shape			For paper pattern for installation 	

• Screws for fixing panels are attached to decoration panel.

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Optional Accessories (For Unit)

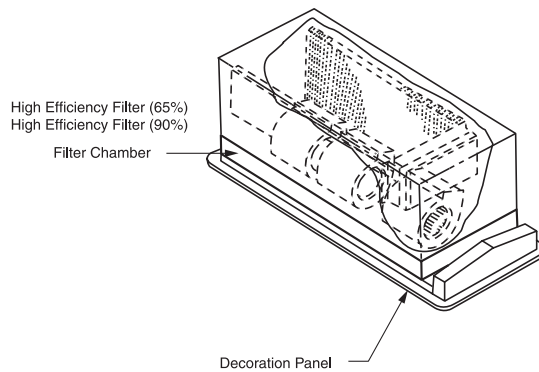
Item		Type	FXCQ20M FXCQ25M FXCQ32M	FXCQ40M	FXCQ50M	FXCQ63M	FXCQ80M	FXCQ125M
Decoration panel			BYBC32G-W1	BYBC50G-W1		BYBC63G-W1	BYBC125G-W1	
Filter related	*1 High efficiency filter 65%		KAFJ532G36	KAFJ532G56		KAFJ532G80	KAFJ532G160	
	*1 High efficiency filter 90%		KAFJ533G36	KAFJ533G56		KAFJ533G80	KAFJ533G160	
	Filter chamber	Bottom suction	KDDFJ53G36	KDDFJ53G56		KDDFJ53G80	KDDFJ53G160	
	Long life replacement filter			KAFJ531G36	KAFJ531G56		KAFJ531G80	KAFJ531G160

3D035093C

Note:

*1. Filter chamber is required if installing high efficiency filter.

Optional Accessories (For Controls) : Refer to P.645



Filter Chamber

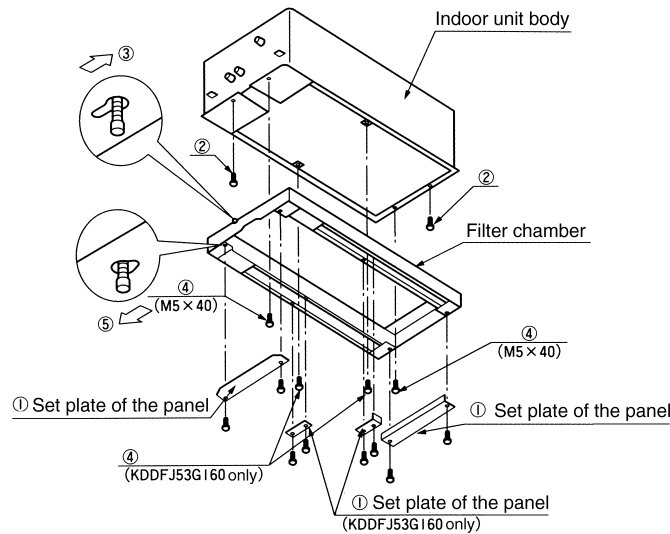
Specifications

Item	Model	KDDFJ53G36	KDDFJ53G56	KDDFJ53G80	KDDFJ53G160
External Dimensions (mm)	H	50	50	50	50
	W	780	995	1180	1670
	D	600	600	600	600
Applicable Models		20 · 25 · 32 Class	40 · 50 Class	63 Class	80 · 125 Class

Precaution at use

1. The filter chamber will be needed when the high efficiency filter will be built in. But, it is impossible to build in more than two kinds filter at the same time.

Installation



High Efficiency Filter (Filter chamber is required for the high efficiency filter)

Specifications

Item	Model	KAFJ532G36	KAFJ532G56	KAFJ532G80	KAFJ532G160	KAFJ533G36	KAFJ533G56	KAFJ533G80	KAFJ533G160
External Dimensions (H×W×D)(mm)		(30×460×145) ×2	(30×675×145) ×2	(30×860×145) ×2	(30×660×145) ×4	(30×460×145) ×2	(30×675×145) ×2	(30×860×145) ×2	(30×660×145) ×4
Dust Collection Efficiency (%)		65% (Colorimetric method)				90% (Colorimetric method)			
Initial Pressure Loss (Pa)		29			39	39			49
Final Pressure Loss (Pa)		78				78			
Filter		Non-woven fabric of synthetic fiber				Non-woven fabric of synthetic fiber			
Life Time (h) *		2500 hours				2500 hours		2100 hours	2000 hours
Applicable Models		20 · 25 · 32 Class	40 · 50 Class	63 Class	80 · 125 Class	20 · 25 · 32 Class	40 · 50 Class	63 Class	80 · 125 Class

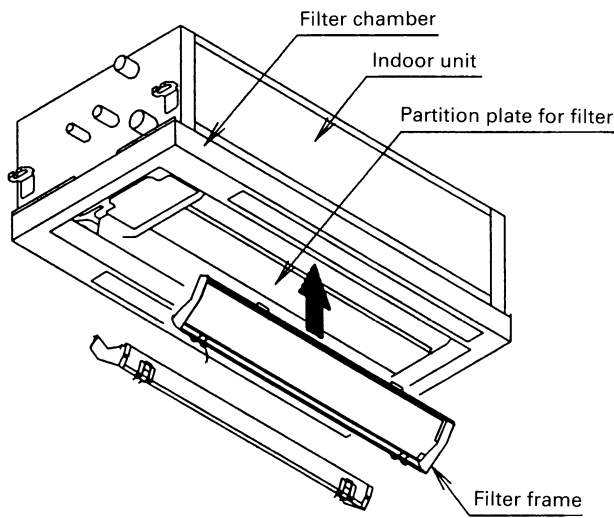
Note:

1. * The life time at the dust density 0.15 mg/m³.
2. Replace the fan motor's capacitor in accordance with the guide in next page, when the high efficiency filter is used.

Installation

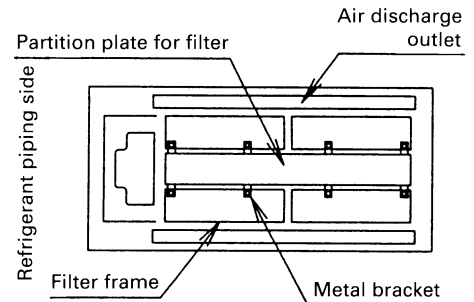
■ **Installation of the filter frame**

Attach the filter frame to the indoor unit, where the original filter was located. (Refer to the operation manual of the indoor unit how to remove the standard filter. The standard filter removed shall not be used.)



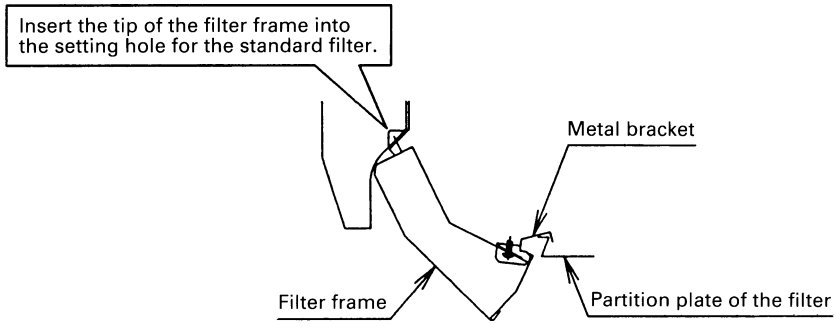
In case of KAFJ532G160 and KAFJ533G160

There are four filter frames of 2 kinds of each having different position of the metal bracket. Install the filter frames to the indoor unit as shown below.

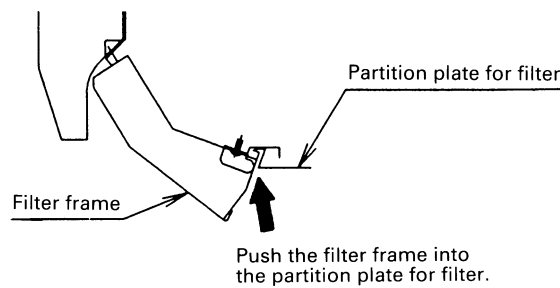


The figure seen from the bottom.

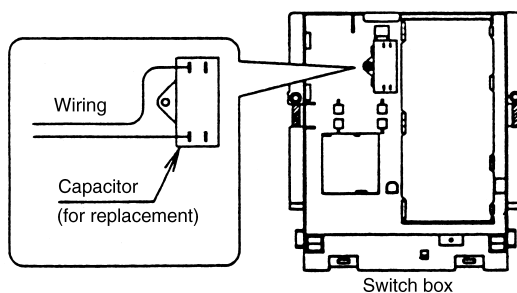
1. Loosen the screw of the metal bracket located on each end of the filter frame and hook the filter frame temporarily to the partition plate located at the center of the indoor unit.



2. Fasten the screw of the metal bracket tightly.



Replacement guide of capacitor for fan motor



■ **Capacity of a capacitor to be replaced.**

Model	Capacitor's Capacity	Applicable Models
KAFJ532 · 533G36	2 μ F	20 · 25 · 32 Class
KAFJ532 · 533G56	2 μ F	40 · 50 Class
KAFJ532 · 533G80	2 μ F	63 Class
KAFJ532 · 533G160	4.5 μ F	80 Class
	6 μ F	125 Class

FXKQ-MA

Ceiling Mounted Cassette

Corner Type

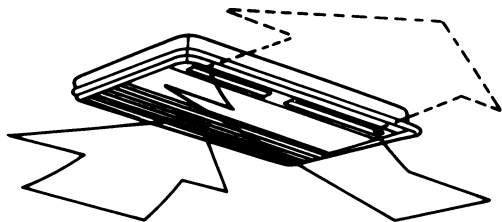
1. Features	144
2. Specifications	145
3. Dimensions	146
4. Piping Diagrams	148
5. Wiring Diagrams.....	149
6. Electric Characteristics.....	150
7. Capacity Tables	151
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9. Installation	153
10. Accessories.....	156

1. Features

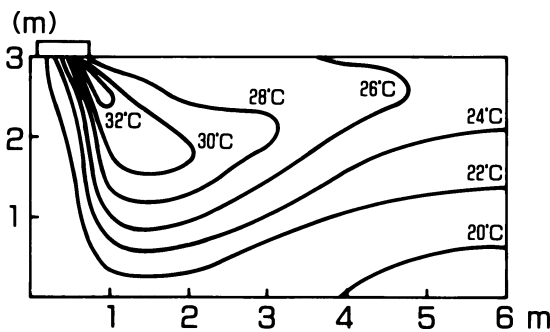
215 mm-thick body features discreet, slim design and offers a wide variety of discharge methods and mounting such as in corners or in suspended ceilings, etc.



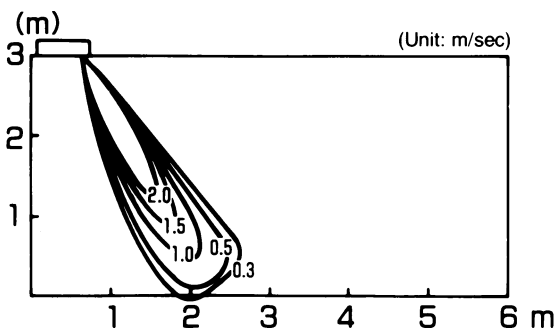
- Single-flow type offers effective air discharge from corners or from a suspended ceiling.



- Thin, discreet design enables mounting when the ceiling pocket is as shallow as 22 cm
- Temperature Distribution (FXKQ63MA : downward discharge angle 65° in heating.)

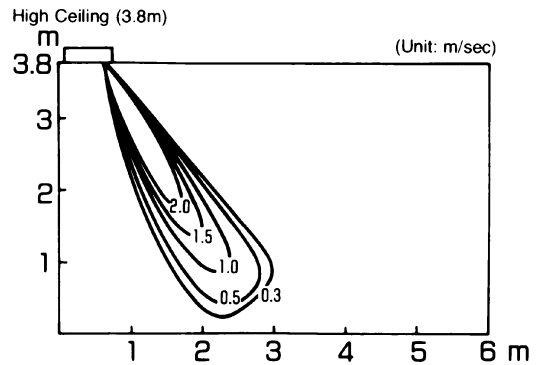


- Air velocity Distribution (FXKQ63MA : downward discharge angle 65° in heating.)

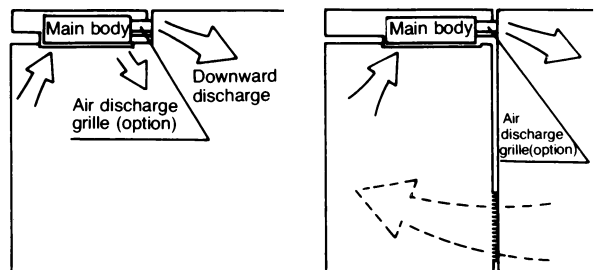


- Air volume switch built into the main body allows

mounting in ceilings as high as 3.8 m. This unit is even able to handle spaces with a split level ceiling by accurately adjusting air volume in accordance with the ceiling height.



- The 63 class (equivalent to 2.5 HP) features extremely quiet operation, only 42 dBA of sound level.
- In addition to downward discharge, front discharge (straight discharge, neither angled upward nor downward) can be provided by mounting an air discharge unit (optional) to the front of the body; can be mounted even with difficult elements such as suspended ceilings and sagging walls. A combination of front and downward discharge is also possible. (Auto-swing cannot be used with front discharge.)



* Set for front discharge using a suspended ceiling
Downward discharge is shut off and air is blown straight out (front discharge)

- Equipped with a programmed drying mechanism that dehumidifies while inhibiting changes in room temperature.
- Includes as standard equipment a long-life filter that is maintenance-free for approximately one year. (Treated to mold resistant.)
- Equipped with drain pump kit that makes possible draining in the upward direction up to 500 mm from the ceiling surface.
- Decoration panel is thin and unimposing, doesn't clash with interior design and provides an excellent finishing touch for the ceiling. (Available in white.)
- If the ceiling pocket is shallow and the main body will not fit, a thick panel that provides aesthetically appealing cover for the exposed portion (up to 20 mm) is available as an option.

2. Specifications

Ceiling Mounted Cassette Corner Type

Model		FXKQ25MAVE	FXKQ32MAVE	FXKQ40MAVE	FXKQ63MAVE	
*1 Cooling Capacity (19.5°CWB)	kcal/h	2,500	3,200	4,000	6,300	
	Btu/h	9,900	12,600	16,000	24,900	
	kW	2.9	3.7	4.7	7.3	
*2 Cooling Capacity (19.0°CWB)	kW	2.8	3.6	4.5	7.1	
Casing		Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	
Dimensions: (HxWxD)		mm	215x1,110x710	215x1,110x710	215x1,310x710	
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	2x11x1.75	2x11x1.75	3x11x1.75	
	Face Area	m ²	0.180	0.180	0.226	
Fan	Model		3D12H1AN1V1	3D12H1AN1V1	3D12H1AP1V1	4D12H1AJ1V1
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	15x1	15x1	20x1	45x1
	Air Flow Rate (H/L)	m ³ /min	11/9	11/9	13/10	18/15
		cfm	388/318	388/318	459/353	635/530
Drive		Direct 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	Microprocessor Thermostat for Cooling and Heating	
Sound Absorbing Thermal Insulation Material		Polyethylene Foam	Polyethylene Foam	Polyethylene Foam	Polyethylene Foam	
Piping Connections	Liquid Pipes	mm	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ9.5 (Flare Connection)
	Gas Pipes	mm	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ15.9 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Machine Weight (Mass)		kg	31	31	31	34
*4 Sound Level (H/L) (220V)		dBA	38/33	38/33	40/34	42/37
Safety Devices		Fuse. Thermal Fuse for Fan Motor.	Fuse. Thermal Fuse for Fan Motor.	Fuse. Thermal Fuse for Fan Motor.	Fuse. Thermal Fuse for Fan Motor.	
Refrigerant Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	
Connectable Outdoor Units		R-410A PA Series	R-410A PA Series	R-410A PA Series	R-410A PA Series	
Decoration Panels (Option)	Model		BYK45FJW1	BYK45FJW1	BYK45FJW1	BYK71FJW1
	Panel Color		White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions: (HxWxD)	mm	70x1,240x800	70x1,240x800	70x1,240x800	70x1,440x800
	Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
	Weight	kg	8.5	8.5	8.5	9.5
Standard Accessories		Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Screws. Washers. Positioning Jig for Installation. Insulation for Hanger Bracket. Air Outlet Blocking Pad.				
Drawing No.		C : 3D038813A				

Note:

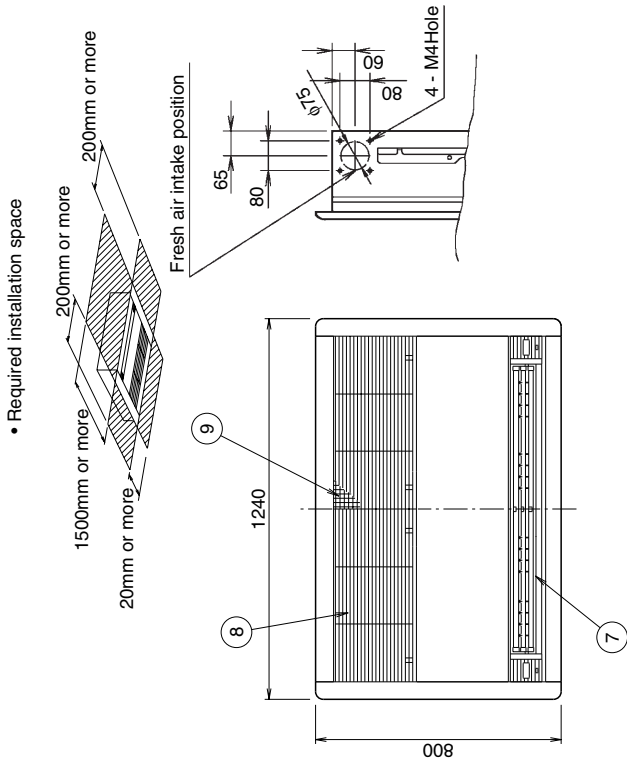
- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- *4 Anechoic chamber conversion value, measured at a point 1 m in front of the unit and 1m downward. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- 5 Refer to page 150 for Fan Motor Input.

Conversion Formulae

$$\begin{aligned} \text{kcal/h} &= \text{kW} \times 860 \\ \text{Btu/h} &= \text{kW} \times 3412 \\ \text{cfm} &= \text{m}^3/\text{min} \times 35.3 \end{aligned}$$

3. Dimensions

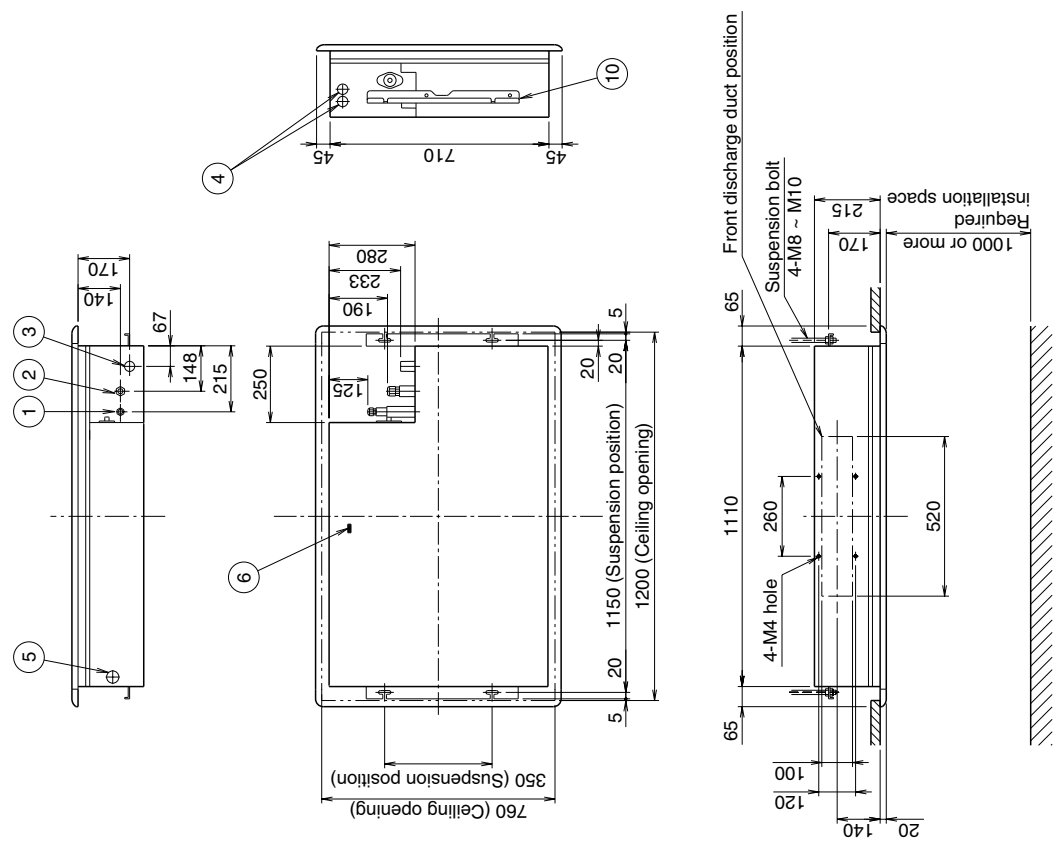
FXKQ25MA + BYK45FJW1 (Decoration Panel)
 FXKQ32MA + BYK45FJW1 (Decoration Panel)
 FXKQ40MA + BYK45FJW1 (Decoration Panel)



- Notes:
- 1. Location of unit's Name plate
 - For main body: Bottom part of fan housing inside of Air suction grille.
 - For decoration panel: Service lid face inside of Air suction grille.
2. When installing an optional accessory, refer to the installation drawings.

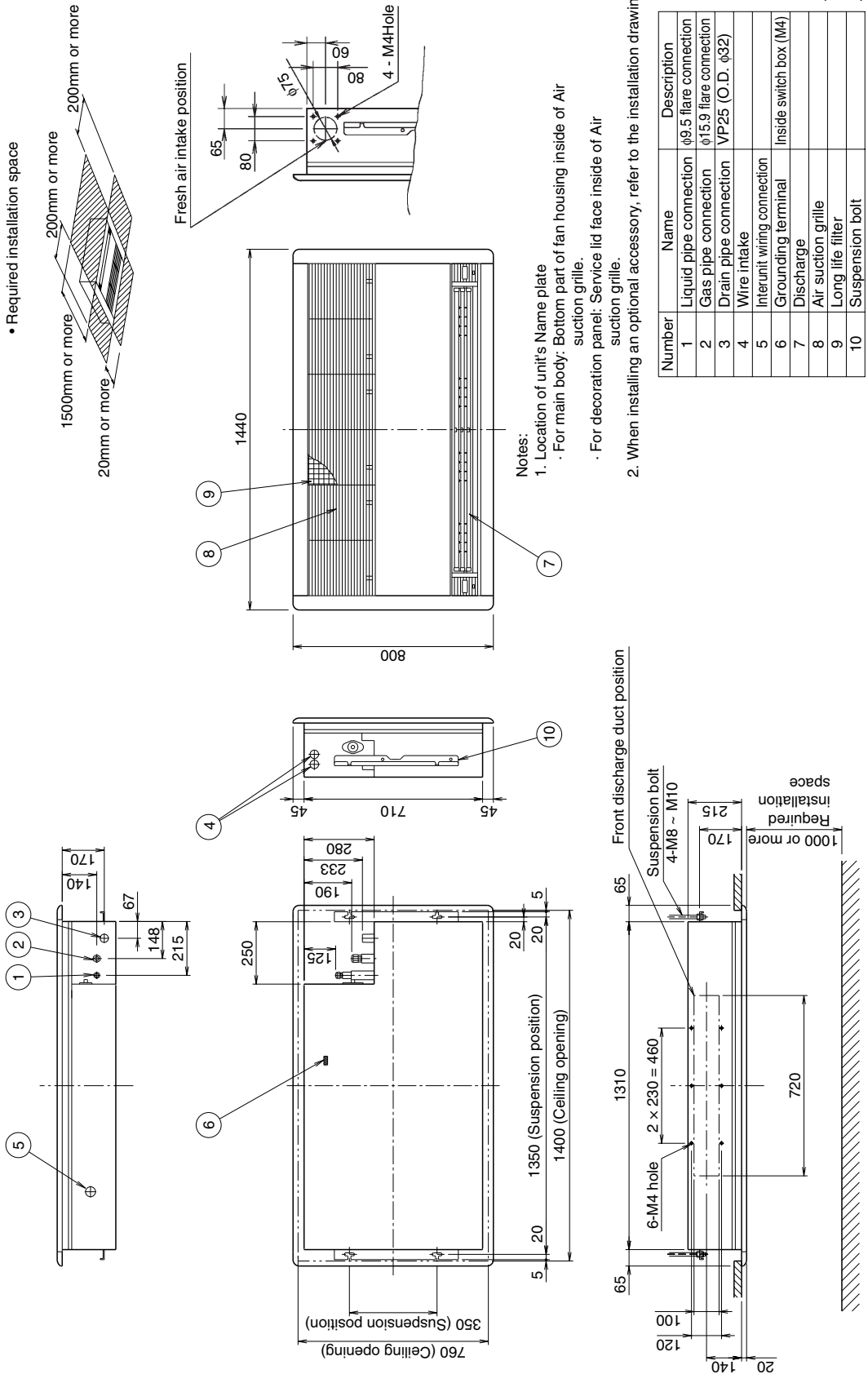
Unit (mm)

Number	Name	Description
1	Liquid pipe connection	φ6.4 flare connection
2	Gas pipe connection	φ12.7 flare connection
3	Drain pipe connection	VP25 (O.D. φ32)
4	Wire intake	
5	Interunit wiring connection	
6	Grounding terminal	Inside switch box (M4)
7	Discharge	
8	Air suction grille	
9	Long life filter	
10	Suspension bolt	



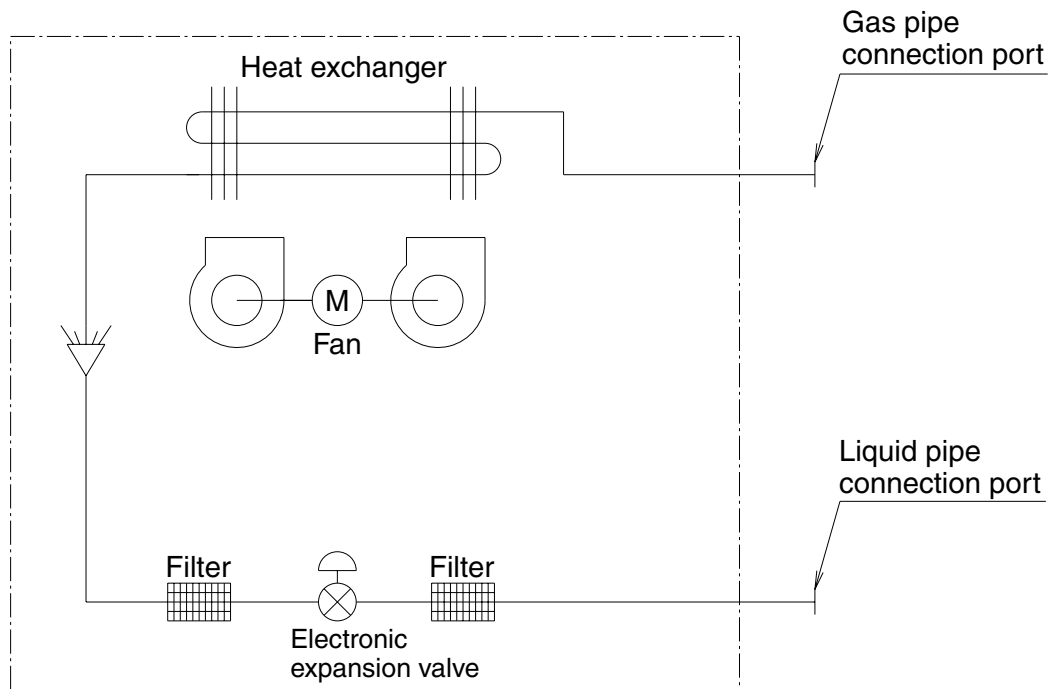
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FXKQ63MA + BYK71FJW1 (Decoration Panel)



C : 3D038841

4. Piping Diagrams



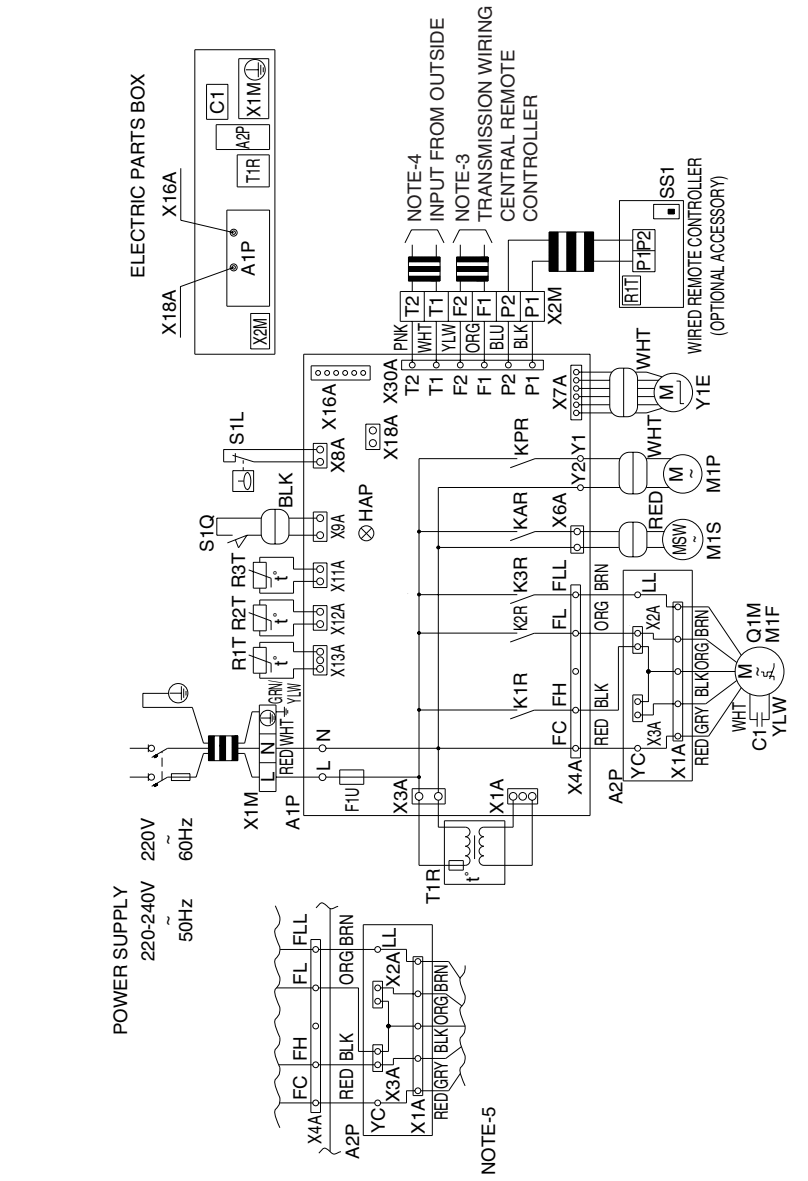
4D034245C

■ Refrigerant pipe connection port diameters

Model	(mm)	
	Gas	Liquid
FXKQ25 · 32 · 40MA	φ12.7	φ6.4
FXKQ63MA	φ15.9	φ9.5

5. Wiring Diagrams

FXKQ25 · 32 · 40 · 63MAVE



INDOOR UNIT	
A1P	PRINTED CIRCUIT BOARD
A2P	TERMINAL BOARD
C1	CAPACITOR (M1F)
F1U	FUSE (⊗, 5A, 250V)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)
K1R-K3R	MAGNETIC RELAY (M1F)
KAR	MAGNETIC RELAY (M1S)
KPR	MAGNETIC RELAY (M1P)
M1F	MOTOR (INDOOR FAN)
M1P	MOTOR (DRAIN PUMP)
M1S	MOTOR (SWING FLAP)
Q1M	THERMO SWITCH (M1F EMBEDDED)
R1T	THERMISTOR (AIR)
R2T · R3T	THERMISTOR (COIL)
S1L	FLOAT SWITCH
S1Q	LIMIT SWITCH (SWING FLAP)
T1R	TRANSFORMER (220-240V/22V)
X1M	TERMINAL BLOCK (POWER)
X2M	TERMINAL BLOCK (CONTROL)
Y1E	ELECTRONIC EXPANSION VALVE
	WIRED REMOTE CONTROLLER
R1T	THERMISTOR (AIR)
SS1	SELECTOR SWITCH (MAIN/SUB)
	CONNECTOR FOR OPTIONAL PARTS
X16A	CONNECTOR (ADAPTOR FOR WIRING)
X18A	CONNECTOR (WIRING ADAPTOR FOR ELECTRICAL APPENDICES)

- NOTES) 1. □□□□ : TERMINAL BLOCK, □□□, D- : CONNECTOR, —○— : TERMINAL
 2. ≡≡≡ : FIELD WIRING
 3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTRUCTION MANUAL.
 4. WHEN 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 THE UNIT.
 5. IN CASE HIGH E. S. P. OPERATION, CHANGE OVER THE WIRING CONNECTION FROM X2A TO X3A.
 6. SYMBOLS SHOW AS FOLLOWS. (PNK : PINK WHT : WHITE YLW : YELLOW ORG : ORANGE BLU : BLUE RED : RED BRN : BROWN GRY : GRAY)
 7. USES COPPER CONDUCTORS ONLY.

3D039564C

6. Electric Characteristics

Units					Power supply		IFM		Input(W)	
Model	Type	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
FXKQ25MA	VE	50	220-240	MAX. 264 Min. 198	0.3	15	0.015	0.2	66	46
FXKQ32MA					0.3	15	0.015	0.2	66	46
FXKQ40MA					0.3	15	0.020	0.2	76	56
FXKQ63MA					0.5	15	0.045	0.4	105	85

Symbols :

MCA : Min. Circuit Amps (A)
 MFA : Max. Fuse Amps (See note 5)
 KW : Fan Motor Rated Output(KW)
 FLA : Full Load Amps(A)
 IFM : Indoor Fan Motor

Note :

- Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
- Maximum allowable voltage unbalance between phases is 2%.
- MCA/MFA
 $MCA = 1.25 \times FLA$
 $MFA \leq 4 \times FLA$
 (Next lower standard fuse rating. Min. 15A)
- Select wire size based on the MCA.
- Instead of fuse, use Circuit Breaker.

C : 4D037076B

7. Capacity Tables

7.1 Cooling Capacity

FXKQ-MA

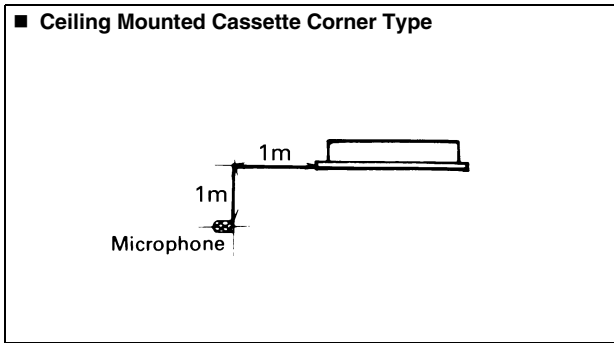
[50Hz]

Unit Size	Indoor air temp.												Cooling capacity			
	14.0°CWB 20°CDB		16.0°CWB 23°CDB		18.0°CWB 26°CDB		19.0°CWB 27°CDB		20.0°CWB 28°CDB		22.0°CWB 30°CDB		24.0°CWB 32°CDB			
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC		
25	10.0	1.9	1.9	2.2	2.3	2.6	2.3	2.8	2.4	3.0	2.5	3.4	2.5	3.7	2.5	3.6
	12.0	1.9	1.9	2.2	2.3	2.6	2.3	2.8	2.4	3.0	2.5	3.4	2.5	3.6	2.5	3.6
	14.0	1.9	1.9	2.2	2.3	2.6	2.3	2.8	2.4	3.0	2.5	3.4	2.5	3.6	2.5	3.6
	16.0	1.9	1.9	2.2	2.3	2.6	2.3	2.8	2.4	3.0	2.5	3.4	2.5	3.6	2.5	3.6
	18.0	1.9	1.9	2.2	2.3	2.6	2.3	2.8	2.4	3.0	2.5	3.4	2.5	3.6	2.5	3.6
	20.0	1.9	1.9	2.2	2.3	2.6	2.3	2.8	2.4	3.0	2.5	3.4	2.5	3.6	2.5	3.6
	21.0	1.9	1.9	2.2	2.3	2.6	2.3	2.8	2.4	3.0	2.5	3.4	2.5	3.6	2.5	3.6
	23.0	1.9	1.9	2.2	2.3	2.6	2.3	2.8	2.4	3.0	2.5	3.4	2.5	3.6	2.5	3.6
	25.0	1.9	1.9	2.2	2.3	2.6	2.3	2.8	2.4	3.0	2.5	3.4	2.5	3.6	2.5	3.6
	27.0	1.9	1.9	2.2	2.3	2.6	2.3	2.8	2.4	3.0	2.5	3.4	2.5	3.6	2.5	3.6
32	10.0	1.9	1.9	2.2	2.3	2.6	2.3	2.8	2.4	3.0	2.5	3.4	2.5	3.6	2.5	3.6
	12.0	2.4	2.2	2.9	2.9	3.4	2.6	3.6	2.7	3.8	2.9	4.3	2.9	4.7	2.9	4.7
	14.0	2.4	2.2	2.9	2.9	3.4	2.6	3.6	2.7	3.8	2.9	4.3	2.9	4.7	2.9	4.7
	16.0	2.4	2.2	2.9	2.9	3.4	2.6	3.6	2.7	3.8	2.9	4.3	2.9	4.7	2.9	4.7
	18.0	2.4	2.2	2.9	2.9	3.4	2.6	3.6	2.7	3.8	2.9	4.3	2.9	4.7	2.9	4.7
	20.0	2.4	2.2	2.9	2.9	3.4	2.6	3.6	2.7	3.8	2.9	4.3	2.9	4.7	2.9	4.7
	21.0	2.4	2.2	2.9	2.9	3.4	2.6	3.6	2.7	3.8	2.9	4.3	2.9	4.7	2.9	4.7
	23.0	2.4	2.2	2.9	2.9	3.4	2.6	3.6	2.7	3.8	2.9	4.3	2.9	4.7	2.9	4.7
	25.0	2.4	2.2	2.9	2.9	3.4	2.6	3.6	2.7	3.8	2.9	4.3	2.9	4.7	2.9	4.7
	27.0	2.4	2.2	2.9	2.9	3.4	2.6	3.6	2.7	3.8	2.9	4.3	2.9	4.7	2.9	4.7
40	10.0	3.0	2.6	3.6	3.6	4.2	3.2	4.5	3.2	4.8	3.3	5.4	3.5	5.9	3.5	5.9
	12.0	3.0	2.6	3.6	3.6	4.2	3.2	4.5	3.2	4.8	3.3	5.4	3.5	5.9	3.5	5.9
	14.0	3.0	2.6	3.6	3.6	4.2	3.2	4.5	3.2	4.8	3.3	5.4	3.5	5.9	3.5	5.9
	16.0	3.0	2.6	3.6	3.6	4.2	3.2	4.5	3.2	4.8	3.3	5.4	3.5	5.9	3.5	5.9
	18.0	3.0	2.6	3.6	3.6	4.2	3.2	4.5	3.2	4.8	3.3	5.4	3.5	5.9	3.5	5.9
	20.0	3.0	2.6	3.6	3.6	4.2	3.2	4.5	3.2	4.8	3.3	5.4	3.5	5.9	3.5	5.9
	21.0	3.0	2.6	3.6	3.6	4.2	3.2	4.5	3.2	4.8	3.3	5.4	3.5	5.9	3.5	5.9
	23.0	3.0	2.6	3.6	3.6	4.2	3.2	4.5	3.2	4.8	3.3	5.4	3.5	5.9	3.5	5.9
	25.0	3.0	2.6	3.6	3.6	4.2	3.2	4.5	3.2	4.8	3.3	5.4	3.5	5.9	3.5	5.9
	27.0	3.0	2.6	3.6	3.6	4.2	3.2	4.5	3.2	4.8	3.3	5.4	3.5	5.9	3.5	5.9
63	10.0	4.8	4.0	5.7	4.5	6.6	5.0	7.1	5.1	7.6	5.2	8.5	5.4	9.2	5.4	9.2
	12.0	4.8	4.0	5.7	4.5	6.6	5.0	7.1	5.1	7.6	5.2	8.5	5.4	9.2	5.4	9.2
	14.0	4.8	4.0	5.7	4.5	6.6	5.0	7.1	5.1	7.6	5.2	8.5	5.4	9.2	5.4	9.2
	16.0	4.8	4.0	5.7	4.5	6.6	5.0	7.1	5.1	7.6	5.2	8.5	5.4	9.2	5.4	9.2
	18.0	4.8	4.0	5.7	4.5	6.6	5.0	7.1	5.1	7.6	5.2	8.5	5.4	9.2	5.4	9.2
	20.0	4.8	4.0	5.7	4.5	6.6	5.0	7.1	5.1	7.6	5.2	8.5	5.4	9.2	5.4	9.2
	21.0	4.8	4.0	5.7	4.5	6.6	5.0	7.1	5.1	7.6	5.2	8.5	5.4	9.2	5.4	9.2
	23.0	4.8	4.0	5.7	4.5	6.6	5.0	7.1	5.1	7.6	5.2	8.5	5.4	9.2	5.4	9.2
	25.0	4.8	4.0	5.7	4.5	6.6	5.0	7.1	5.1	7.6	5.2	8.5	5.4	9.2	5.4	9.2
	27.0	4.8	4.0	5.7	4.5	6.6	5.0	7.1	5.1	7.6	5.2	8.5	5.4	9.2	5.4	9.2
TC	Total capacity ; kW															
SHC	Sensible heat capacity ; kW															

Refer to Outdoor Unit Capacity Tables : on page 491 ~, 552 ~, for the actual performance data of each indoor and outdoor unit combination.

8. Sound Levels

Overall



Note:

1. The operating conditions are assumed to be standard (JIS conditions).
2. These operating values were obtained in a dead room (conversion values).
Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

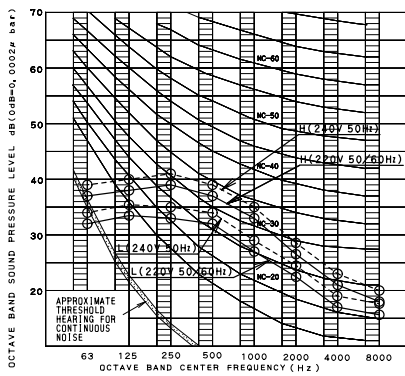
dBA

Model	220V, 50Hz		240V, 50Hz	
	H	L	H	L
FXKQ25MA FXKQ32MA	38	33	40	35
FXKQ40MA	40	34	42	36
FXKQ63MA	42	37	44	39

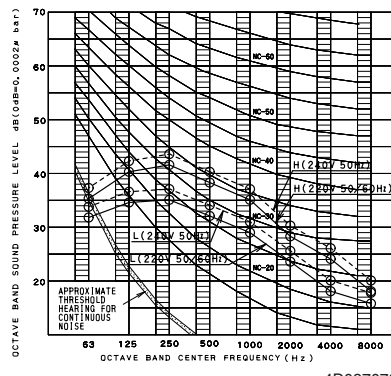
Octave Band Level

- — ○ 220V 50Hz
- - - - ○ 240V 50Hz

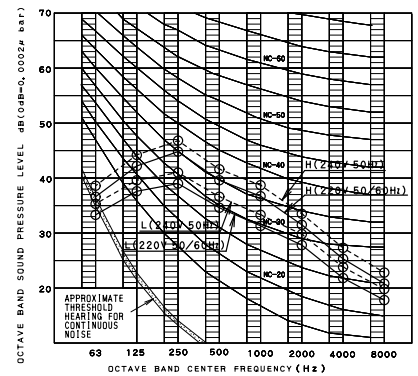
FXKQ25 · 32MAVE



FXKQ40MAVE

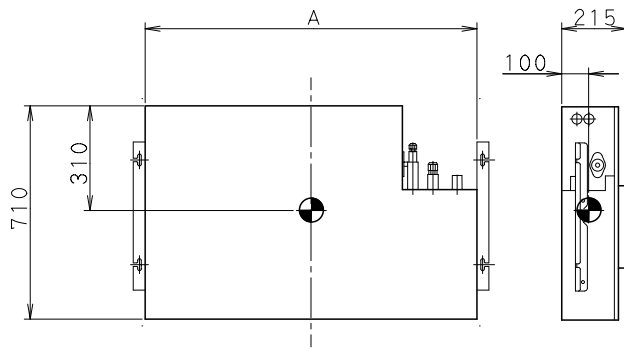


FXKQ63MAVE



9. Installation

Center of Gravity



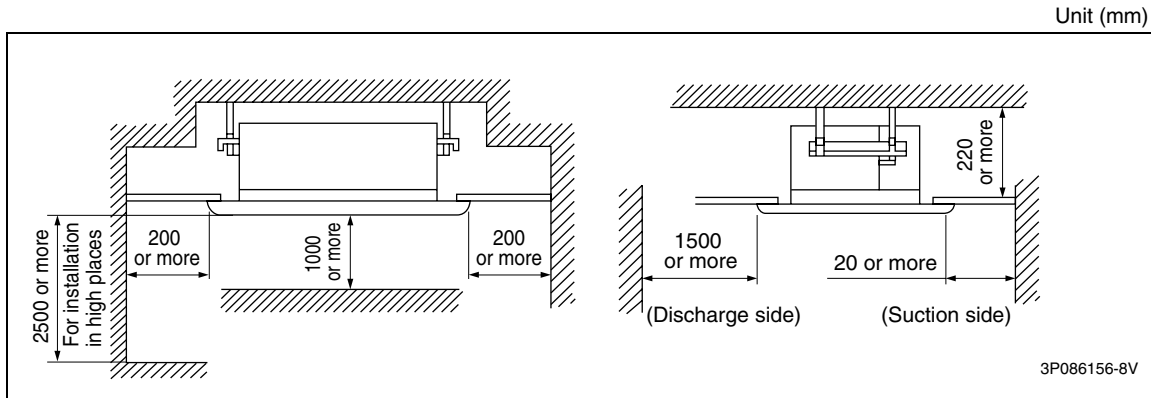
Unit (mm)

MODEL	A
FXKQ25 · 32 · 40MAVE	1110
FXKQ63MAVE	1310

C : 4D037079A

4

Service Space

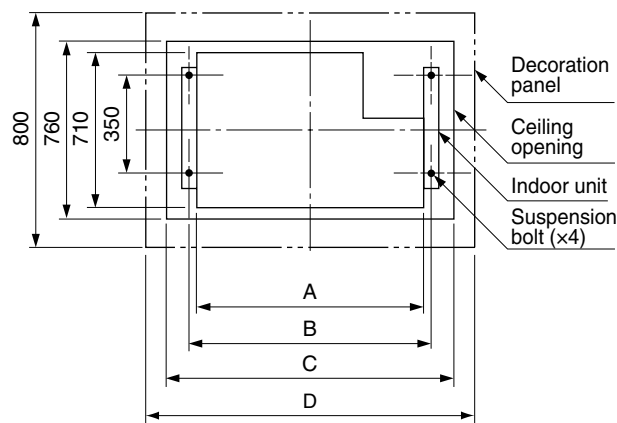


3P086156-8V

Note:

Above figure means minimum value. Please keep these value at least.

Bolt Pitch



Model	A	B	C	D
FXKQ25 · 32 · 40MAVE	1110	1150	1200	1240
FXKQ63MAVE	1310	1350	1400	1440

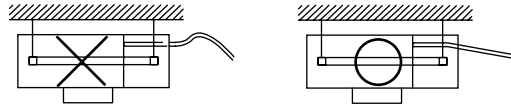
3P086156-8V

Drain Pump Kit

Indoor unit	Drain pump kit
FXKQ-MA	Standard (Equipped with indoor unit)

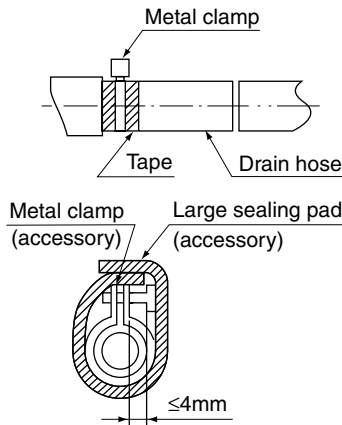
Drain Piping Work

«Rig the drain pipe as shown below and take measures against condensation. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.»



(1) Carry out the drain piping.

- Keep piping as short as possible and slope it downwards so that air may not remain trapped inside the pipe.
- The diameter of the drain pipe should be greater than or equal to the diameter of the connecting pipe (vinyl tube; pipe size : 25 mm ; outer dimension : 32 mm).
- Use the drain hose and metal clamp. Insert the drain hose into the drain socket, up to the white tape. Tighten the metal clamp until the screw head is less than 4 mm from the hose.



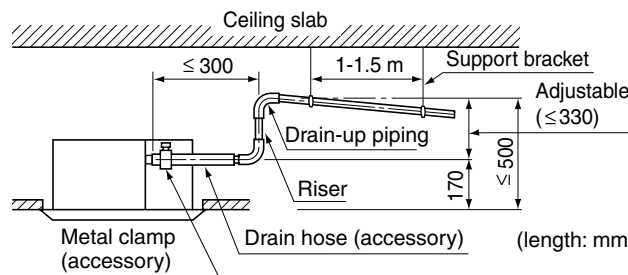
CAUTION

Setting the unit at an angle opposite to the drain piping might cause leaks.

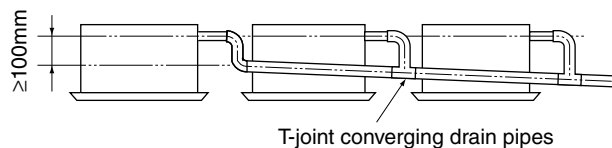
- Wrap the sealing pad over the clamp and drain hose to insulate.
- Insulate the drain hose inside the building. While referring to the figure on the right, insulate the clamp and drain hose with the large sealing pad.
- If the drain hose cannot be sufficiently set on a slope, execute the drain raising piping.
- Secure a downward gradient of 1 / 100 or more for the drain pipe. To accomplish this, mount supporting brackets at an interval of 1 - 1.5 m.

Precautions when doing drain-up piping work.

- Make sure the drain-up piping is at most 330 mm high.
- Stand the drain-up piping horizontally, and make sure it is not further than 300 mm from the base of the drain socket.



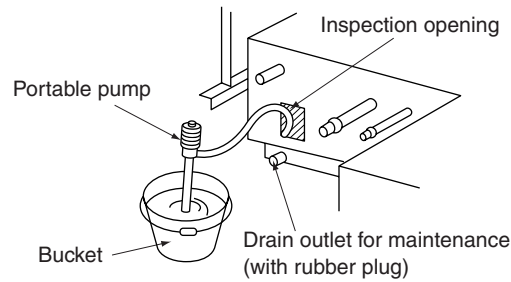
- Use the following outline if laying concentrated drain piping.
- If converging multiple drain pipes, install according to the procedure shown below.



Select converging drain pipes whose gauge is suitable for the operating capacity of the unit.

(2) After piping work is finished, check drainage flows smoothly.

- Open the inspection opening, add approximately 1 liter of water slowly into the drain pan and check drainage flow.



NOTE

- Use the drain outlet for maintenance to drain water from the drain pan.






WHEN ELECTRIC WIRING WORK IS FINISHED

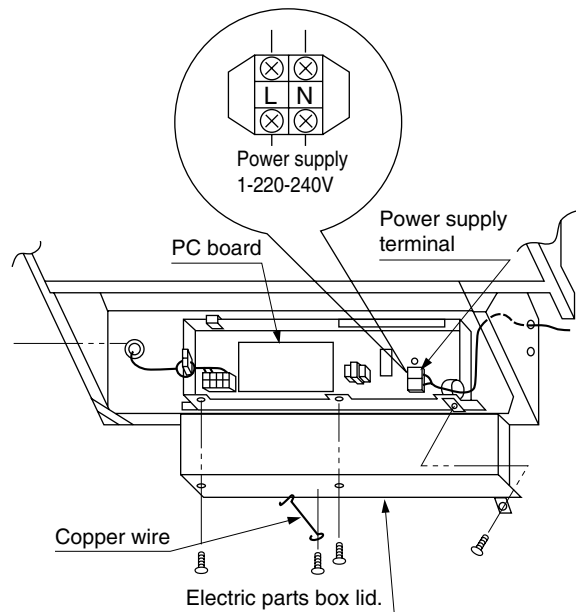
- Check drainage flow during COOL running, explained under “TEST OPERATION”.

WHEN ELECTRIC WIRING WORK IS NOT FINISHED

- Remove the electric parts box lid, connect a power supply and remote controller to the terminals.
(Refer to the **HOW TO CONNECT WIRINGS**)

Be sure attach the electric parts box lid before turning on the power.

Next, press the inspection/test operation button “” on the remote controller. The unit will engage the test operation mode. Press the operation mode selector button “” until selecting FAN OPERATION “”. Then, press the ON/OFF button “”. The indoor unit fan and drain pump will start up. Check that the water has drained from the unit. Press “” to go back to the first mode.



CAUTION


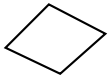

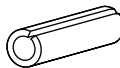


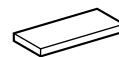
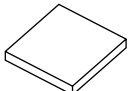
- Drain piping connections
Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.
- Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.



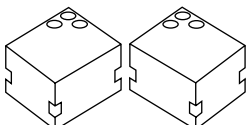
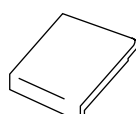
3P086156-8V

10. Accessories

Standard Accessories

FXKQ25-63MA

Name	Metal clamp	Paper pattern for installation	Drain hose	Insulation for fitting	Sealing pad	Insulation for hanger bracket
Quantity	1pc.	1 pc.	1 pc.	1 each.	1 each.	4 pcs.
Shape		 Corrugated cardboard		For gas pipe  For liquid pipe 	Large  Small 	

Name	Washer for hanging bracket	Clamp	Positioning jig for installation	Air outlet blocking pad	(Other) • Operation manual • Installation manual
Quantity	8 pcs.	8 pcs.	2 each.	1 pc.	
Shape			 4 screws		

- Screws for fixing panels are attached to decoration panel.

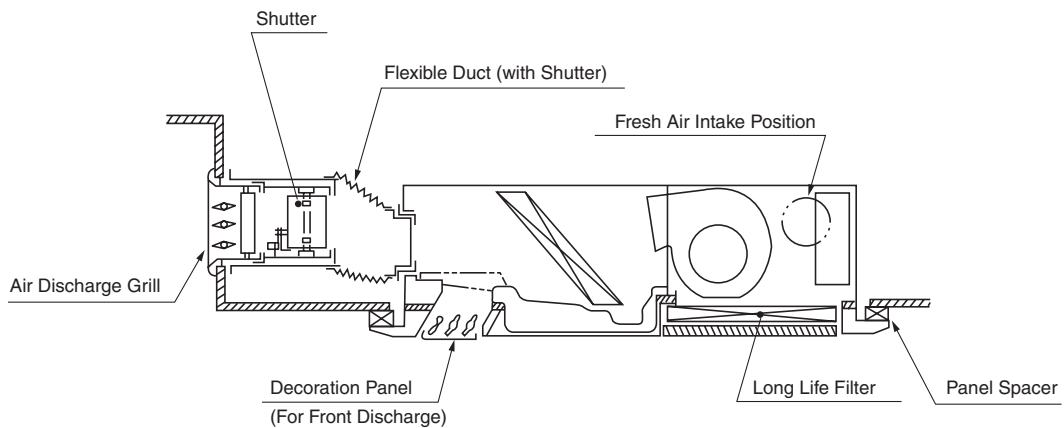
3P086156-8V

Optional Accessories (For Unit)

Item		Type	FXKQ25MA FXKQ32MA FXKQ40MA	FXKQ63MA
Panel related	Decoration panel		BYK45FJW1	BYK71FJW1
	Long life replacement filter		KAFJ521F56	KAFJ521F80
Air inlet and air discharge outlet related	Air discharge grill		K-HV7AW	K-HV9AW
	Air discharge blind panel		KDBJ52F56W	KDBJ52F80W
	Panel spacer		KPBJ52F56W	KPBJ52F80W
	Flexible duct (with shutter)		KFDJ52FA56	KFDJ52FA80

C : 3D037081A

Optional Accessories (For Controls) : Refer to P.645



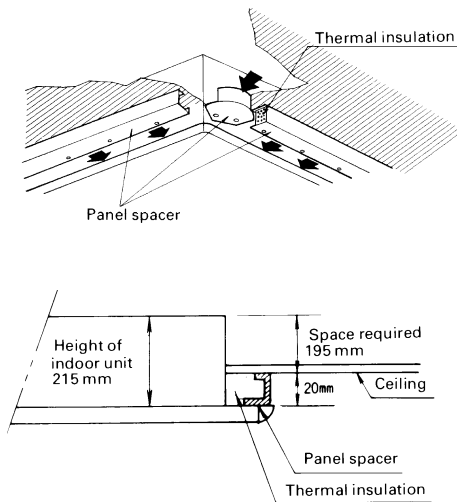
Panel Spacer

If the space above the ceiling is not available for more than 220 mm, use the panel spacer, which enables to install the unit in 200 mm space.

Specifications

Item	Model	KPBJ52F56W	KPBJ52F80W
Color		White	
Dimensions (mm)	Height	20	
	Width	1,240	1,440
	Depth	800	
Materials		Outer Frame : Resin Molding Thermal Insulation : Foam Polyethylene	
Contents		Panel Spacer(1)(2)(3) Thermal Insulation (1)(2), Screws	
Applicable Decoration Panel		BYK45FJW1	BYK71FJW1
Applicable Model		For Indoor Unit 25~40 Class	For Indoor Unit 63 Class

Installation



Precaution at use

1. Be sure to stick insulators on the panel spacer after the panel spacer is assembled.
2. Secure 20 cm height in the space above ceiling.

Contents of Kit

Prior to installation check whether you have the complete kit of parts as shown below including the installation manual.

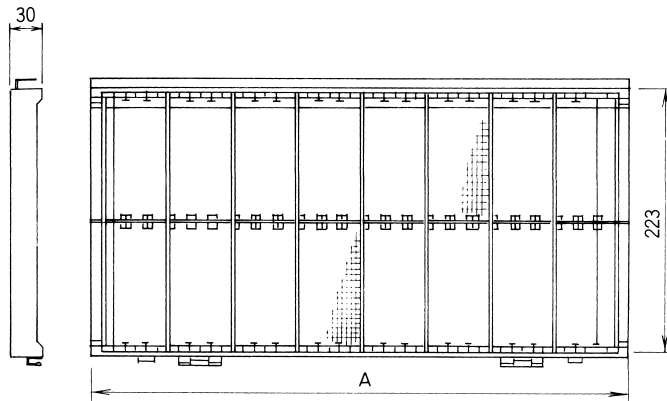
Name	Panel spacer (1)	Panel spacer (2)	Panel spacer (3)	Thermal insulation (1)
Quantity	2 pieces	2 pieces	4 pieces	2 pieces
Shape				
Name	Thermal insulation (2)	Screws	Installation manual	
Quantity	2 pieces	18 pieces	1 piece	
Shape		 M4×12		

Long Life Replacement Filter

Specifications

Items	Model	KAFJ521F56	KAFJ521F80
Life Time, Average Efficiency		2,500 hours (dust density 0.15 mg/m ³), 45% (Gravity method)	
Filter		Mildew Proof Resin Net	Mildew Proof Resin Net
Required Quantity (for One Unit)		Two pieces	Two pieces
Applicable Models		25 · 32 · 40 Class	63 Class

Dimensions



Model	A
KAFJ521F56	403
KAFJ521F80	503

JC : D3K1145A

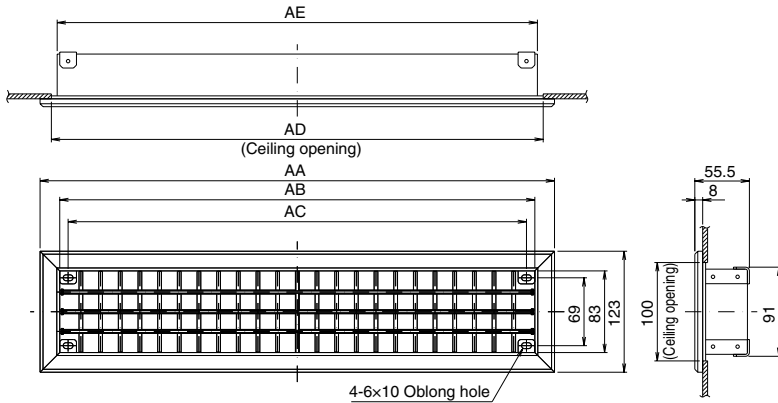
Discharge Grille

This optional kit is used when the unit is installed with front air discharge. The direction of air can be adjusted flexibly. This discharge grille should be installed with the following flexible duct.

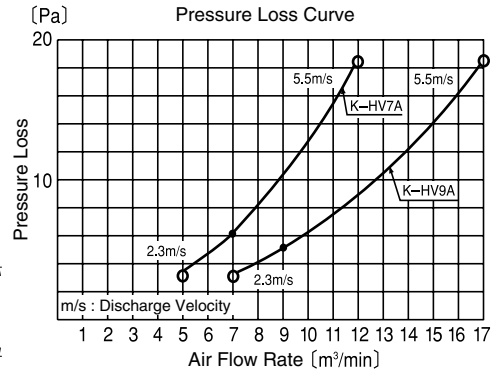
Specifications

Items	Model	K-HV7AW	K-HV9AW
Air Flow Rate (m ³ /min)		5~12	7~17
Type		HV type (Horizontal blade and vertical blade movable)	
External Color		White	White
Materials		Steel plate (A cryptomeria only at the tip of the outlet + nylon flocking)	
Structural Parts		Discharge grille, Screws, Blade control tool	
Applicable Flexible Duct		KFDJ52F56	KFDJ52F80
Applicable Models		25 · 32 · 40 Class	63 Class

Dimension



Model	AA	AB	AC	AD	AE
K-HV7AW	523	483	466	500	488
K-HV9AW	723	683	666	700	688



JC : D3K1972C

Flexible Duct (with Shutter)

The built-in shutter's Open/Shut action makes it possible to regulate the air flow rate. Besides, the flexible duct helps the connection to the main unit to give more flexibility.

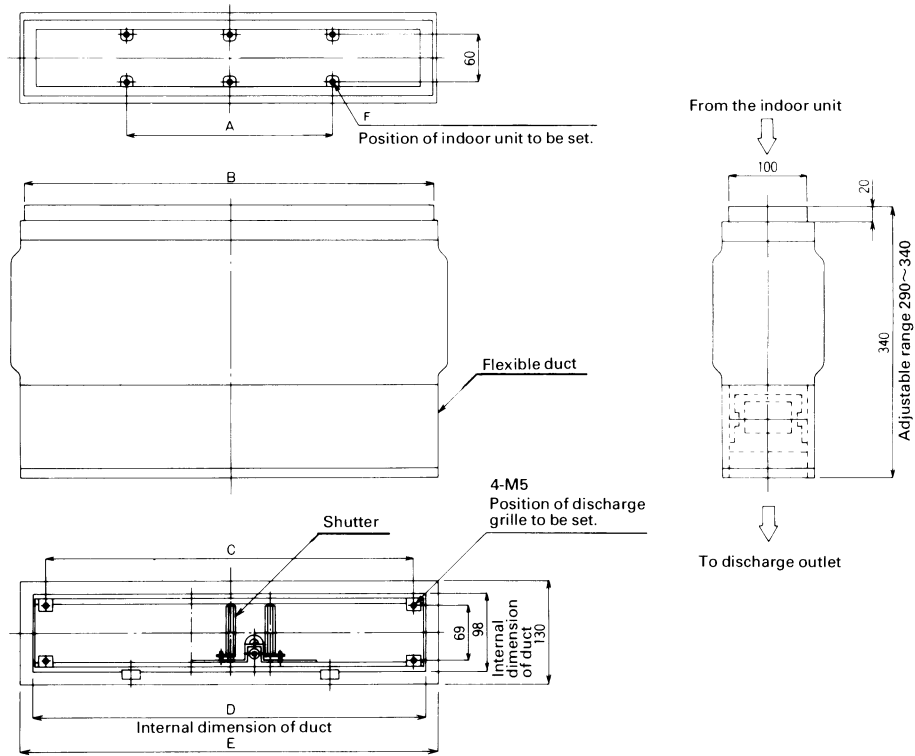
Specifications

Items	Model	KFDJ52FA56	KFDJ52FA80
External Dimension (mm)	H	132	
	W	532	732
	D	Max. 353	
Materials		Outer frame : Steel plate Flexible Duct : Glass wool, Vinyl chloride sheet	
Contents		Flexible duct, Shutter, Duct's set plate, Insulator, Outlet seal pad, Set screw, Shutter Open/shut tool, Blade adjusting tool	
Applicable Models		25 · 32 · 40 Class	63 Class

Precaution at use

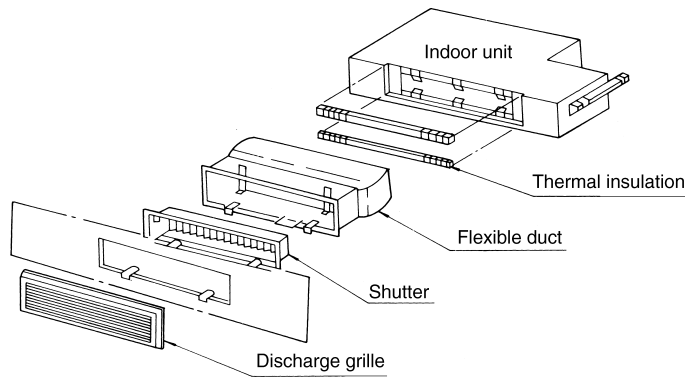
Be sure to seal out the opening of the drain pan with drain outlet seal materials after the front panel of the indoor unit is removed away.

Dimension



Model	Applicable Model	A	B	C	D	E	F
KFDJ52FA56	For Indoor Unit 25~40 Class	260	520	466	498	530	4- ϕ Hole
KFDJ52FA80	For Indoor Unit 63 Class	460	720	666	698	730	6- ϕ 7 Hole

Installation



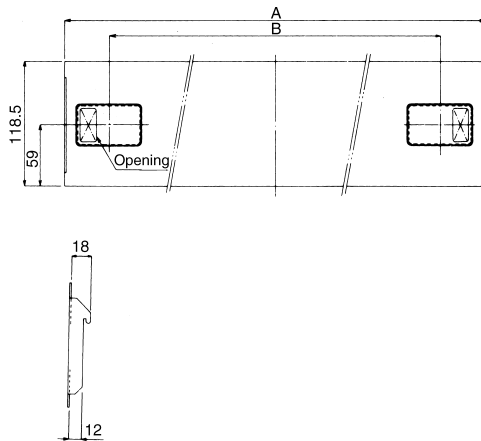
Air Discharge Blind Panel

This is the parts which closes the lower discharge outlet when the unit is used as a front discharge style.

Specifications

Items	Model	KDBJ52F56W	KDBJ52F80W
External color		White	White
External Dimension (mm)	T	18	
	W	1,126	1,326
	D	119	
Materials		Steel plate	
Contents		Outlet decoration panel assembly, Decoration panel suspension plate, Name Plate, Caution plate set board	
Applied Decoration Panel		BYK45FJW1	BYK71FJW1
Applicable Models		25 · 32 · 40 Class	63 Class

External dimension

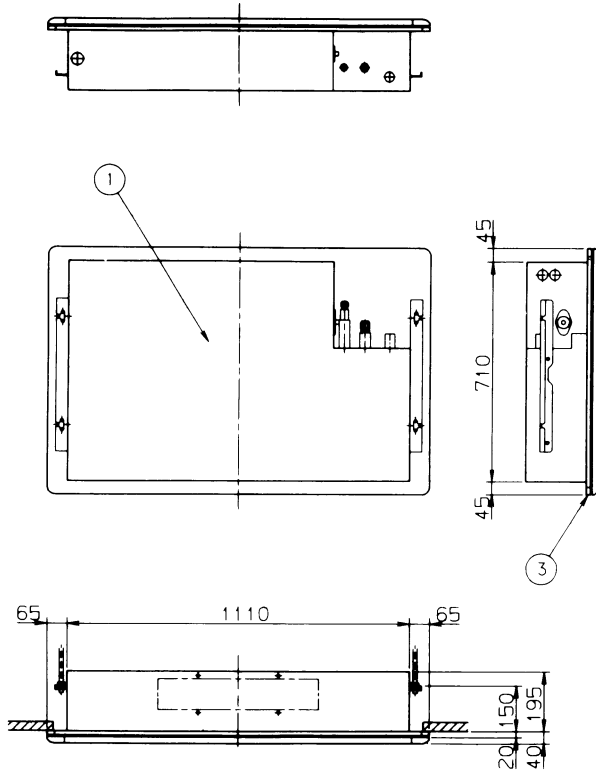


Model	A	B
KDBJ52F56	1125.5	1040
KDBJ52F80	1325.5	1240

Dimensions with the Optional Accessories

Panel Spacer

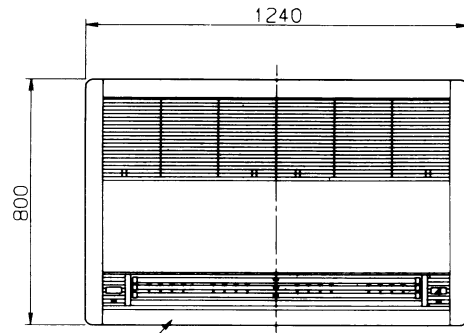
■ FXKQ25~40MA



Optional panel spacer

KPBJ52F56W White 10Y 9/0.5

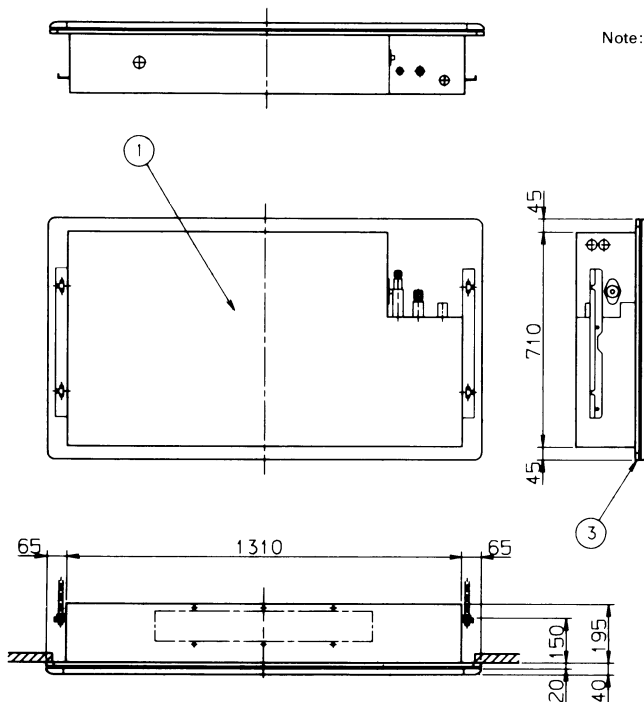
Note: When other optional kit is installed, refer to the installation drawing of its optional kit.



Number	Name	Description
3	Panel spacer	
2	Decoration panel	
1	Indoor unit	

JC : DU825-219A

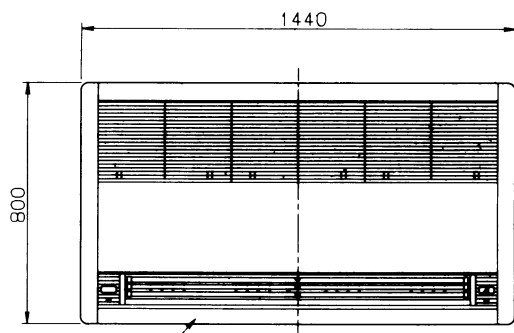
■ FXKQ63MA



Optional panel spacer

KPBJ52F80W White 10Y 9/0.5

Note: When other optional kit is installed, refer to the installation drawing of its optional kit.



Number	Name	Description
3	Panel spacer	
2	Decoration panel	
1	Indoor unit	

JC : DU827-242A

FXDQ-PB, FXDQ-NB

Slim Ceiling Mounted Duct Type

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1. Features

Slim Ceiling Mounted Duct Type



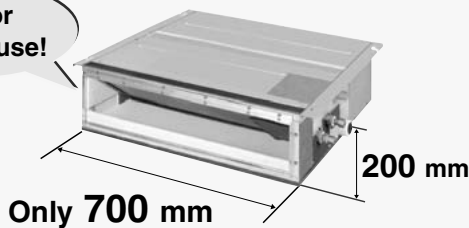
Slim design, quietness and static pressure switching

Suited to use in drop-ceilings!

New FXDQ20PB/FXDQ25PB/FXDQ32PB

- Only 700 mm in width and 23 kg in weight, this model is suitable to install in limited spaces like drop-ceilings in hotels.

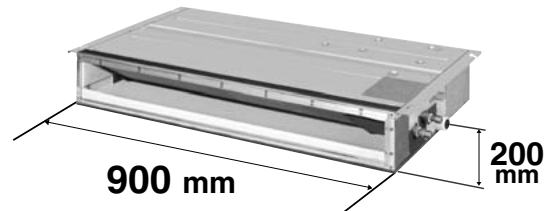
Great for hotel use!



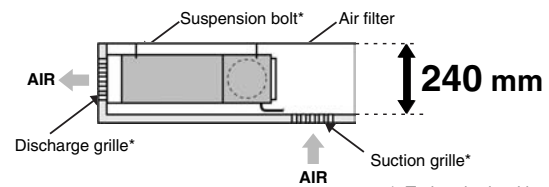
New

FXDQ40NB/FXDQ50NB/
FXDQ63NB

- Only 200 mm in height, this model can be installed in rooms with as little as 240 mm depth between the drop-ceiling and ceiling slab.



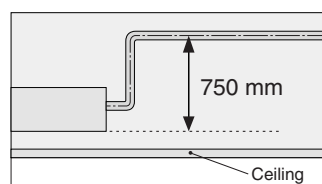
* 1,100 mm in width for the FXDQ63NB model.



*: To be obtained locally

- External static pressure selectable by remote controller switching make this indoor unit a very comfortable and flexible model.
10 Pa-30 Pa/factory set: 10 Pa for FXDQ-PB models.
15 Pa-44 Pa/factory set: 15 Pa for FXDQ-NB models.

- FXDQ-PB and FXDQ-NB models are available in two types to suit different installation conditions
FXDQ-PBVE, FXDQ-NBVE: with a drain pump (750 mm lift) as a standard accessory
FXDQ-P/NBVET: without a drain pump



- New** • Control of the airflow rate has been improved from 2-step to 3-step control.

- New** • Low operation sound level

FXDQ-PB/NB	20	25	32	40	50	63
Sound level (HH/H/L)	33/31/29	33/31/29	33/31/29	34/32/30	35/33/31	36/34/32

*The values of operation sound level represent those for rear-suction operation.
Sound level values for bottom-suction operation can be obtained by adding 5 dB(A).
*Values are based on the following conditions:
FXDQ-PB: external static pressure of 10 Pa; FXDQ-NB: external static pressure of 15 Pa.

2. Specifications

2.1 FXDQ-PB

Slim Ceiling Mounted Duct Type (VE: with Drain Pump, VET without Drain Pump)

Model		FXDQ20PBVE (T)	FXDQ25PBVE (T)	FXDQ32PBVE (T)
★1 Cooling Capacity (19.5°CWB)	kcal/h	2,000	2,500	3,200
	Btu/h	7,800	9,900	12,600
	kW	2.3	2.9	3.7
★2 Cooling Capacity (19.0°CWB)	kW	2.2	2.8	3.6
Casing		Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (HxWxD)		mm	200x700x620	200x700x620
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	2×12×1.5	3×12×1.5
	Face Area	m ²	0.126	0.126
Fan	Model		—	—
	Type		Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	62×1	62×1
	Air Flow Rate (HH/H/L)	m ³ /min	8.0/7.2/6.4	8.0/7.2/6.4
	★4 External Static Pressure	Pa	30-10	30-10
	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		Foamed Polyethylene	Foamed Polyethylene	Foamed Polyethylene
Air Filter		Removal / Washable / Mildew Proof	Removal / Washable / Mildew Proof	Removal / Washable / Mildew Proof
Piping Connections	Liquid Pipes	mm	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)
	Gas Pipes	mm	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)
	Drain Pipe	mm	VP20 (External Dia. 26 Internal Dia. 20)	VP20 (External Dia. 26 Internal Dia. 20)
Machine Weight (Mass)		kg	23	23
★5 Sound Pressure Level (HH/H/L)		dBA	33/31/29	33/31/29
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, Drain Hose, Sealing Pads, Clamps, Washers, Insulation for Fitting, Clamp Metal, Washer Fixing Plate, Screws for Duct Flanges, Air Filter, (Product Quality Certificate ★6)	Operation Manual, Installation Manual, Drain Hose, Sealing Pads, Clamps, Washers, Insulation for Fitting, Clamp Metal, Washer Fixing Plate, Screws for Duct Flanges, Air Filter, (Product Quality Certificate ★6)	Operation Manual, Installation Manual, Drain Hose, Sealing Pads, Clamps, Washers, Insulation for Fitting, Clamp Metal, Washer Fixing Plate, Screws for Duct Flanges, Air Filter, (Product Quality Certificate ★6)
Drawing No.		3D060921A		

Note:

- ★1 Indoor temp.: 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
- ★2 Indoor temp.: 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
- 3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- ★4 External static pressure is changeable to set by the remote controller. This pressure means "High static pressure - Standard static pressure". (Factory setting is 10 Pa.)
- ★5 The operation sound levels are the conversion values in anechoic chamber. In practice, the sound tend to be larger than the specified values due to ambient noise or reflections.
When the place of suction is changed to the bottom suction, the sound level will increase by approx. 5dBA.
- ★6 FXDQ20 / 25 / 32PBVE only.
- 7 Refer to page 176 for Fan Motor Input.

Conversion Formulae
kcal/h=kW×860
Btu/h=kW×3412
cfm=m ³ /min×35.3

5

2.2 FXDQ-NB

Slim Ceiling Mounted Duct Type (VE: with Drain Pump, VET without Drain Pump)

Model		FXDQ40NBVE(T)	FXDQ50NBVE(T)	FXDQ63NBVE(T)
★1 Cooling Capacity (19.5°CWB)	kcal/h	4,000	5,000	6,300
	Btu/h	16,000	19,800	24,900
	kW	4.7	5.8	7.3
★2 Cooling Capacity (19.0°CWB)	kW	4.5	5.6	7.1
Casing Color		Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (HxWxD)		mm 200x900x620	200x900x620	200x1100x620
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm 3×12×1.5	3×12×1.5	3×12×1.5
	Face Area	m ² 0.176	0.176	0.227
Fan	Model	—	—	—
	Type	Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W 62×1	130×1	130×1
	Air Flow Rate (HH/H/L)	m ³ /min 10.5/9.5/8.5	12.5/11.0/10.0	16.5/14.5/13.0
	★4 External Static Pressure	Pa 44-15	44-15	44-15
	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		Foamed Polyethylene	Foamed Polyethylene	Foamed Polyethylene
Air Filter		Removal / Washable / Mildew Proof	Removal / Washable / Mildew Proof	Removal / Washable / Mildew Proof
Piping Connections	Liquid Pipes	mm φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ9.5 (Flare Connection)
	Gas Pipes	mm φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ15.9 (Flare Connection)
	Drain Pipe	mm VP20 (External Dia. 26 Internal Dia. 20)	VP20 (External Dia. 26 Internal Dia. 20)	VP20 (External Dia. 26 Internal Dia. 20)
Machine Weight (Mass)		kg 27	28	31
★5 Sound Pressure Level (HH/H/L)		dBA 34/32/30	35/33/31	36/34/32
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, Drain Hose, Sealing Pads, Clamps, Washers, Insulation for Fitting, Clamp Metal, Washer Fixing Plate, Screws for Duct Flanges, Air Filter, (Product Quality Certificate ★6)	Operation Manual, Installation Manual, Drain Hose, Sealing Pads, Clamps, Washers, Insulation for Fitting, Clamp Metal, Washer Fixing Plate, Screws for Duct Flanges, Air Filter, (Product Quality Certificate ★6)	Operation Manual, Installation Manual, Drain Hose, Sealing Pads, Clamps, Washers, Insulation for Fitting, Clamp Metal, Washer Fixing Plate, Screws for Duct Flanges, Air Filter, (Product Quality Certificate ★6)
Drawing No.		3D060921A		

Note:

- ★1 Indoor temp.: 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
- ★2 Indoor temp.: 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
- 3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- ★4 External static pressure is changeable to set by the remote controller. This pressure means "High static pressure - Standard static pressure". (Factory setting is 15 Pa.)
- ★5 The operation sound levels are the conversion values in anechoic chamber. In practice, the sound tend to be larger than the specified values due to ambient noise or reflections.
When the place of suction is changed to the bottom suction, the sound level will increase by approx. 5dBA.
- ★6 FXDQ40 / 50 / 63NBVE only.
- 7 Refer to page 176 for Fan Motor Input.

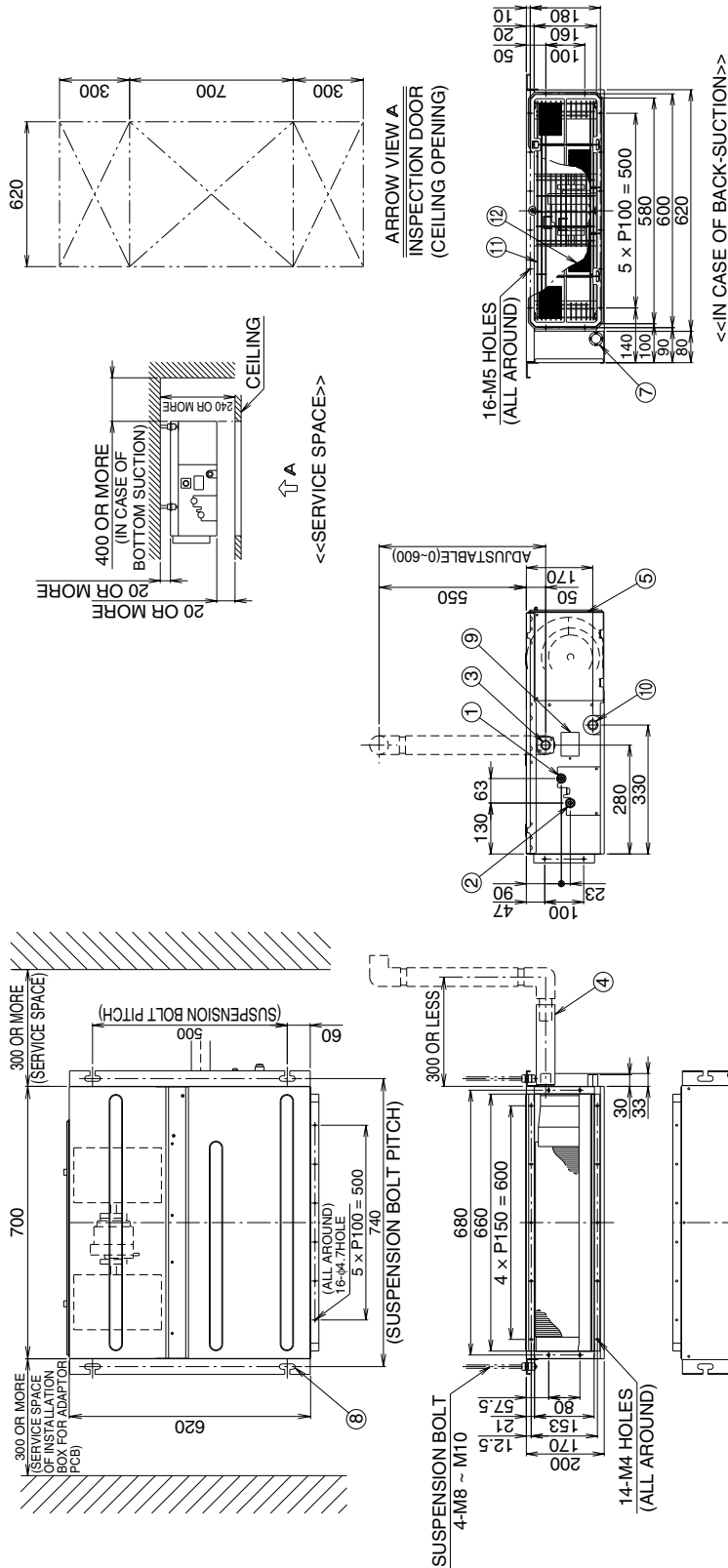
Conversion Formulae
kcal/h=kW×860
Btu/h=kW×3412
cfm=m ³ /min×35.3

3. Dimensions

3.1 FXDQ-PB

FXDQ20 / 25 / 32PBVE (with Drain Pump)

Unit (mm)



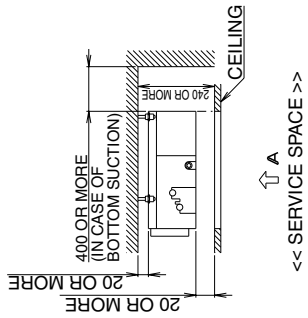
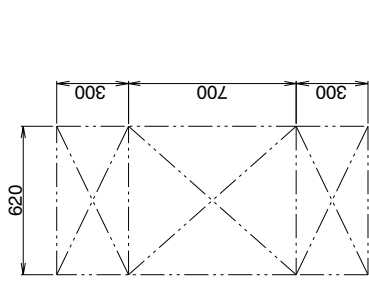
NUMBER	NAME	DESCRIPTION
12	AIR FILTER (ACCESSORY)	
11	PROTECTION NET	
10	SOCKET FOR DRAIN	
9	INSPECTION DOOR	
8	SUSPENSION BRACKET	
7	POWER SUPPLY CONNECTION	
6	TRANSMISSION WIRING CONNECTION	
5	CONTROL BOX	
4	DRAIN HOSE (ACCESSORY) I. D. ϕ 25 (OUTLET)	
3	DRAIN PIPE CONNECTION VP20 (O. D. ϕ 26/I. D. ϕ 20)	
2	GAS PIPE CONNECTION ϕ 12.7 (FLARE CONNECTION)	
1	LIQUID PIPE CONNECTION ϕ 6.4 (FLARE CONNECTION)	

NOTE) 1. IN CASE OF BACK-SUCTION, MOUNT CHAMBER COVER TO BOTTOM SIDE OF THE UNIT.
 IN CASE OF BOTTOM-SUCTION, MOUNT CHAMBER COVER TO BACK SIDE OF THE UNIT.
 2. LOCATION OF UNIT'S NAME PLATE: CONTROL BOX COVER
 3. MOUNT THE AIR FILTER AT THE SUCTION SIDE. (SELECT ITS COLOR/METHOD (GRAVITY METHOD))
 IT CAN NOT BE EQUIPPED WITH AIR FILTER (ACCESSORY) WHEN CONNECTING DUCT TO SUCTION SIDE.

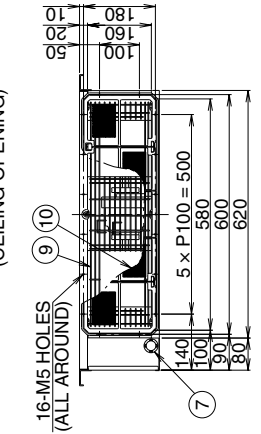
3D049799B

FXDQ20 / 25 / 32PBVET (without Drain Pump)

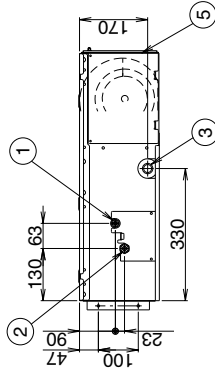
Unit (mm)



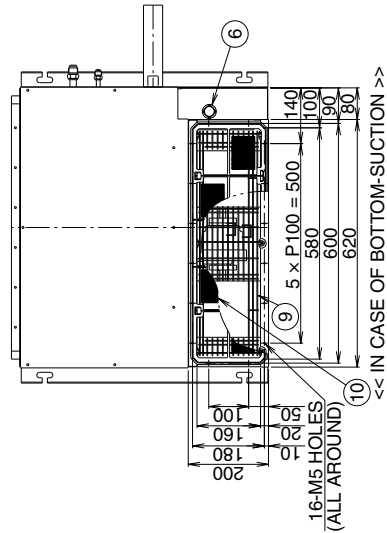
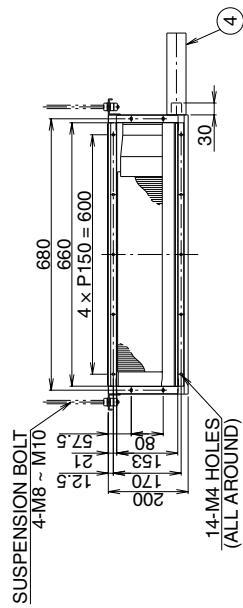
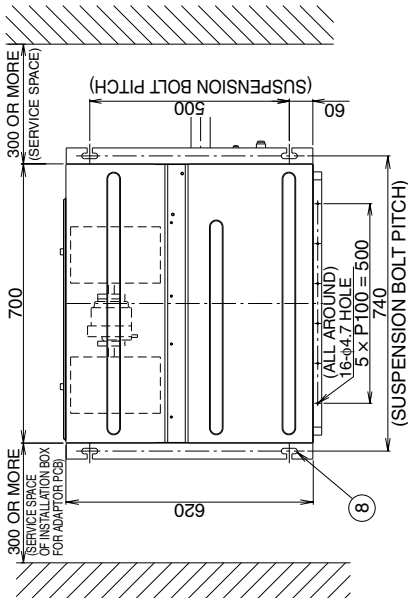
ARROW VIEW A
INSPECTION DOOR
(CEILING OPENING)



<< IN CASE OF BACK-SUCTION >>



NOTE) 1. IN CASE OF BACK-SUCTION, MOUNT CHAMBER COVER TO BOTTOM SIDE OF THE UNIT.
 IN CASE OF BOTTOM-SUCTION, MOUNT CHAMBER COVER TO BACK SIDE OF THE UNIT.
 2. LOCATION OF UNIT'S NAME PLATE: CONTROL BOX COVER
 3. MOUNT THE AIR FILTER AT THE SUCTION SIDE.
 (SELECT ITS COLOR METHOD (GRAVITY METHOD) 50% OR MORE.)
 IT CAN NOT BE EQUIPPED WITH AIR FILTER (ACCESSORY)
 WHEN CONNECTING DUCT TO SUCTION SIDE.



<< IN CASE OF BOTTOM-SUCTION >>

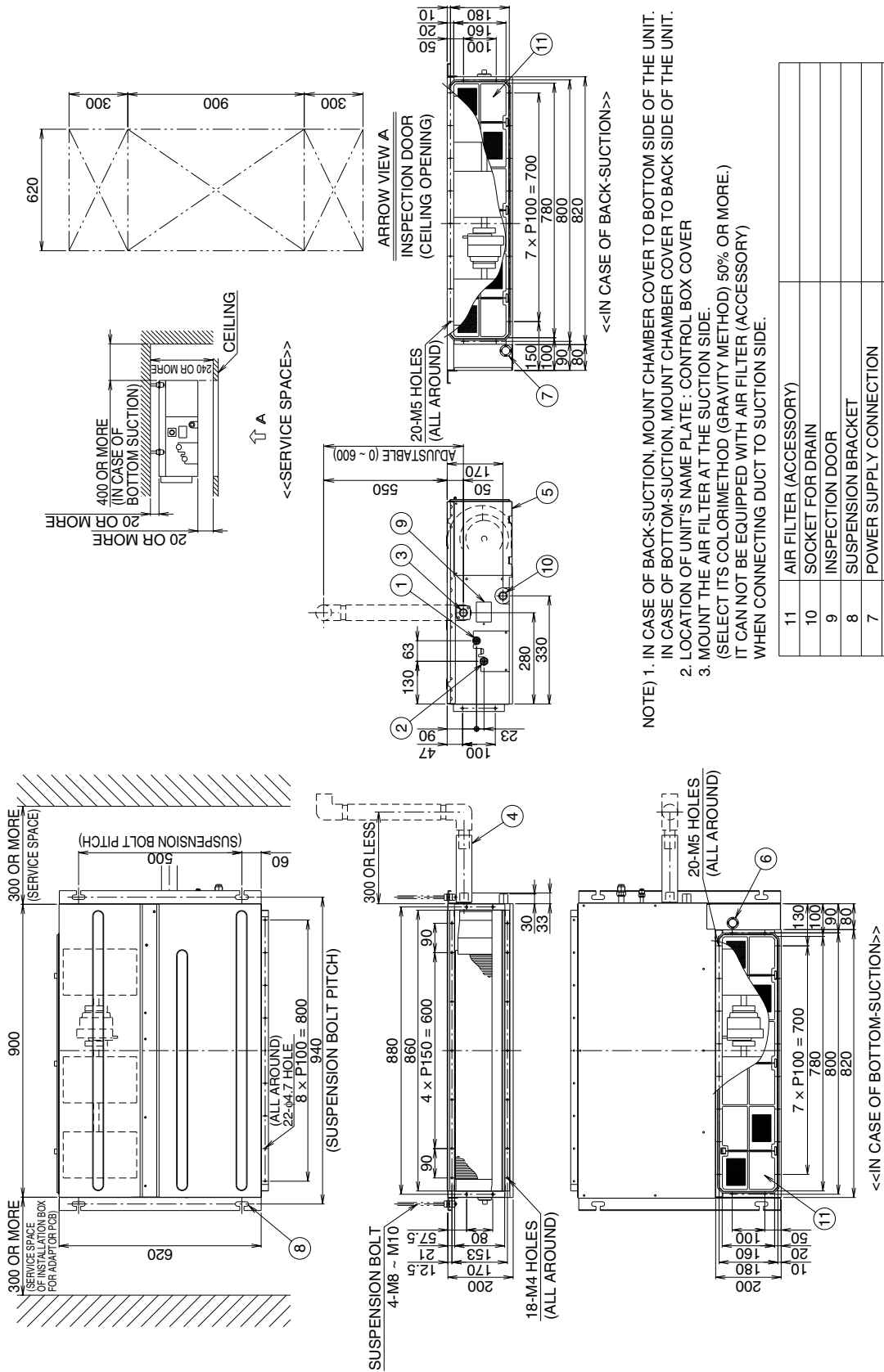
NUMBER	NAME	DESCRIPTION
10	AIR FILTER (ACCESSORY)	
9	PROTECTION NET	
8	SUSPENSION BRACKET	
7	POWER SUPPLY CONNECTION	
6	TRANSMISSION WIRING CONNECTION	
5	CONTROL BOX	
4	DRAIN HOSE (ACCESSORY)	I. D. φ25(OUTLET)
3	SOCKET FOR DRAIN	VP20 (O. D. φ26/I. D. φ20)
2	GAS PIPE CONNECTION	φ12.7 (FLARE CONNECTION)
1	LIQUID PIPE CONNECTION	φ6.4 (FLARE CONNECTION)

3D050732A

3.2 FXDQ-NB

FXDQ40 / 50NBVE (with Drain Pump)

Unit (mm)



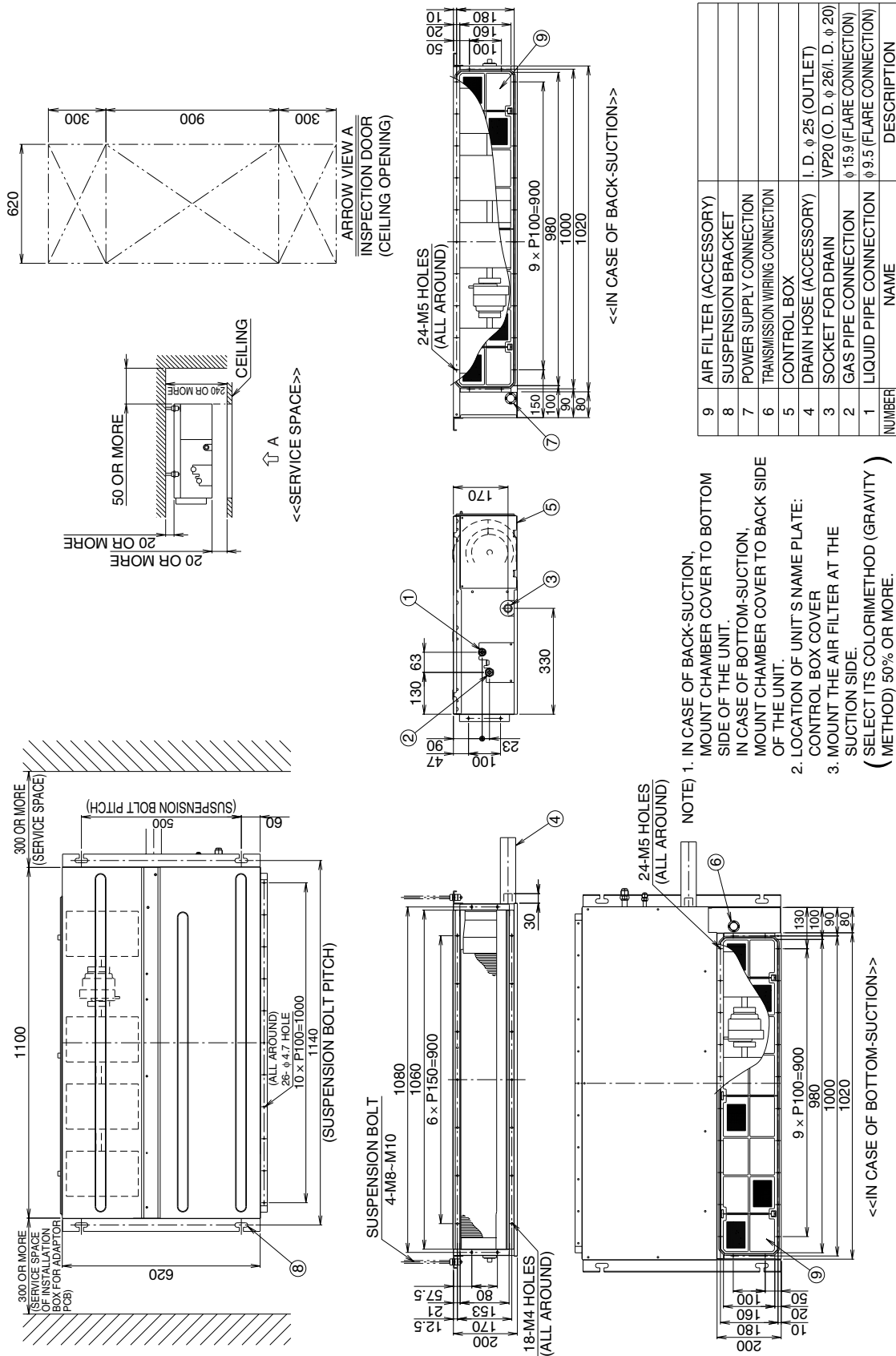
NOTE) 1. IN CASE OF BACK-SUCTION, MOUNT CHAMBER COVER TO BOTTOM SIDE OF THE UNIT.
 IN CASE OF BOTTOM-SUCTION, MOUNT CHAMBER COVER TO BACK SIDE OF THE UNIT.
 2. LOCATION OF UNIT'S NAME PLATE : CONTROL BOX COVER
 3. MOUNT THE AIR FILTER AT THE SUCTION SIDE.
 (SELECT ITS COLOR/METHOD (GRAVITY METHOD) 50% OR MORE.)
 IT CAN NOT BE EQUIPPED WITH AIR FILTER (ACCESSORY)
 WHEN CONNECTING DUCT TO SUCTION SIDE.

NUMBER	NAME	DESCRIPTION
11	AIR FILTER (ACCESSORY)	
10	SOCKET FOR DRAIN	
9	INSPECTION DOOR	
8	SUSPENSION BRACKET	
7	POWER SUPPLY WIRING CONNECTION	
6	TRANSMISSION WIRING CONNECTION	
5	CONTROL BOX	
4	DRAIN HOSE (ACCESSORY)	I. D. φ 25 (OUTLET)
3	DRAIN PIPE CONNECTION	VP20 (O. D. φ 26/I. D. φ 20)
2	GAS PIPE CONNECTION	φ 12.7 (FLARE CONNECTION)
1	LIQUID PIPE CONNECTION	φ 6.4 (FLARE CONNECTION)

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FXDQ63NBVET (without Drain Pump)

Unit (mm)

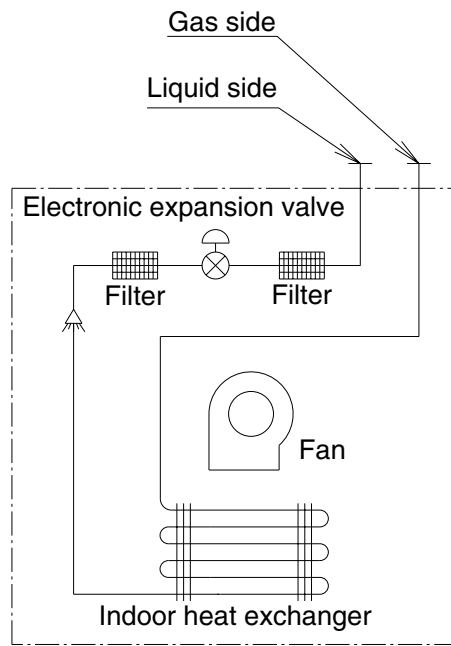


NUMBER	NAME	DESCRIPTION
9	AIR FILTER (ACCESSORY)	
8	SUSPENSION BRACKET	
7	POWER SUPPLY CONNECTION	
6	TRANSMISSION WIRING CONNECTION	
5	CONTROL BOX	
4	DRAIN HOSE (ACCESSORY)	I. D. ϕ 25 (OUTLET)
3	SOCKET FOR DRAIN	VP20 (O. D. ϕ 26/I. D. ϕ 20)
2	GAS PIPE CONNECTION	ϕ 15.9 (FLARE CONNECTION)
1	LIQUID PIPE CONNECTION	ϕ 9.5 (FLARE CONNECTION)

- NOTE) 1. IN CASE OF BACK-SUCTION, MOUNT CHAMBER COVER TO BOTTOM SIDE OF THE UNIT. IN CASE OF BOTTOM-SUCTION, MOUNT CHAMBER COVER TO BACK SIDE OF THE UNIT.
2. LOCATION OF UNIT'S NAME PLATE: CONTROL BOX COVER
3. MOUNT THE AIR FILTER AT THE SUCTION SIDE. (SELECT ITS COLOR/METHOD (GRAVITY METHOD) 50% OR MORE. IT CAN NOT BE EQUIPPED WITH AIR FILTER (ACCESSORY) WHEN CONNECTING DUCT TO SUCTION SIDE.

3D049702A

4. Piping Diagrams



4D060927

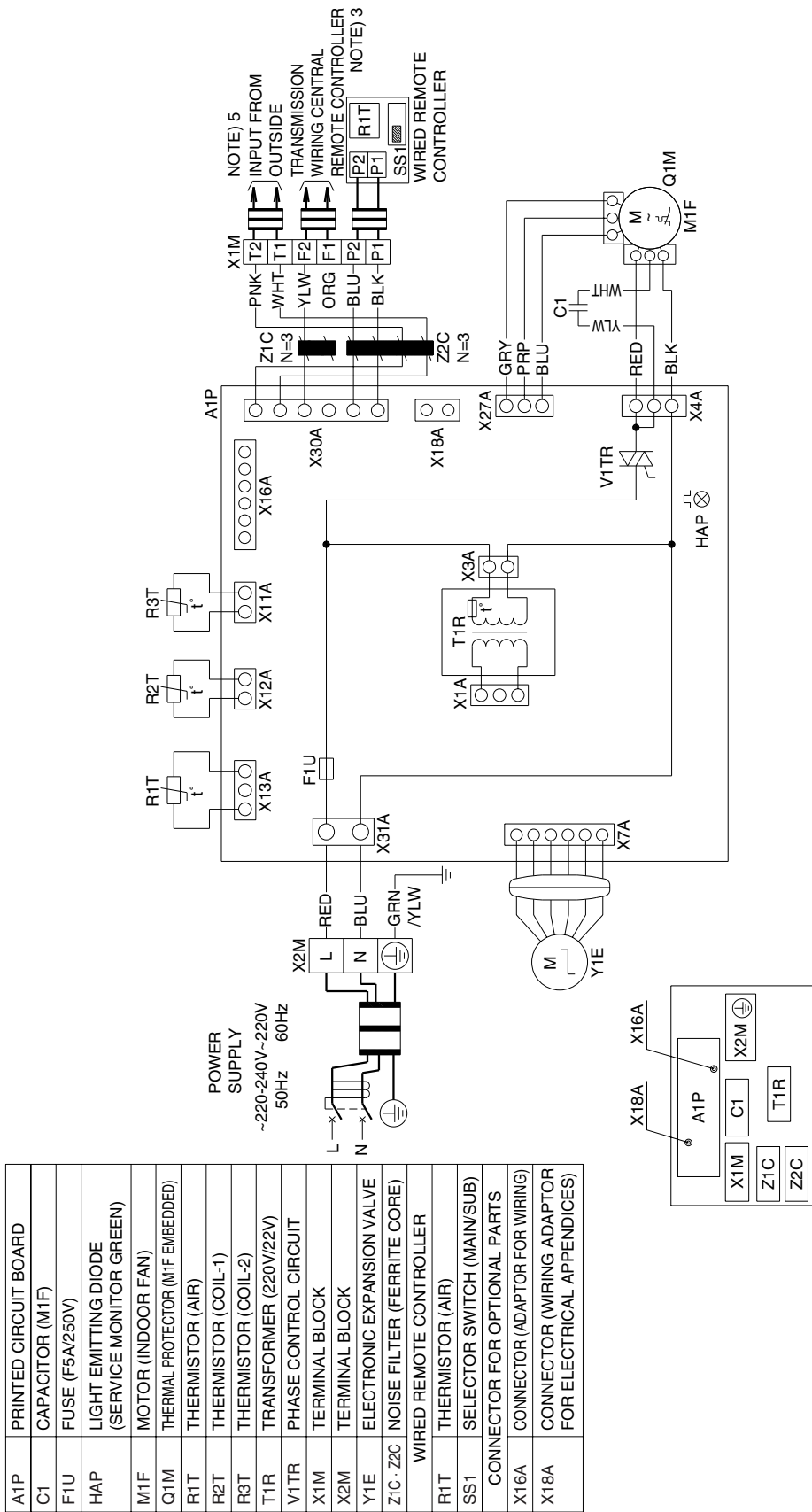
5

■ Refrigerant pipe connection port diameters

(mm)

Model	Gas	Liquid
FXDQ20 / 25 / 32PBVE(T), 40 / 50NBVE(T)	φ12.7	φ6.4
FXDQ63NBVE(T)	φ15.9	φ9.5

FXDQ20 / 25 / 32PBVET, 40 / 50 / 63NBVET (without Drain Pump)



A1P	PRINTED CIRCUIT BOARD
C1	CAPACITOR (M1F)
F1U	FUSE (F5A/250V)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR GREEN)
M1F	MOTOR (INDOOR FAN)
Q1M	THERMAL PROTECTOR (M1F EMBEDDED)
R1T	THERMISTOR (AIR)
R2T	THERMISTOR (COIL-1)
R3T	THERMISTOR (COIL-2)
T1R	TRANSFORMER (220V/22V)
V1TR	PHASE CONTROL CIRCUIT
X1M	TERMINAL BLOCK
X2M	TERMINAL BLOCK
Y1E	ELECTRONIC EXPANSION VALVE
Z1C, Z2C	NOISE FILTER (FERRITE CORE)
WIRED REMOTE CONTROLLER	
R1T	THERMISTOR (AIR)
SS1	SELECTOR SWITCH (MAIN/SUB)
CONNECTOR FOR OPTIONAL PARTS	
X16A	CONNECTOR (ADAPTOR FOR WIRING)
X18A	CONNECTOR (WIRING ADAPTOR FOR ELECTRICAL APPENDICES)

- NOTES)
1. □ : TERMINAL
 2. □ : CONNECTOR
 3. □ : FIELD WIRING

3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
 4. REMOTE CONTROLLER MODEL VARIES ACCORDING TO THE COMBINATION SYSTEM. CONFIRM ENGINEERING MATERIALS AND CATALOGS, ETC. BEFORE CONNECTING.
 5. WHEN 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 THE UNIT.
 6. SYMBOLS SHOW AS FOLLOWS: RED : RED BLU : BLUE PNK : PINK ORG : ORANGE GRN : GREEN

3D060548

6. Electric Characteristics

Model	Power supply					IFM		Input (W)	
	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
FXDQ20PBVE	50	220-240V	Max. 264V Min. 198V	0.8	15	0.062	0.6	86	67
FXDQ25PBVE				0.8	15	0.062	0.6	86	67
FXDQ32PBVE				0.8	15	0.062	0.6	89	70
FXDQ40NBVE				1.0	15	0.062	0.8	160	147
FXDQ50NBVE				1.0	15	0.13	0.8	165	152
FXDQ63NBVE				1.1	15	0.13	0.9	181	168
FXDQ20PBVET	50	220-240V	Max. 264V Min. 198V	0.7	15	0.062	0.6	67	67
FXDQ25PBVET				0.7	15	0.062	0.6	67	67
FXDQ32PBVET				0.7	15	0.062	0.6	70	70
FXDQ40NBVET				1.0	15	0.062	0.8	147	147
FXDQ50NBVET				1.0	15	0.13	0.8	152	152
FXDQ63NBVET				1.1	15	0.13	0.9	168	168

Symbols :

- MCA : Min. Circuit Amps (A)
 MFA : Max. Fuse Amps (See note 5)
 KW : Fan Motor Rated Output(kW)
 FLA : Full Load Amps(A)
 IFM : Indoor Fan Motor

Note :

- Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
- Maximum allowable voltage unbalance between phases is 2%.
- MCA/MFA
 $MCA = 1.25 \times FLA$
 $MFA \leq 4 \times FLA$
 (Next lower standard fuse rating. Min. 15A)
- Select wire size based on the MCA.
- Instead of fuse, use circuit breaker.

C : 4D060922

7. Capacity Tables

7.1 FXDQ-PB

[50Hz]

Cooling capacity

Unit Size	Indoor air temp.														
	14.0°CWB 20°CDB		16.0°CWB 23°CDB		18.0°CWB 26°CDB		19.0°CWB 27°CDB		20.0°CWB 28°CDB		22.0°CWB 30°CDB		24.0°CWB 32°CDB		
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	
20	100	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	120	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	140	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	160	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	180	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	200	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	210	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	230	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	250	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	270	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	290	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	310	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
25	100	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	120	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	140	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	160	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	180	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	200	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	210	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	230	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	250	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	270	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	290	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
	310	1.5	1.4	1.8	1.6	2.1	1.8	2.2	1.9	2.3	1.9	2.6	1.8	2.9	2.0
32	100	1.9	1.6	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.2	3.4	2.2	3.7	2.3
	120	1.9	1.6	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.2	3.4	2.2	3.7	2.3
	140	1.9	1.6	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.2	3.4	2.2	3.7	2.3
	160	1.9	1.6	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.2	3.4	2.2	3.7	2.3
	180	1.9	1.6	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.2	3.4	2.2	3.7	2.3
	200	1.9	1.6	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.2	3.4	2.2	3.7	2.3
	210	1.9	1.6	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.2	3.4	2.2	3.7	2.3
	230	1.9	1.6	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.2	3.4	2.2	3.7	2.3
	250	1.9	1.6	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.2	3.4	2.2	3.7	2.3
	270	1.9	1.6	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.2	3.4	2.2	3.7	2.3
	290	1.9	1.6	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.2	3.4	2.2	3.7	2.3
	310	1.9	1.6	2.3	1.9	2.6	2.1	2.8	2.1	3.0	2.2	3.4	2.2	3.7	2.3
Total capacity ; kW	100	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	120	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	140	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	160	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	180	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	200	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	210	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	230	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	250	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	270	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	290	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	310	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
Sensible heat capacity ; kW	100	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	120	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	140	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	160	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	180	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	200	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	210	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	230	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	250	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	270	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	290	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9
	310	2.4	2.0	2.9	2.3	3.4	2.4	3.6	2.6	3.8	2.7	4.3	2.8	4.7	2.9

TC
SHC

Refer to Outdoor Unit Capacity Tables : on page 491-- 552-, for the actual performance data of each indoor and outdoor unit combination.

7.2 FXDQ-NB

[50Hz]

Cooling capacity

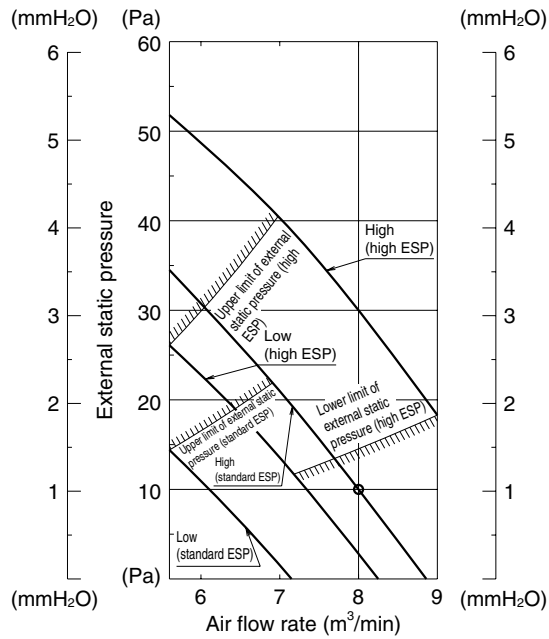
Unit Size	Indoor air temp.													
	14.0°CWB 20°CDB		16.0°CWB 23°CDB		18.0°CWB 26°CDB		19.0°CWB 27°CDB		20.0°CWB 28°CDB		22.0°CWB 30°CDB		24.0°CWB 32°CDB	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
40	10.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.8	3.2	5.4	3.3	5.9
	12.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.8	3.2	5.4	3.3	5.9
	14.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.8	3.2	5.4	3.3	5.9
	16.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.8	3.2	5.4	3.3	5.9
	18.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.8	3.2	5.4	3.3	5.9
	20.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.8	3.2	5.4	3.3	5.9
	21.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.8	3.2	5.4	3.3	5.9
	23.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.8	3.2	5.4	3.3	5.9
	25.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.8	3.2	5.4	3.3	5.9
	27.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.8	3.2	5.4	3.3	5.9
	31.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.8	3.2	5.4	3.3	5.9
	35.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.8	3.2	5.4	3.3	5.9
37.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.7	3.2	4.9	3.1	4.0	
39.0	3.0	2.5	3.6	2.8	4.2	3.3	4.5	3.3	4.7	3.2	4.9	3.1	4.0	
50	10.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	6.0	4.0	6.7	4.2	7.4
	12.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	6.0	4.0	6.7	4.2	7.4
	14.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	6.0	4.0	6.7	4.2	7.4
	16.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	6.0	4.0	6.7	4.2	7.4
	18.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	6.0	4.0	6.7	4.2	7.4
	20.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	6.0	4.0	6.7	4.2	7.4
	21.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	6.0	4.0	6.6	4.2	6.9
	23.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	6.0	4.0	6.6	4.2	6.9
	25.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	6.0	4.0	6.6	4.2	6.9
	27.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	6.0	4.0	6.6	4.2	6.9
	31.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	6.0	4.0	6.3	4.0	6.5
	33.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	6.0	4.0	6.1	4.0	6.3
35.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	5.9	4.0	6.0	3.9	6.2	
37.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	5.8	4.0	5.9	6.1	3.7	
39.0	3.8	3.1	4.5	3.5	5.2	3.9	5.6	4.0	5.7	3.9	5.8	6.0	3.7	
63	10.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.6	4.9	8.5	5.1	9.3
	12.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.6	4.9	8.5	5.1	9.2
	14.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.6	4.9	8.5	5.1	9.2
	16.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.6	4.9	8.5	5.1	9.2
	18.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.6	4.9	8.5	5.1	9.2
	20.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.6	4.9	8.5	5.1	9.2
	21.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.6	4.9	8.5	5.1	9.2
	23.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.6	4.9	8.4	5.1	9.2
	25.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.6	4.9	8.3	5.0	9.2
	27.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.6	4.9	8.1	5.0	9.2
	29.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.6	4.9	8.0	4.9	9.2
	31.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.6	4.9	7.9	4.9	9.2
35.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.6	4.9	7.9	4.9	9.2	
37.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.5	4.8	7.5	4.9	9.2	
39.0	4.8	3.8	5.7	4.3	6.6	4.8	7.1	4.9	7.4	4.7	7.4	4.7	9.2	

TC Total capacity ; kW
SHC Sensible heat capacity ; kW

Refer to Outdoor Unit Capacity Tables : on page 491 ~, 552~, for the actual performance data of each indoor and outdoor unit combination.

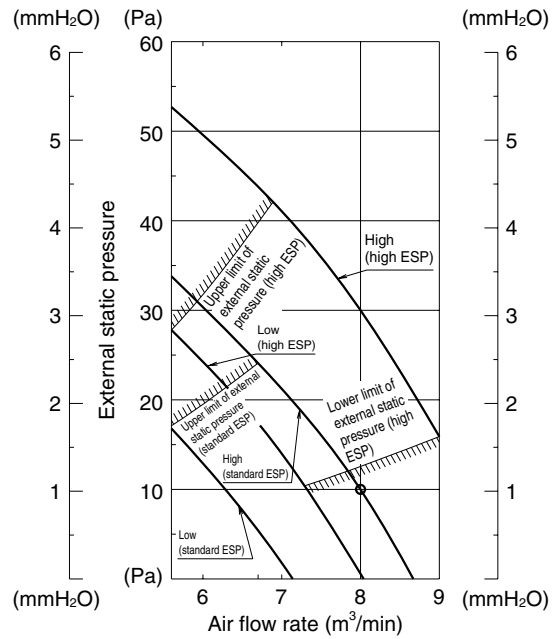
8. Fan Performances

8.1 FXDQ-PB FXDQ20 / 25PBVE(T)



3D052156A

FXDQ32PBVE(T)



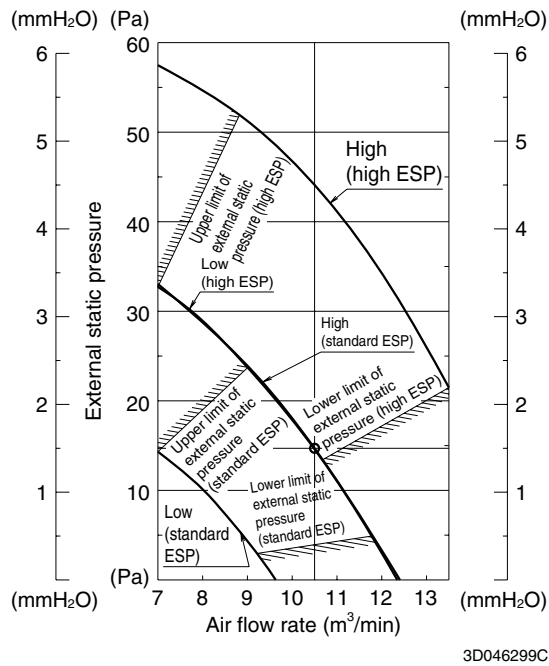
3D052157A

Note:

1. The remote controller can be used to switch between “HH”, “H” and “L”.
2. The air flow is set to “standard” before leaving the factory.
It is possible to switch between “standard ESP” and “high ESP” by the remote controller.

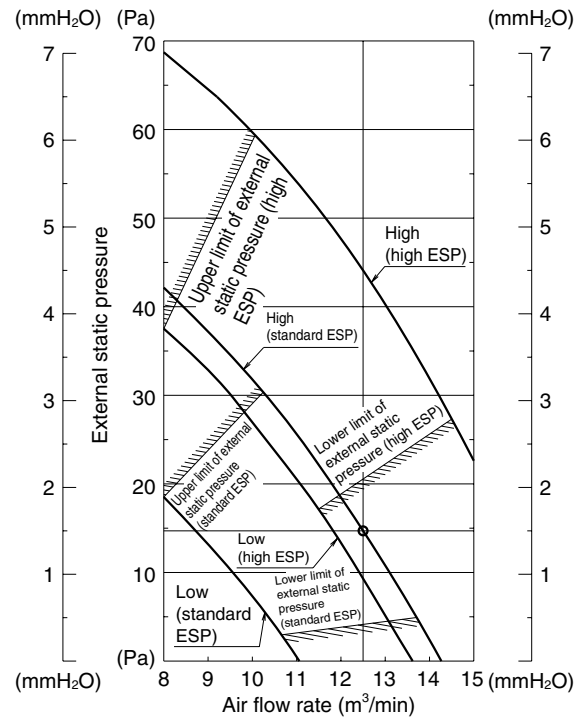
8.2 FXDQ-NB

FXDQ40NBVE(T)



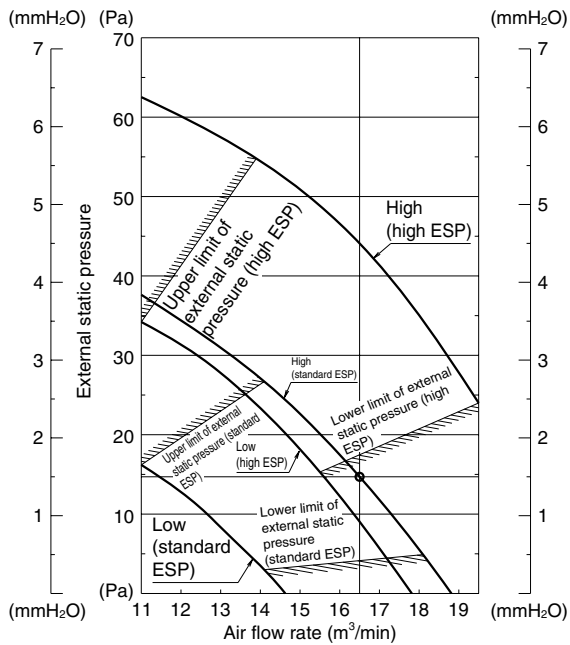
3D046299C

FXDQ50NBVE(T)



3D046300C

FXDQ63NBVE(T)



3D046301C

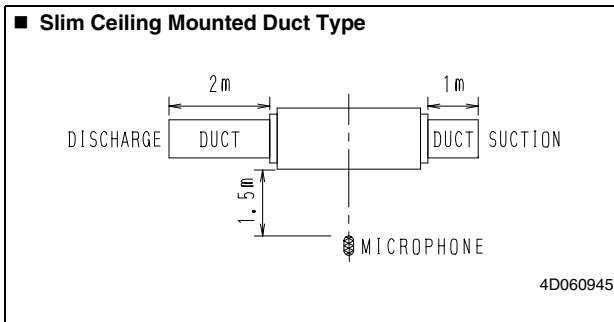
Note:

1. The remote controller can be used to switch between “HH”, “H” and “L”.
2. The air flow is set to “standard” before leaving the factory.
It is possible to switch between “standard ESP” and “high ESP” by the remote controller.

9. Sound Levels

9.1 FXDQ-PB

Overall



Note:

1. The operating conditions are assumed to be standard (JIS conditions)
2. These operating values were obtained in a dead room (conversion values).
Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

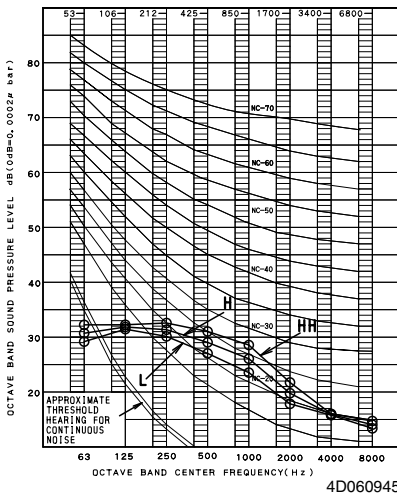
dBA

Model	220~240V 50Hz		
	HH	H	L
FXDQ20PBVE(T)	33	31	29
FXDQ25PBVE(T)	33	31	29
FXDQ32PBVE(T)	33	31	29

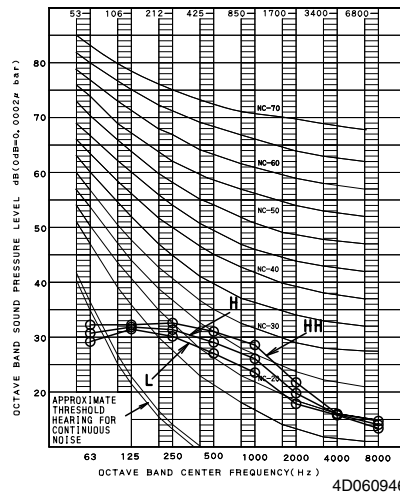
Octave Band Level

○ — ○ 220V~240V 50Hz

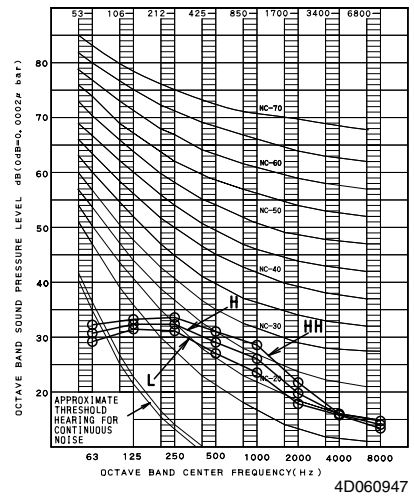
FXDQ20PBVE(T)



FXDQ25PBVE(T)

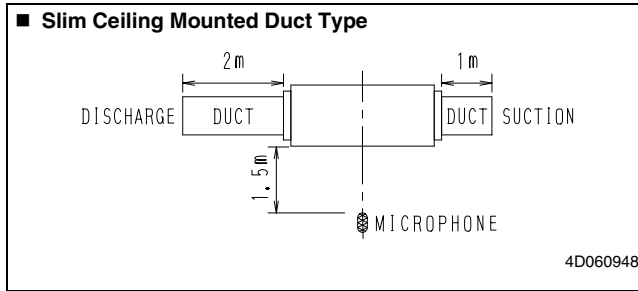


FXDQ32PBVE(T)



9.2 FXDQ-NB

Overall



Note:

1. The operating conditions are assumed to be standard (JIS conditions).
2. These operating values were obtained in a dead room (conversion values).
Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

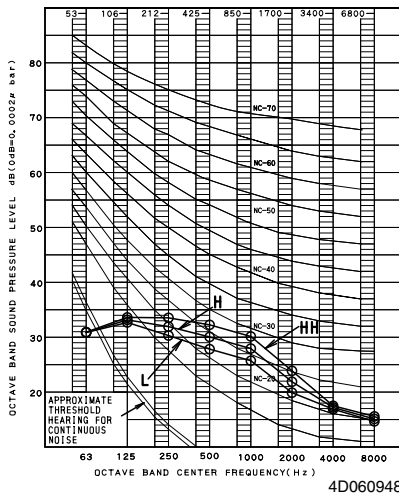
dBA

Model	220~240V 50Hz		
	HH	H	L
FXDQ40NBVE(T)	34	32	30
FXDQ50NBVE(T)	35	33	31
FXDQ63NBVE(T)	36	34	32

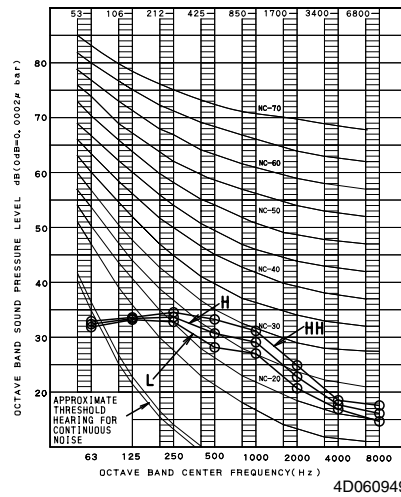
Octave Band Level

○ — ○ 220V~240V 50Hz

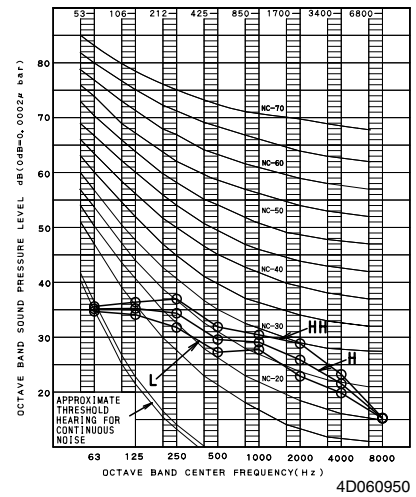
FXDQ40NBVE(T)



FXDQ50NBVE(T)



FXDQ63NBVE(T)

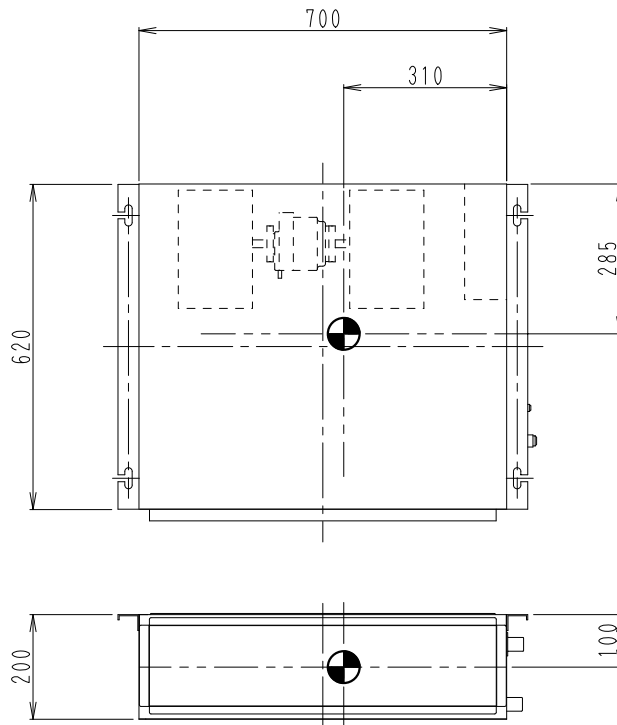


10. Center of Gravity

10.1 FXDQ-PB

FXDQ20 / 25 / 32PBVE(T)

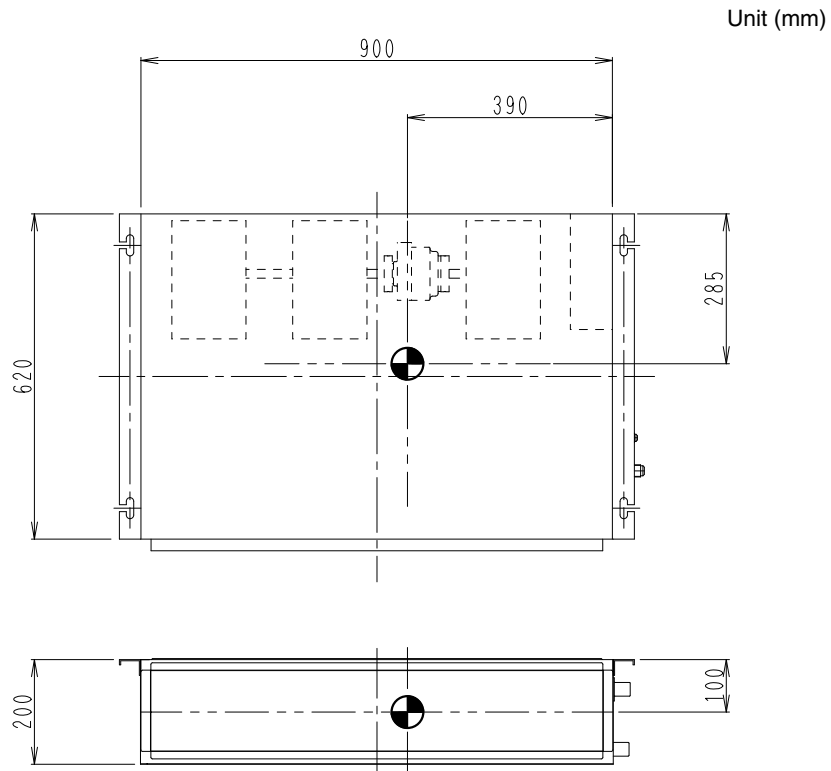
Unit (mm)



4D049300D

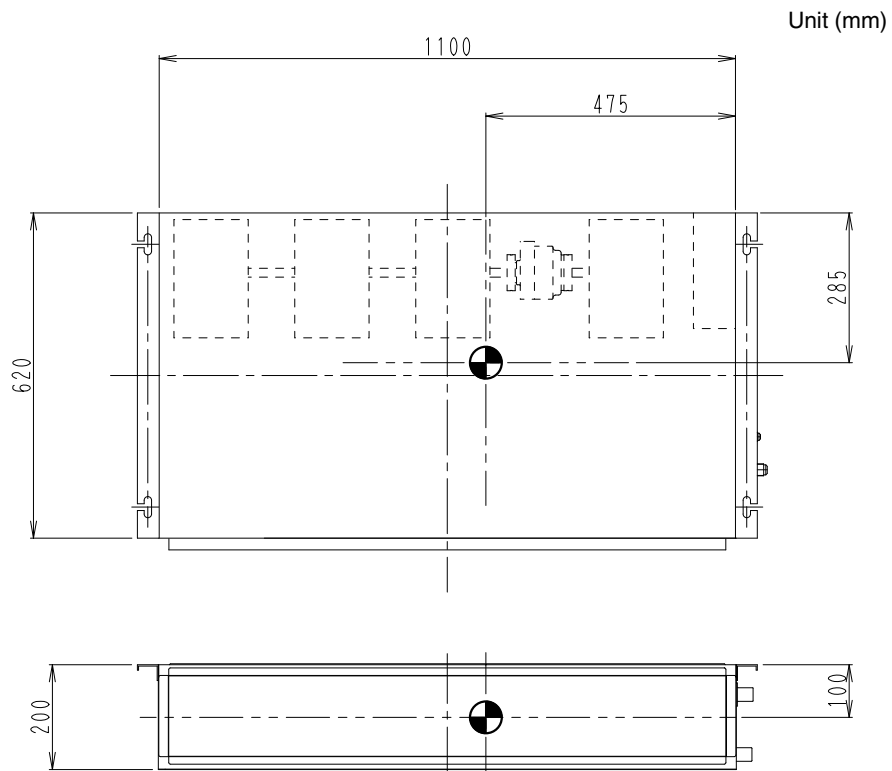
10.2 FXDQ-NB

FXDQ40 / 50NBVE(T)



4D043886J

FXDQ63NBVE(T)



4D043887H

11. Installation



CONTENTS

- 1. SAFETY PRECAUTIONS 1
- 2. BEFORE INSTALLATION 2
- 3. SELECTING INSTALLATION SITE 3
- 4. PREPARATIONS BEFORE INSTALLATION..... 4
- 5. INDOOR UNIT INSTALLATION 5
- 6. REFRIGERANT PIPING WORK 5
- 7. DRAIN PIPING WORK 7
- 8. INSTALLING THE DUCT 9
- 9. ELECTRIC WIRING WORK 9
- 10. WIRING EXAMPLE 10
- 11. FIELD SETTING AND TEST RUN 13

1. SAFETY PRECAUTIONS

Please read these "SAFETY PRECAUTIONS" carefully before installing air conditioning equipment and be sure to install it correctly.

After completing installation, conduct a trial operation to check for faults and explain to the customer how to operate the air conditioner and take care of it with the aid of the operation manual. Ask the customer to store the installation manual along with the operation manual for future reference.

This air conditioner comes under the term "appliances not accessible to the general public".

This unit is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Meaning of WARNING and CAUTION notices

⚠ WARNING Failure to follow these instructions properly may result in personal injury or loss of life.

⚠ CAUTION Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

⚠ WARNING

- Ask your dealer or qualified personnel to carry out installation work.
Do not attempt to install the air conditioner yourself. Improper installation may result in water leakage, electric shocks or fire.
- Install the air conditioner in accordance with the instructions in this installation manual.
Improper installation may result in water leakage, electric shocks or fire.
- Consult your local dealer regarding what to do in case of refrigerant leakage. When the air conditioner is to be installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.
- Be sure to use only the specified accessories and parts for installation work.
Failure to use the specified parts may result in the unit falling, water leakage, electric shocks or fire.
- Install the air conditioner on a foundation strong enough to withstand the weight of the unit.
A foundation of insufficient strength may result in the equipment falling and causing injury.

- Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.
Failure to do so during installation work may result in the unit falling and causing accidents.
- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.
An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- Make sure that all wiring is secured, the specified wires are used, and that there is no strain on the terminal connections or wires. Improper connections or securing of wires may result in abnormal heat build-up or fire.
- When wiring the power supply and connecting the remote controller wiring and transmission wiring, position the wires so that the control box lid can be securely fastened. Improper positioning of the control box lid may result in electric shocks, fire or the terminals overheating.
- If refrigerant gas leaks during installation, ventilate the area immediately.
Toxic gas may be produced if the refrigerant comes into contact with fire.
- After completing installation, check for refrigerant gas leakage.
Toxic gas may be produced if the refrigerant gas leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.
- Be sure to switch off the unit before touching any electrical parts.
- Do not touch the switch with wet fingers.
Touching the switch with wet fingers can cause electric shock.
- Be sure to earth the air conditioner.
Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead.
Imperfect earthing may result in electric shocks or fire.
A high surge current from lightning or other sources may cause damage to the air conditioner.
- Be sure to install an earth leakage breaker.
Failure to install an earth leakage breaker may result in electric shocks or fire.

⚠ CAUTION

- While following the instructions in this installation manual, install drain piping to ensure proper drainage and insulate piping to prevent condensation.
Improper drain piping may result in indoor water leakage and property damage.
- Install the indoor and outdoor units, power cord and connecting wires at least 1 meter away from televisions or radios to prevent picture interference and noise.
(Depending on the incoming signal strength, a distance of 1 meter may not be sufficient to eliminate noise.)
- Remote controller (wireless kit) transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types).
Install the indoor unit as far away from fluorescent lamps as possible.
- Do not install the air conditioner in the following locations:
 1. Where there is a high concentration of mineral oil spray or vapour (e.g. a kitchen).
Plastic parts will deteriorate, parts may fall off and water leakage could result.

2. Where corrosive gas, such as sulphurous acid gas, is produced.
Corroding of copper pipes or soldered parts may result in refrigerant leakage.
 3. Near machinery emitting electromagnetic radiation.
Electromagnetic radiation may disturb the operation of the control system and result in a malfunction of the unit.
 4. Where flammable gas may leak, where there is carbon fibre or ignitable dust suspensions in the air, or where volatile flammables such as paint thinner or gasoline are handled.
Operating the unit in such conditions may result in fire.
- Do not touch the heat exchanger fins.
Improper handling may result in injury.
 - Be very careful about product transportation.
Some products use PP bands for packaging. Do not use any PP bands for a means of transportation. It is dangerous.
 - Safely dispose of the packing materials.
Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries.
Tear apart and throw away plastic packaging bags so that children will not play with them. If children play with a plastic bag which was not torn apart, they face the risk of suffocation.
 - Do not turn off the power immediately after stopping operation.
Always wait at least 5 minutes before turning off the power.
Otherwise, water leakage and trouble may occur.
 - In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Follow national standards for installation work.

2. BEFORE INSTALLATION

The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them!

1. Decide upon a line of transport.
2. Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.

When moving the unit at or after opening, hold the unit by the hanger brackets. Do not apply force to the refrigerant piping, drain piping or flange parts.

**Be sure to check the type of R410A refrigerant to be used before installing the unit.
(Using an incorrect refrigerant will prevent normal operation of the unit.)**







For the installation of an outdoor unit, refer to the installation manual attached to the outdoor unit.






2-1 PRECAUTIONS


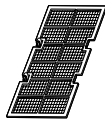
- Be sure to instruct customers how to properly operate the unit (operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the operation manual.
- Do not install in locations where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories, or in vehicles or vessels.

2-2 ACCESSORIES

Check the following accessories are included with your unit.

Name	Metal clamp (1)	Drain hose (2)	Insulation for fitting	Sealing pad
Quantity	1 pc.	1 pc.	1 each	1 each
Shape			for liquid pipe (3)  for gas pipe (4) 	Large (5)  mid. (6) 

Name	Screws for duct flanges (7)	Washer for hanging bracket (8)	Clamp	Washer fixing plate (11)
Quantity	1 set	8 pcs.	1 set	4 pcs.
Shape	 26 pcs.		 Large (9) 8 pcs.  small (10) 4 pcs.	

Name	Sealing material (12)	Air filter (13)	(Other)
Quantity	2 pcs.	1 pc.	• Operation manual • Product quality certificate • Installation manual (this manual)
Shape			

2-3 OPTIONAL ACCESSORIES

- This indoor unit requires one of the operation remote controls listed below.

Remote controller	
Wired type	BRC1C62
Wireless type (Heat pump type/ Cooling only type)	BRC4C65/BRC4C66

FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED.

a. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur	Check
Are the indoor and outdoor unit fixed firmly?	The units may drop, vibrate or make noise.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	Condensate may drip.	
Does drainage flow smoothly?	Condensate may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	Incomplete grounding may result in electric shocks.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	

Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	

Also review the "SAFETY PRECAUTIONS".

b. Items to be checked at time of delivery

Items to be checked	Check
Did you explain about operations while showing the operation manual to your customer?	
Did you hand the operation manual and warranty over to your customer?	
Did you explain about the way of maintaining and cleaning local procurements (air filter, grille (both air outlet and suction grille), etc.) to your customer?	
Did you hand manuals of local procurements (in case equipped) over to your customer?	

c. Points for explanation about operations

The items with **⚠ WARNING** and **⚠ CAUTION** marks in the operation manual are the items pertaining to possibilities for bodily injury and material damage in addition to the general usage of the product. Accordingly, it is necessary that you make a full explanation about the described contents and also ask your customers to read the operation manual.

3. SELECTING INSTALLATION SITE

⚠ CAUTION

- When moving the unit during or after unpacking, make sure to lift it by holding its lifting lugs. Do not exert any pressure on other parts, especially the refrigerant piping, drain piping and flange parts.
- If you think the humidity inside the ceiling might exceed 30°C and RH80%, reinforce the insulation on the unit body. Use glass wool or polyethylene foam as insulation so that it is no thicker than 10mm and fits inside the ceiling opening.

- (1) **Select an installation site where the following conditions are fulfilled and that meets with your customer's approval.**
- Where optimum air distribution can be ensured.
 - Where nothing blocks air passage.
 - Where condensate can be properly drained.
 - Where the ceiling is strong enough to bear the indoor unit weight.
 - Where the false ceiling is not noticeably on an incline.
 - Where there is no risk of flammable gas leakage.
 - Where sufficient clearance for maintenance and service can be ensured. (Refer to Fig. 1)
 - Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual for the outdoor unit.)

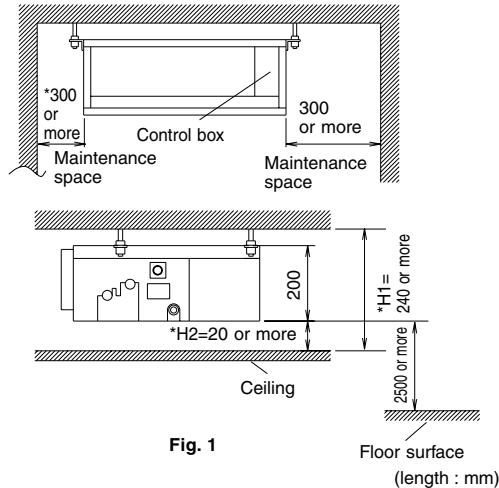


Fig. 1

- *H1 dimension means the minimum height of the unit.
- Select the *H1, *H2 dimension such that a downward slope of at least 1/100 is ensured as indicated in "7. DRAIN PIPING WORK".
- The maintenance space marked with "*" is required when the installation box for adaptor PC board (KRP1BA101) sold separately is used.

[PRECAUTION]

- Install the indoor and outdoor units, power supply wiring and connecting wires at least 1 m away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 1 m may not be sufficient enough to eliminate the noise.)
 - If installing the wireless kit in a room with electronic fluorescent lighting (inverter or rapid start type), the remote controller's transmission distance may be shortened. Indoor units should be installed as far away from fluorescent lighting as possible.
- (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.**
 (Installation pitch is marked on the carton box for installation. Refer to it to check for points requiring reinforcing.)

4. PREPARATIONS BEFORE INSTALLATION

(1) Confirm the positional relationship between the unit and suspension bolts. (Refer to Fig. 2)

- Install the inspection opening on the control box side where maintenance and inspection of the control box and drain pump are easy. Install the inspection opening also in the lower part of the unit.

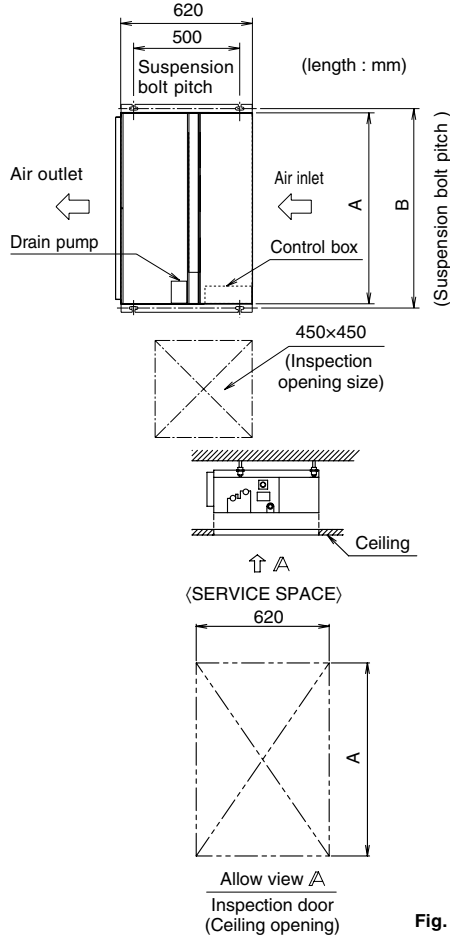


Fig. 2
(length: mm)

Model	A	B
20 · 25 · 32 type	700	740
40 · 50 type	900	940
63 type	1100	1140

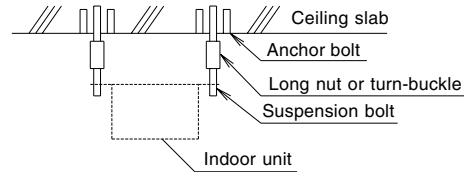
- (2) Make sure the range of the unit's external static pressure is not exceeded.**
(See the technical documentation for the range of the external static pressure setting.)

(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 piping, drain piping, transmission wiring, and remote controller wiring (It is not necessary if using a wireless remote controller) to the unit's piping and wiring holes.
See "6. REFRIGERANT PIPING WORK", "7. DRAIN PIPING WORK", and "10. WIRING EXAMPLE".
- After opening the ceiling hole, make sure ceiling is level if needed. It might be necessary to reinforce the ceiling frame to prevent shaking.
Consult an architect or carpenter for details.

(4) Install the suspension bolts.

- (Use W3/8 to M10 suspension bolts.)
Use a hole-in-anchor for existing ceilings, and a sunken insert, sunken anchor or other part to be procured in the field to reinforce the ceiling to bearing the weight of the unit for new ceiling. (Refer to Fig. 3)



Note: All the above parts are field supplied.

Fig. 3

(5) For bottom intake, replace the chamber lid and protection net in the procedure listed in Fig. 4.

- (1) Remove the protection net. (6 locations)---PBVE(T) type only
Remove the chamber lid. (7 locations)
- (2) Reattached the removed chamber lid in the orientation shown in Fig. 4. (7 locations)
Reattached the removed protection net in the orientation shown in Fig. 4. (6 locations)---PBVE(T) type only
- (3) Attach the air filter (accessory) in the manner shown in the diagram.
The four holes which cannot be covered by the air filter should be covered with commercially available tape.

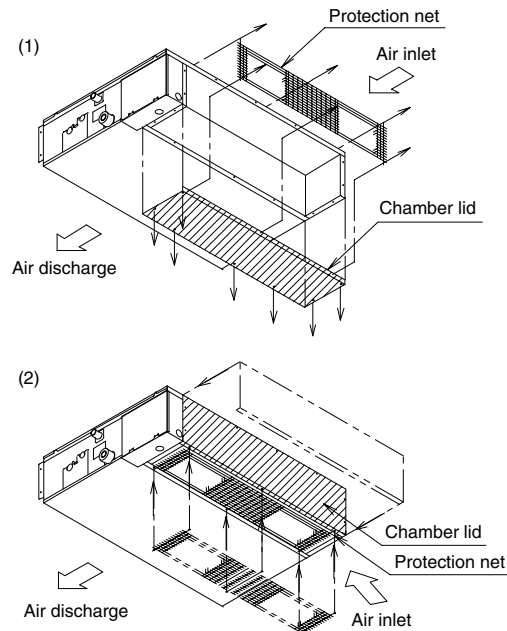
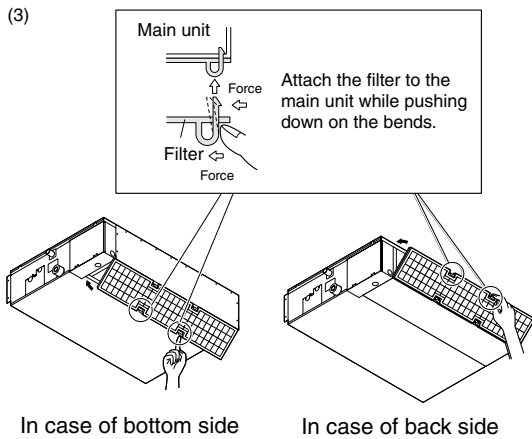


Fig. 4



5. INDOOR UNIT INSTALLATION

«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) Install the indoor unit temporarily.

- Attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and washer from the upper and lower sides of the hanger bracket. (Refer to Fig. 5)

[Securing the hanger bracket]

[How to secure washers]

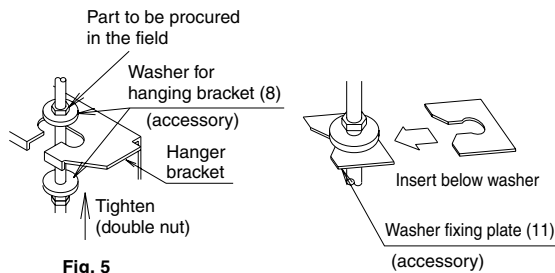


Fig. 5

[PRECAUTION]

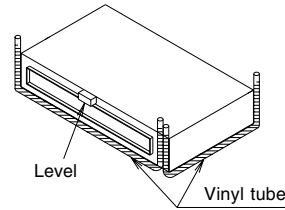
Since the unit uses a plastic drain pan, prevent welding spatter and other foreign substances from the air outlet during installation.

(2) Adjust the height of the unit.

(3) Check the unit is horizontally level.

CAUTION

- Make sure the unit is installed level using a level or a plastic tube filled with water. In using a plastic tube instead of a level, adjust the top surface of the unit to the surface of the water at both ends of the plastic tube and adjust the unit horizontally. (One thing to watch out for in particular is if the unit is installed so that the slope is not in the direction of the drain piping, this might cause leaking.)



(4) Tighten the upper nut.

6. REFRIGERANT PIPING WORK

«For refrigerant piping of outdoor units, see the installation manual attached to the outdoor unit.»

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

Use insulation that can withstand temperatures of at least 120°C. Reinforce the insulation on the refrigerant piping according to the installation environment. If the temperature above the ceiling might reach 30°C or the humidity RH80%. Condensation may form on the surface of the insulation.»

CAUTION

Follow the points at below.

- Use a pipe cutter and flare suitable for the type of refrigerant.
- Apply ester oil or ether oil to the flare section when using a flare connection.
- Only use the flare nuts included with the unit. Using different flare nuts may cause the refrigerant to leak.
- To prevent dust, moisture or other foreign matter from infiltrating the piping, 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 air, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.

(1) Connect the piping.

- The 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. 6)

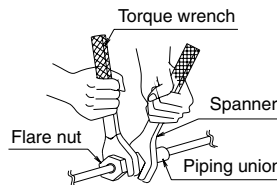


Fig. 6

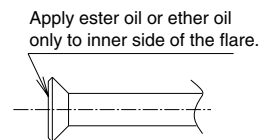


Fig. 7

- Refer to the Table 1 for the dimensions of flare nut spaces.
- Apply ether oil or ester oil only to inner side of the flare when using flare nut connections and then turn 3 or 4 times by hand. (Refer to Fig. 7)

- Refer to Table 1 for tightening torque.

Table 1

Pipe size	Tightening torque	Flare dimension A (mm)	Flare shape
φ 6.4 (1/4")	14.2 – 17.2 N·m (144 – 176 kgf·cm)	8.7 – 9.1	
φ 9.5 (3/8")	32.7 – 39.9 N·m (333 – 407 kgf·cm)	12.8 – 13.2	
φ 12.7 (1/2")	49.5 – 60.3 N·m (504 – 616 kgf·cm)	16.2 – 16.6	
φ 15.9 (5/8")	61.8 – 75.4 N·m (630 – 770 kgf·cm)	19.3 – 19.7	

CAUTION
Overtightening may damage the flare and cause leaks. Be careful for oil not to adhere to any portions other than a flare part. If oil adhere to resin parts etc., there is a possibility of damaging by deterioration.

- Refer to Table 2 if no torque wrench is available. Using a wrench to tighten flare nuts causes the tightening torque to suddenly grow much tighter after a certain point. From there, tighten the nut further by the appropriate angle listed in Table 2.
- (2) After the work is finished, make sure to check that there is no gas leak.
- (3) After checking for gas leaks, be sure to insulate the pipe connections referring to Fig. 8.
 - Insulate using the insulation for fitting (3) (4) included with the liquid and gas pipes. Besides, make sure the insulation for fitting (3) (4) on the liquid and gas piping has its seams facing up.
 - (Tighten both edges with clamp (9).)
 - For the gas piping, wrap the mid. sealing pad (6) over the insulation for fitting (4) (flare nut part).

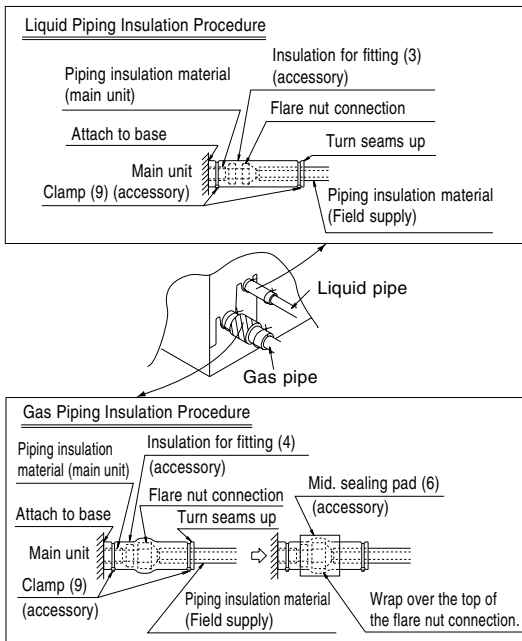


Fig. 8

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

- When brazing the refrigerant piping, perform nitrogen replacement first, or perform the brazing (CAUTION 2) while feeding nitrogen into the refrigerant piping (CAUTION 1), and finally connect the indoor unit using the flare connections. (Refer to Fig. 9)

- CAUTION**
1. When brazing a pipe while feeding nitrogen inside the pipe, make sure to set the nitrogen pressure to 0.02 MPa (0.2 kg/cm²) using the pressure reducing valve. (This pressure is such that breeze is blown to your cheek.)
 2. Do not use a flux when brazing the refrigerant pipe joints. Use phosphor copper brazer (BCuP-2: JIS Z 3264/B-Cu93P-710/795: ISO 3677) which does not require flux. (Using a flux containing chlorine may cause the piping to corrode. Using a welding flux containing fluorine may cause the refrigerant lubricant to deteriorate, and affect adversely the refrigerant piping system.)

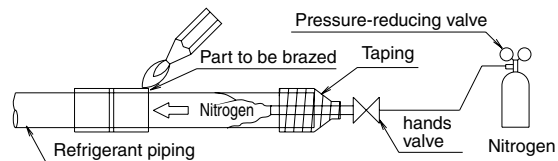


Fig. 9

Not recommendable 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 2

Pipe size	Further tightening angle	Recommended arm length of tool
φ 6.4 (1/4")	60 to 90 degrees	Approx. 150mm
φ 9.5 (3/8")	60 to 90 degrees	Approx. 200mm
φ 12.7 (1/2")	30 to 60 degrees	Approx. 250mm
φ 15.9 (5/8")	30 to 60 degrees	Approx. 300mm

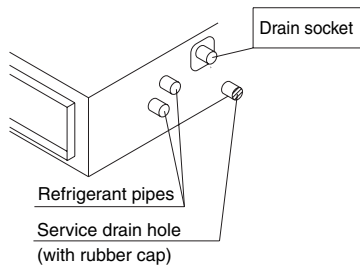
7. DRAIN PIPING WORK

In case of PBVE, NBVE type (with drain pump)

CAUTION

- The connection opening on the drain piping may vary depending on the model, so check the model name and use the right method for that model.
- Make sure all water is out before making the duct connection.

(1) Install the drain piping.



- Make sure the drain works properly.
- The diameter of the drain piping should be greater than or equal to the diameter of the connecting pipe (vinyl tube; pipe size: 20 mm; outer dimension: 26 mm). (not including the riser)
- Keep the drain piping short and sloping downwards at a gradient of at least 1/100 to prevent air pockets from forming. (Refer to Fig. 10)

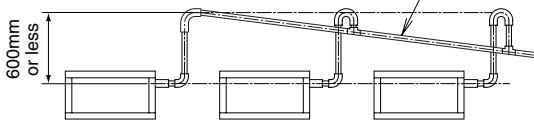
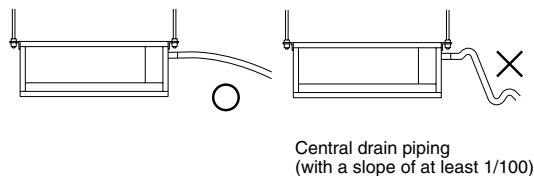


Fig. 10

CAUTION

Water accumulating in the drain piping can cause the drain to clog.

- To keep the drain piping from sagging, space hanging bracket every 1 to 1.5 m.
- Use the drain hose (2) and the metal clamp (1). Insert the drain hose (2) fully into the drain socket and firmly tighten the metal clamp (1) with the upper part of the tape on the hose end. Tighten the metal clamp (1) until the screw head is less than 4 mm from the hose. (Refer to Fig. 11, 12)
- The two areas below should be insulated because condensation may form there causing water to leak.
 - Drain piping passing indoors
 - Drain socket

Referring the figure below, insulate the metal clamp (1) and drain hose (2) using the included large sealing pad (5). (Refer to Fig. 12)

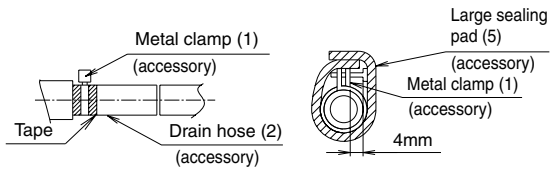


Fig. 11

Fig. 12

PRECAUTIONS FOR DRAIN RAISING PIPE

- Make sure the drain raising pipe height is no higher than 600mm.
- Place the drain raising pipe vertically and make sure it is no further than 300mm from the unit. (Refer to Fig. 13)

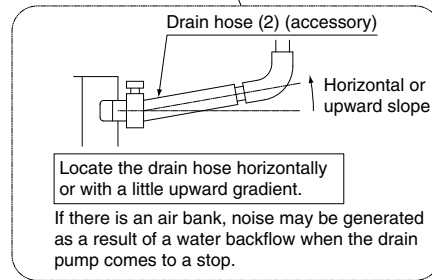
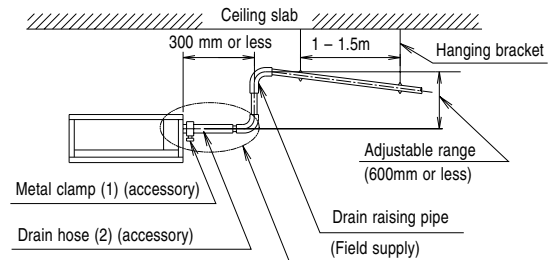


Fig. 13

PRECAUTIONS

Drain piping connections

- Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain piping and corrode the heat exchanger.
- Do not twist or bend the drain hose (2), so that excessive force is not applied to it. (This type of treatment may cause leaking.)
- If you are using central drain piping, follow the procedure outlined in the figure 10.
- Select central drain piping of proper size according to the capacity of the connected unit.

(2) After piping work is finished, check drainage flows smoothly, with manner described below.

CAUTION

- The electric wiring work shall be performed by qualified electricians.
- If workers not having the electrician qualification have performed the electric wiring work, the steps 3 to 7 shall be performed after the TEST RUN.

1. Remove the control box lid. Connect the remote controller and power supply (single-phase, 50 Hz 220-240 V or single-phase, 60Hz 220V) respectively to the terminal block and securely connect the earth also (as shown in the figure below).

CAUTION

Securely clamp the cables with the clamps (9)(10) offered as accessories as shown in Fig. 17 so that tension will not be applied on the cable connection areas.

2. Confirm that the control box lid is closed before turning on the power.
3. Remove the inspection lid.
4. Gradually pour approximately 1L of water from the inspection window into the drain pan to check drainage.

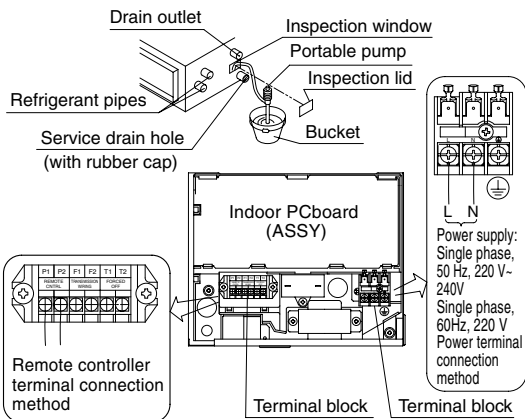
CAUTION

Be sure to prevent an external force from being exerted on the float switch. (This may cause breakage.)

5. Attach the inspection lid.
6. Perform the following operation using the remote controller, and check drainage.
 - Select the inspection/test operation button "TEST" using the remote controller. The unit will engage the test operation. Press the operation selector button "FAN OPERATION", and select FAN OPERATION "ON".
 - Press the ON/OFF button "ON/OFF". (The indoor fan and drain pump will operate.)

CAUTION

The fan will turn also at the same time. Take due care. Do not touch the drain pump to prevent electric shock.



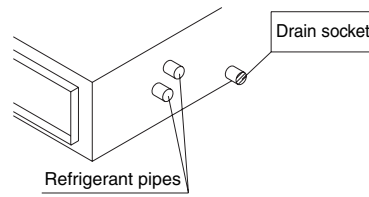
7. Make sure to use the remote controller in finishing the operation.

In case of PBVET, NBVET type (without drain pump)

CAUTION

- The connection opening on the drain piping may vary depending on the model, so check the model name and use the right method for that model.
- Make sure all water is out before making the duct connection.

(1) Install the drain piping.



Connect the drain pipe after removing the rubber cap and insulation tubing attached to the connection hole.

- Make sure the drain works properly.
- The diameter of the drain piping should be greater than or equal to the diameter of the connecting pipe (vinyl tube; pipe size: 20 mm; outer dimension: 26 mm). (not including the riser)
- Keep the drain piping short and sloping downwards at a gradient of at least 1/100 to prevent air pockets from forming. (Refer to Fig. 14)

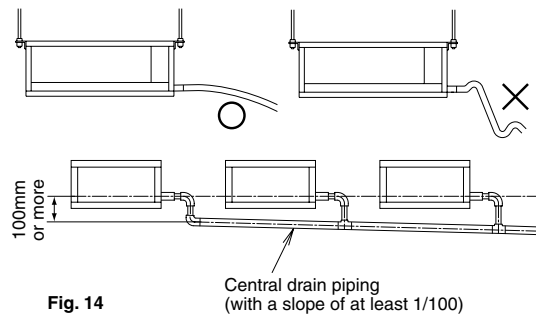


Fig. 14

CAUTION

Water accumulating in the drain piping can cause the drain to clog.

- To keep the drain piping from sagging, space hanging bracket every 1 to 1.5 m.
- Use the drain hose (2) and the metal clamp (1). Insert the drain hose (2) fully into the drain socket and firmly tighten the metal clamp (1) with the upper part of the tape on the hose end. Tighten the metal clamp (1) until the screw head is less than 4 mm from the hose. (Refer to Fig. 15, 16)
- The two areas below should be insulated because condensation may form there causing water to leak.
 - Drain piping passing indoors
 - Drain socket

Referring the figure below, insulate the metal clamp (1) and drain hose (2) using the included large sealing pad (5). (Refer to Fig. 16)

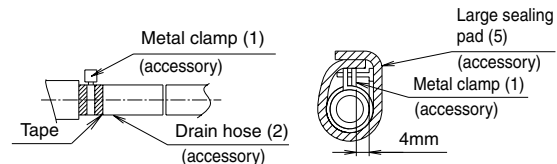


Fig. 15

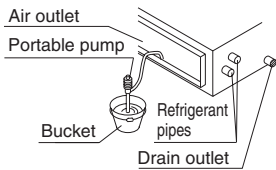
Fig. 16

< PRECAUTIONS >

Drain piping connections

- Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain piping and corrode the heat exchanger.
- Do not twist or bend the drain hose (2), so that excessive force is not applied to it.
(This type of treatment may cause leaking.)
- If you are using central drain piping, follow the procedure outlined in the figure 14.
- Select central drain piping of proper size according to the capacity of the connected unit.

(2) After piping work is finished, check drainage flows smoothly, with manner described below.



- Gradually pour approximately 1L of water from the outlet hole into the drain pan to check drainage.
- Check the drainage.

8. INSTALLING THE DUCT

Connect the duct supplied in the field.

Air inlet side

- Attach the duct and intake-side flange (field supply).
- Connect the flange to the main unit with accessory screws (7).

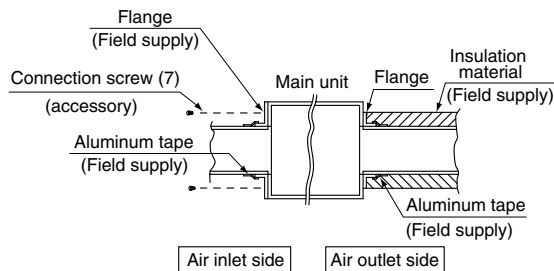
Class	20 · 25 · 32	40 · 50	63
Number of positions	16	22	26

- Wrap the intake-side flange and duct connection area with aluminum tape or something similar to prevent air escaping.

CAUTION

When attaching a duct to the intake side, be sure to attach an air filter inside the air passage on the intake side. (Use an air filter whose dust collecting efficiency is at least 50% in a gravimetric technique.)

The included filter is not used when the intake duct is attached.



Air outlet side

- Connect the duct according to the air inside of the outlet-side flange.
- Wrap the outlet-side flange and the duct connection area with aluminum tape or something similar to prevent air escaping.

CAUTION

- Be sure to insulate the duct to prevent condensation from forming. (Material: glass wool or polyethylene foam, 25 mm thick)
- Use electric insulation between the duct and the wall when using metal ducts to pass metal laths of the net or fence shape or metal plating into wooden buildings.
- Be sure to explain about the way of maintaining and cleaning local procurements (air filter, grille (both air outlet and suction grille), etc.) to your customer.

9. ELECTRIC WIRING WORK

9-1 GENERAL INSTRUCTIONS

- Shut off the power before doing any work.
- All field supplied parts and materials, electric works must conform to local codes.
- Use copper wire only.
- See also the "Wiring Diagram plate" attached to the control box lid when laying electrical wiring.
- For details on hooking up the remote controller, refer to the "REMOTE CONTROLLER INSTALLATION MANUAL".
- 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 and BS unit are properly matched. If wiring and piping between the outdoor unit and an indoor unit are mismatched, the system may cause a malfunction.
- A circuit breaker 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 wiring connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Be sure to ground the air conditioner.
- Do not the earth wire should come in contact with gas pipes, water pipes, lightning rods, or telephone earth wires.
 - Gas pipes: gas leaks can cause explosions and fire.
 - Water pipes: they cannot be grounded if hard vinyl pipes are used.
 - Telephone earth wire and lightning rods: the ground potential when struck by lightning gets extremely high.
- To avoid short circuiting the power supply wire, be sure to use insulated terminals.
- Do not turn on the power supply (circuit breaker or earth leakage breaker) until all other work is done.

9-2 SPECIFICATIONS FOR FIELD SUPPLIED FUSES AND WIRE

Power-related

Model	Power supply wiring (including earth wire)			
	Number of units	Field fuses	Wire	Size
20 · 25 · 32 type	1	15A	H05VV-U3G (NOTE 1)	Size must comply with local codes.
40 · 50 type				
63 type				

Model	Transmission wiring Remote controller wiring	
	Wire	Size (mm ²)
20 · 25 · 32 type	Sheathed vinyl cord or cable (2 wires) (NOTE 2)	0.75 - 1.25
40 · 50 type		
63 type		

NOTES

1. Shows only in case of protected pipes. Use H07RN-F in case of no protection.
 2. Insulated thickness : 1 mm or more.
 3. If the wiring is in a place where people it can be easily touched by people, install an earth leakage breaker to prevent electric shock.
 4. When using an earth leakage breaker, make sure to select one useful also to protection against overcurrent and short-circuit.
When using an earth leakage breaker only for earth device, make sure to use a wiring interrupter together.
- The length of the transmission wiring and remote controller wiring are as follows.

Length of the transmission wiring and remote controller wiring

Outdoor unit – Indoor unit	Max. 1000m (Total wiring length: 2000m)
Indoor unit – Remote controller	Max. 500m

9-3 ELECTRICAL CHARACTERISTICS

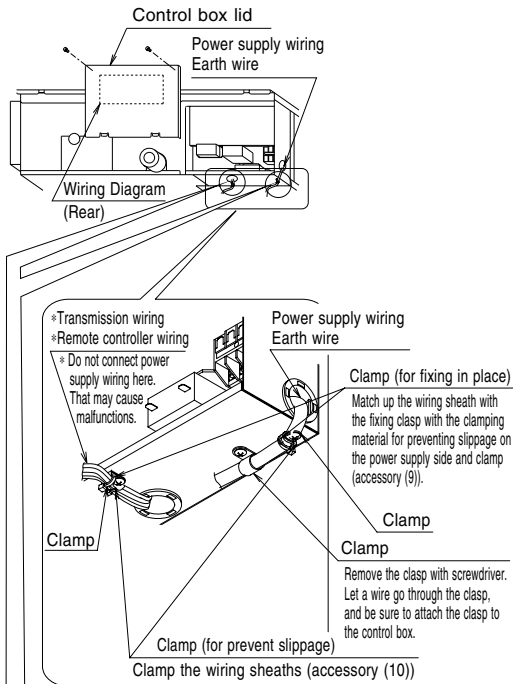
Units				Power supply		Fan motor	
Model	Hz	Volts	Voltage range	MCA	MFA	KW	FLA
20 · 25 · 32 PBVE	50	220-240	Min. 198 Max. 264	0.8	15	0.062	0.6
20 · 25 · 32 PBVET				0.7		0.062	0.6
40 NBVE(T)				1.0		0.062	0.8
50 NBVE(T)				1.0		0.13	0.8
63 NBVE(T)				1.1		0.13	0.9
20 · 25 · 32 PBVE	60	220	Min. 198 Max. 242	0.9	15	0.062	0.7
20 · 25 · 32 PBVET				0.8		0.062	0.7
40 NBVE(T)				1.1		0.062	0.9
50 NBVE(T)				1.3		0.13	1.0
63 NBVE(T)				1.4		0.13	1.1

MCA: Minimum Circuit Amps (A) MFA:Max. Fuse Amps (A)
 KW: Fan motor output (kW) FLA:Full Load Amps (A)

10. WIRING EXAMPLE

10-1 HOW TO CONNECT WIRINGS

- Wire only after removing the control box lid as shown in Fig. 17.



- ⚠ • Make sure to let a wire go through a wire penetration area.
- After wiring, seal the wire and wire penetration area to prevent moisture and small creatures from the outside.
- Wrap the strong and weak electric lines with the sealing material (12) as shown in the figure below. (Otherwise, moisture or small creatures such as insects from the outside may cause short-circuit inside the control box.) Attach securely so that there are no gaps.

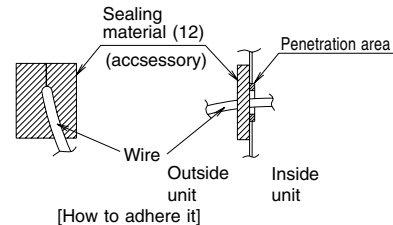


Fig. 17

CAUTION

- When clamping the wiring, use the included clamp material (9) and (10) as shown in the Fig.17 to prevent outside pressure being exerted on the wiring connections and clamp firmly.
- Be sure to attach power supply wiring and earth wire to the control box with the clamp.
- When doing the wiring, make sure the wiring is neat and does not cause the control box lid to stick up, then close the cover firmly. When attaching the control box lid, make sure you do not pinch any wires.
- Outside the air conditioners, separate the weak wiring (remote controller and transmission wiring) and strong wiring (earth wire and power supply wiring) at least 50 mm so that they do not pass through the same place together. Proximity may cause electrical interference, malfunctions, and breakage.

[PRECAUTIONS]

- Refer to the "REMOTE CONTROLLER INSTALLATION MANUAL" on how to install and lay the wiring for the remote controller.
- See also the "Wiring Diagram plate" attached to the control box lid when laying electrical wiring.
- Connect the remote controller and transmission wiring their respective terminal blocks.

⚠ CAUTION

- Do not, under any circumstances, connect the power supply wiring to the remote controller or transmission wiring terminal block. Doing so can destroy the entire system.

[Connecting electrical wiring, remote controller wiring, and transmission wiring] (Refer to Fig. 18)

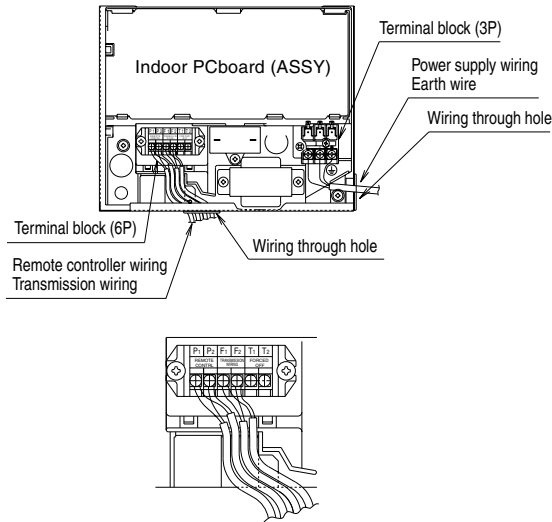


Fig. 18

• Power supply and Earth wiring

Remove the control box lid. Next, pull the wires into the unit through the wiring through hole and connect to the terminal block (3P). Be sure to put the part of the sheathed vinyl into the control box.

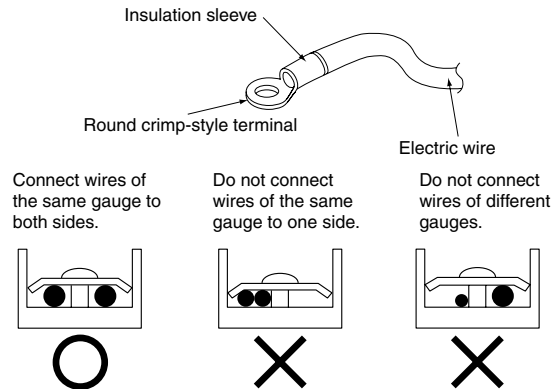
• Remote controller and transmission wiring

Pull the wires into the unit through the wiring through hole and connect to the terminal block (6P). Be sure to put the part of the sheathed vinyl into the control box.

<Precautions when laying power supply wiring >

- Wiring of different thicknesses cannot be connected to the power supply wiring terminal block. (Slack in the power supply wiring may cause abnormal heat.)

- Use sleeve-insulated round crimp-style terminals for connections to the power supply wiring terminal block. When none are available, connect wires of the same diameter to both sides, as shown in the figure.



Follow the instructions are below if the wiring may get very hot due to slack in the power supply wiring.

- For wiring, use the designated power supply wiring and connect firmly, then secure to prevent outside pressure being exerted on the terminal board.
- 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 block	Tightening torque (N·m)
Remote controller / transmission wiring terminal block (6P)	0.79 – 0.97
Power supply wiring terminal block (3P)	1.18 – 1.44

[WIRING EXAMPLE]

No. 1 system When using 1 remote controller for 1 indoor unit

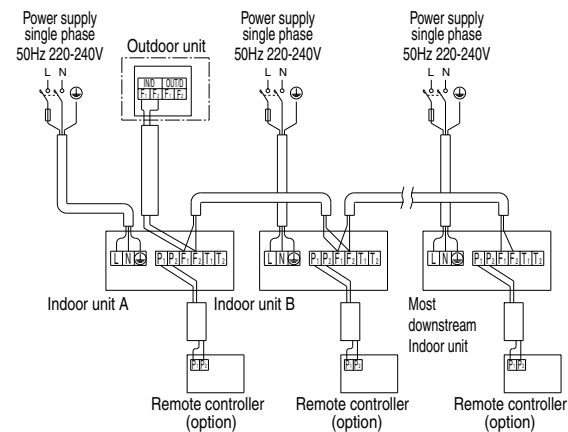


Fig. 19

No. 2 system For group control or use with 2 remote controllers

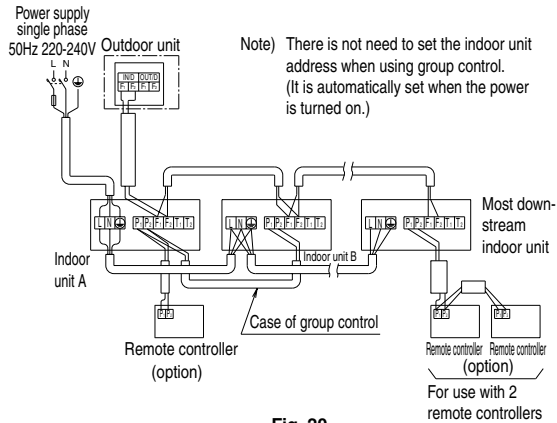


Fig. 20

No. 3 system When including BS unit

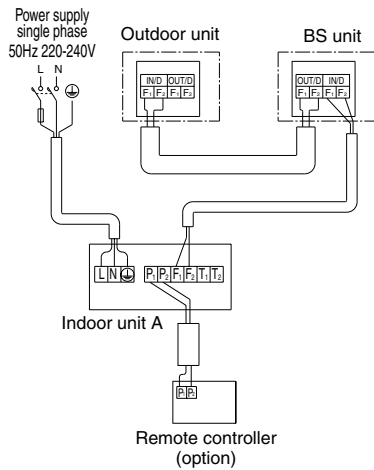


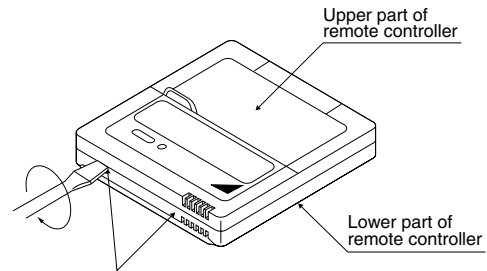
Fig. 21

10-2 CONTROL BY 2 REMOTE CONTROLLERS (Controlling 1 indoor unit by 2 remote controllers)

- When using 2 remote controllers, one must be set to "MAIN" and the other to "SUB".

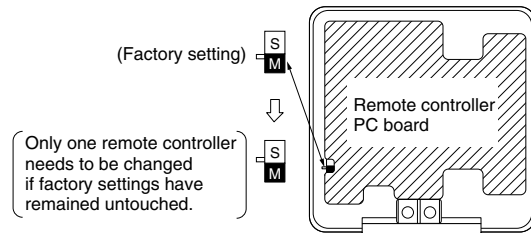
MAIN/SUB CHANGEOVER

- (1) Insert a screwdriver into the recess between the upper and lower part of remote controller and, working from the 2 positions, pry off the upper part (2 locations). The remote controller PC board is attached to the upper part of remote controller.



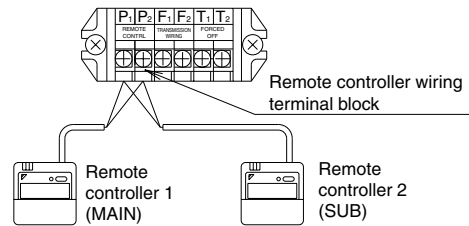
Insert the screwdriver here and gently work off the upper part of remote controller.

- (2) Turn the MAIN/SUB changeover switch on one of the two remote controller PC boards to "S". (Leave the switch of the other remote controller set to "M".)



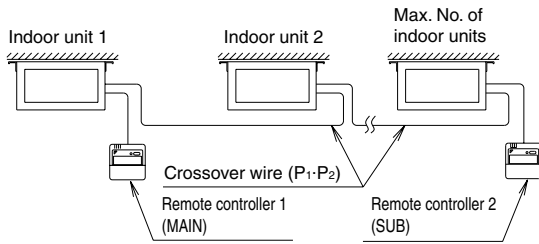
Wiring Method (See "9. ELECTRIC WIRING WORK")

- (3) Remove the control box lid.
- (4) Add remote controller 2 (SUB) to the terminal block for remote controller (P₁, P₂) in the control box. (There is no polarity.)



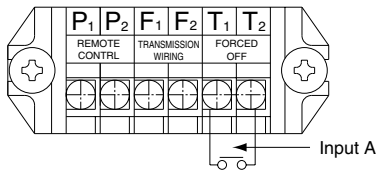
[PRECAUTIONS]

- Crossover wiring is needed when using group control and 2 remote controllers at the same time.
- Connect the indoor unit at the end of the crossover wire (P₁, P₂) to remote controller 2 (SUB).



10-3 REMOTE CONTROL (FORCED OFF AND ON/OFF OPERATION)

- Connect input lines from the outside to the terminals T₁ and T₂ on the terminal block (6P) for remote controller to achieve remote control.
- See the "11. FIELD SETTING AND TEST RUN" for details on operation.



Wire specification	Sheathed vinyl cord or cable (2 wires)
Gauge	0.75 - 1.25 mm ²
Length	Max. 100 m
External terminal	Contact that can ensure the minimum applicable load of 15 V DC, 1 mA.

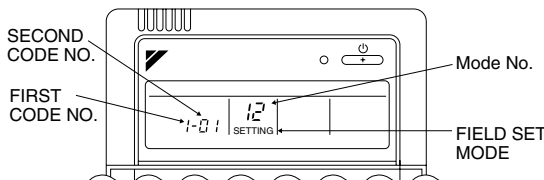
10-4 CENTRALIZED CONTROL

- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

11. FIELD SETTING AND TEST RUN

(Field settings may have to be performed using the remote controller, depending on the type of installation.)

- (1) Make sure the control box lids are closed on the indoor and outdoor units.
- (2) Depending on the type of installation, make the field settings from the remote controller after the power is turned on, following the "Field Settings" manual which came with the remote controller.
 - The settings can select "Mode No.," "FIRST CODE NO." and "SECOND CODE NO."
 - The "Field Settings" included with the remote controller lists the order of the settings and method of operation.



- Lastly, make sure the customer keeps the "Field Settings" manual, along with the operating manual, in a safe place.

11-1 SETTING THE STATIC PRESSURE SELECTION

- Select the SECOND CODE NO. for the resistance of the connected duct.
(The SECOND CODE NO. is set to "01" when shipped.)
- See the technical documentation for details.

External static pressure	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Standard (10Pa)	13(23)	5	01
High static pressure setting (30Pa)			02

11-2 REMOTE CONTROL SETTING

- Forced off and ON/OFF operation should be selected by selecting the SECOND CODE NO. as shown in the table below.
(The SECOND CODE NO. is set to "01" when shipped.)

External ON/OFF input	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Forced off	12(22)	1	01
ON/OFF operation			02

- Input A of forced off and ON/OFF operation work as shown in the table below.

	Forced off	ON/OFF operation
Input A "on" to force a stop (remote controller reception prohibited)		Unit operated by changing input A from "off" to "on"
Input A "off" to allow remote controller		Unit stopped by changing input A from "on" to "off"

11-3 SETTING THE FILTER SIGN DISPLAY INTERVAL

- Explain the following to the customer if the filter dirt settings have been changed.
- The filter sign display time is set to 2500 hours (equivalent to 1 year's use) when shipped.
- The settings can be changed to not display.
- When installing the unit in a place with much dusts, set the filter sign display time to shorter intervals (1,250 hours).
- Explain it to the customer that the filter needs to be cleaned regularly to prevent clogging and also the time that is set.

Mode No.	FIRST CODE NO.		SECOND CODE NO.	
			01	02
10 (20)	0	Filter dirt	low	high
	1 (low/high)	Displayed time (units: hours)	2500/ 1250	10000/ 5000
	3	Filter sign display	ON	OFF

11-4 SETTINGS FOR SEPARATELY SOLD ACCESSORIES

- See the instruction manuals included with separately sold accessories for the necessary settings.

{ When using a wireless remote controller }

- A wireless remote controller address needs to be set when using a wireless remote controller. See the installation manual included with the wireless remote controller for details on how to make the settings.

(3) Perform a test run according to the outdoor unit's installation manual.

- The operation lamp of the remote controller will flash when a malfunction occurs. Check the malfunction code on the liquid crystal display to identify the point of trouble. An explanation of malfunction codes and the corresponding trouble is provided in "CAUTION FOR SERVICING" of the outdoor unit.

If the display shows any of the following, there is a possibility that the wiring was done incorrectly or that the power is not on, so check again.

Remote control display	Content
"E3" display	<ul style="list-style-type: none"> • There is a short circuit at the FORCED OFF terminals (T₁, T₂).
"U3" display	<ul style="list-style-type: none"> • The test-run has not been performed.
"U4" display "U4" display	<ul style="list-style-type: none"> • The power on the outdoor unit is off. • The outdoor unit has not been wired for power supply. • Wiring is incorrect for the transmission wiring and / or FORCED OFF wiring. • The transmission wiring is cut.
"UF" display	<ul style="list-style-type: none"> • Reversed transmission wiring
No display	<ul style="list-style-type: none"> • The power on the indoor unit is off. • The indoor unit has not been wired for power supply. • Wiring is incorrect for the remote controller wiring, the transmission wiring and / or the FORCED OFF wiring. • The remote controller wiring is cut.

⚠ CAUTION









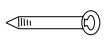

- Always stop the test run using the remote controller to stop operation.



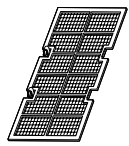
(4) After finishing the test run, make sure to check drainage in the drain pump according to "7. DRAIN PIPING WORK".

12. Accessories

12.1 FXDQ-PB, FXDQ-NB

Standard Accessories

Name	Metal clamp (1)	Drain hose (2)	Insulation for fitting	Sealing pad	Screws for duct flanges (7)	Washer for hanging bracket (8)	Clamp
Quantity	1 pc.	1 pc.	1 each	1 each	1 set	8 pcs.	1 set
Shape			 for liquid pipe (3)  for gas pipe (4)	 Large (5)  mid. (6)	 26 pcs.		 Large (9) 8 pcs.  small (10) 4 pcs.

Name	Washer fixing plate (11)	Sealing material (12)	Air filter (13)	(Other) • Operation manual • Product quality certificate • Installation manual (this manual)
Quantity	4 pcs.	2 pcs.	1 pc.	
Shape				

3PN09042-1A

Optional Accessories (For Unit)

Item	Type	FXDQ20PBVE (T) FXDQ25PBVE (T) FXDQ32PBVE (T)	FXDQ40NBVE (T) FXDQ50NBVE (T)	FXDQ63NBVE (T)
Insulation kit for high humidity		KDT25N32	KDT25N50	KDT25N63

C : 4D060939

Optional Accessories (for Controls)

Item	Type	FXDQ20PBVE (T) FXDQ25PBVE (T) FXDQ32PBVE (T)	FXDQ40NBVE (T) FXDQ50NBVE (T)	FXDQ63NBVE (T)
Remote controller	Wired		BRC1C62	
	Wireless	C/O	BRC4C66	
Wired remote controller with weekly schedule timer			BRC1D61	
Simplified remote controller (Exposed type)			BRC2C51	
Remote controller for hotel use (Concealed type)			BRC3A61	
Adaptor for wiring			KRP1B56	
Wiring adaptor for electrical appendices (1)			KRP2A53	
Wiring adaptor for electrical appendices (2)			KRP4A54	
Remote sensor			KRCS01-1B	
Installation box for adaptor PCB			KRP1BA101	
Central remote controller			DCS302CA61	
Electrical box with earth terminal	2 blocks		KJB212AA	
	3 blocks		KJB311AA	
Unified ON / OFF controller			DCS301BA61	
Noise filter (for electromagnetic interface use only)			KEK26-1A	
Schedule timer			DST301BA61	
External control adaptor for outdoor unit (Must be installed on indoor units)			DTA104A53	

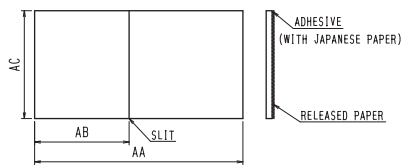
C : 4D060939

KDT25N32 / 50 / 63 – Insulation Kit for High Humidity

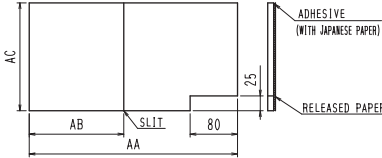
Dimensions

Unit: mm

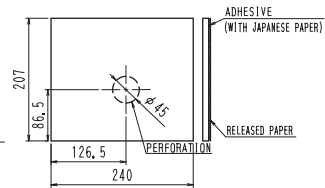
THERMAL INSULATION FOR TOP(1)(2) AND CHAMBER(t10)
1 SHEET EACH FOR TOP AND CHAMBER



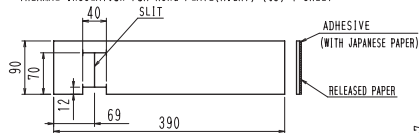
THERMAL INSULATION FOR BOTTOM PLATE(t10) 1 SHEET



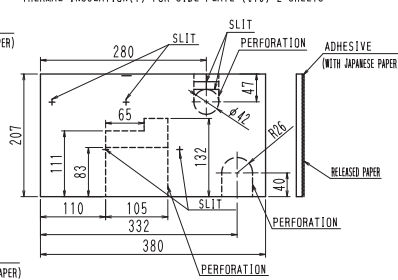
THERMAL INSULATION(2) FOR SIDE PLATE (t10) 1 SHEET



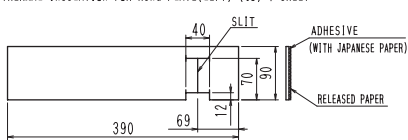
THERMAL INSULATION FOR HUNG PLATE(RIGHT) (t5) 1 SHEET



THERMAL INSULATION(1) FOR SIDE PLATE (t10) 2 SHEETS



THERMAL INSULATION FOR HUNG PLATE(LEFT) (t5) 1 SHEET



Model	Part Name	AA	AB	AA
KDT25N32	FOR TOP PLATE1	700	350	380
	FOR TOP PLATE2	700	350	240
	FOR BOTTOM PLATE	704	352	420
KDT25N50	FOR CHAMBER	621	310	200
	FOR TOP PLATE1	900	450	380
	FOR TOP PLATE2	900	450	240
KDT25N63	FOR BOTTOM PLATE	904	452	420
	FOR CHAMBER	821	410	200
	FOR TOP PLATE1	1100	550	380
	FOR TOP PLATE2	1100	550	240
	FOR BOTTOM PLATE	1104	552	420
	FOR CHAMBER	1021	510	200

Item	Model	KDT25N32	KDT25N50	KDT25N63
Material		Foam polyethylene (with Japanese paper)		
Accessories		Installation manual		

FXSQ-M

Ceiling Mounted Built-In Type

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1. Features

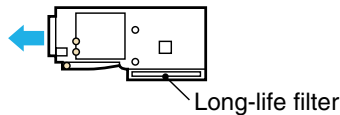
A highly flexible air-conditioning system that is adaptable to a wide range of needs, and is designed to facilitate maintenance while providing a high-quality environment.

- Offers freedom of development for the body, outlets and inlets, and wide variety of optional functions, and gives you the freedom to choose the best set-up according to conditions and needs such as interior and layout design, maintenance, etc.

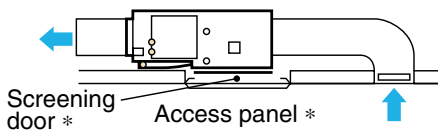


Installation Examples (*Optional Parts)

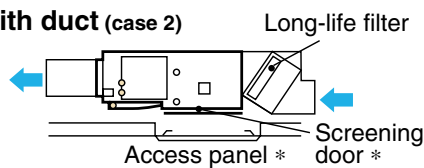
● **Standard**



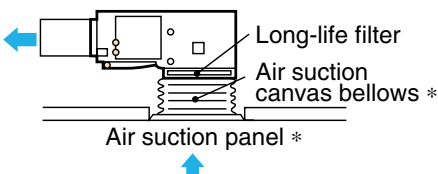
● **With duct (case 1)**



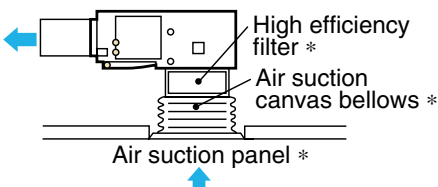
● **With duct (case 2)**



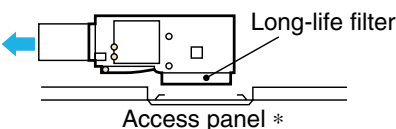
● **Cassette style (standard filter)**



● **Cassette style (high efficiency filter)**

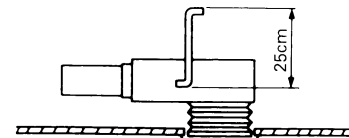


● **Ceiling return**



- In addition to regular ducts, layout is unrestricted and design is easy. You can also use flexible ducts that do not require the duct work of regular ducts.
- Offers a selection of nine models ranging from 20 class (equivalent to 0.8 HP) to Maximum 125 class (equivalent to 5 HP).

- All models feature thin design (350 mm height) making them applicable to ceiling pockets that tend to be shallow.
- Lets you set external static pressure in three stages ranging from max. 10 to min. 2 mm H₂O (2 stages, min. 4 mm H₂O for 80 class) according to conditions such as duct height or whether a high-efficiency filter is used, etc.
- Equipped with a programmed drying mechanism that dehumidifies while inhibiting changes in room temperature
- Includes as standard equipment a long-life filter that is maintenance-free for approximately one year. (Treated to mold resistant.)
- Includes as standard equipment drain pump kit that makes possible draining in the upward direction up to 250 mm from the drain pipe opening.



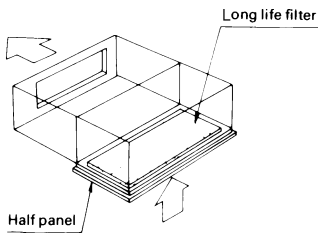
- Quiet-type air-conditioner doesn't destroy the quiet mood of your office.

Capacity	20 type	25 type	32 type	40 type	50 type	63 type	80 type	100 type	125 type
Operating sound (dBA)	37/32	37/32	38/32	38/32	41/36	42/35	43/37	43/37	46/41

- Two types of high-efficiency filters, 65% and 90% (colorimetric method) are available. (Cannot be used if using rear suction type.)
- Suction half panel is thin and unimposing. Ceiling materials adhere to its surface and it provides an excellent finishing touch for the ceiling.
- A wide variety of optional accessories are available such as an auxiliary electric heater (except cooling only).
- If using duct air mounting, please consult with the local fire department for auxiliary heater installation.

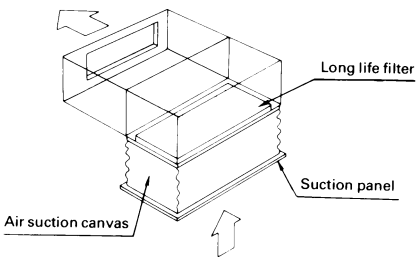
Example of Installation (Built-In)

■ **Direct installation of half panel**



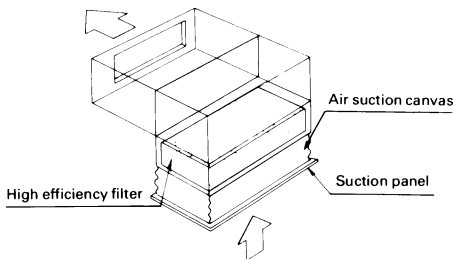
Model		FXSQ20M FXSQ25M FXSQ32M	FXSQ40M FXSQ50M	FXSQ63M	FXSQ80M FXSQ100M FXSQ125M
Necessary Options	Remote Controller	BRC1C62			
	Half Panel	BYBS32DJW1	BYBS45DJW1	BYBS71DJW1	BYBS125DJW1

■ **Installation of Half panel and suction canvas**



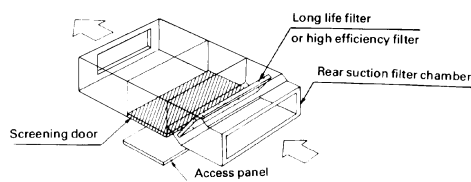
Model		FXSQ20M FXSQ25M FXSQ32M	FXSQ40M FXSQ50M	FXSQ63M	FXSQ80M FXSQ100M FXSQ125M
Necessary Options	Remote Controller	BRC1C62			
	Half Panel	BYBS32DJW1	BYBS45DJW1	BYBS71DJW1	BYBS125DJW1
	Air Suction Canvas	KSA-25K36	KSA-25K56	KSA-25K80	KSA-25L160

■ **Installation like ceiling mounted cassette type with High efficiency filter**



Model		FXSQ20M FXSQ25M FXSQ32M	FXSQ40M FXSQ50M	FXSQ63M	FXSQ80M FXSQ100M FXSQ125M	
Necessary Options	Remote Controller	BRC1C62				
	Half Panel	BYBS32DJW1	BYBS45DJW1	BYBS71DJW1	BYBS125DJW1	
	High Efficiency Filter	NBS65%	KAFJ252L36	KAFJ252L56	KAFJ252L80	KAFJ252L160
		NBS90%	KAFJ253L36	KAFJ253L56	KAFJ253L80	KAFJ253L160
	Air Suction Canvas	KSA-25K36	KSA-25K56	KSA-25K80	KSA-25L160	
	Bottom Suction Filter Chamber	KAJ25L36D	KAJ25L56D	KAJ25L80D	KAJ25L160D	

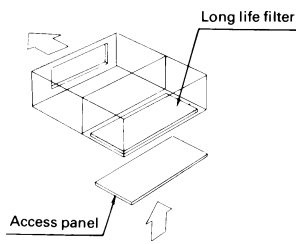
■ **Installation with duct (A)**



The access panel should be fitted beneath the main body of the unit.

Model		FXSQ20M FXSQ25M FXSQ32M	FXSQ40M FXSQ50M	FXSQ63M	FXSQ80M FXSQ100M FXSQ125M	
Necessary Options	Remote Controller	BRC1C62				
	Access Panel	KTBJ25K36W	KTBJ25K56W	KTBJ25K80W	KTBJ25K160W	
	Rear Suction Filter Chamber	KAJ25L36B	KAJ25L56B	KAJ25L80B	KAJ25L160B	
	Screening Door	KBBJ25K36	KBBJ25K56	KBBJ25K80	KBBJ25K160	
	High Efficiency Filter (If Necessary)	NBS65%	KAFJ252L36	KAFJ252L56	KAFJ252L80	KAFJ252L160
		NBS90%	KAFJ253L36	KAFJ253L56	KAFJ253L80	KAFJ253L160

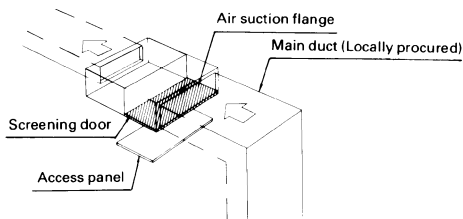
■ Ceiling return



	Model	FXSQ20M FXSQ25M FXSQ32M	FXSQ40M FXSQ50M	FXSQ63M	FXSQ80M FXSQ100M FXSQ125M
Necessary Options	Remote Controller	BRC1C62			
	Access Panel	KTBJ25K36W	KTBJ25K56W	KTBJ25K80W	KTBJ25K160W

The access panel should be fitted beneath the main body of the unit.

■ Installation with duct (B)



	Model	FXSQ20M FXSQ25M FXSQ32M	FXSQ40M FXSQ50M	FXSQ63M	FXSQ80M FXSQ100M FXSQ125M
Necessary Options	Remote Controller	BRC1C62			
	Access Panel	KTBJ25K36W	KTBJ25K56W	KTBJ25K80W	KTBJ25K160W
	Screening Door	KBBJ25K36	KBBJ25K56	KBBJ25K80	KBBJ25K160
	Air Suction Flange	KDJ2507K36	KDJ2507K56	KDJ2507K80	KDJ2507K160

The access panel should be fitted beneath the main body of the unit.

2. Specifications

Ceiling Mounted Built-In Type

Model		FXSQ20MVE	FXSQ25MVE	FXSQ32MVE	
*1 Cooling Capacity (19.5°CWB)	kcal/h	2,000	2,500	3,200	
	Btu/h	7,800	9,900	12,600	
	kW	2.3	2.9	3.7	
*2 Cooling Capacity (19.0°CWB)	kW	2.2	2.8	3.6	
Casing		Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	
Dimensions: (HxWxD)		mm 300x550x800	300x550x800	300x550x800	
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm 3x14x1.75	3x14x1.75	3x14x1.75	
	Face Area	m ² 0.088	0.088	0.088	
Fan	Model	D18H3A	D18H3A	D18H3A	
	Type	Sirocco Fan	Sirocco Fan	Sirocco Fan	
	Motor Output x Number of Units	W 50x1	50x1	50x1	
	Air Flow Rate (H/L)	m ³ /min	9/6.5	9/6.5	9.5/7
		cfm	318/230	318/230	335/247
	*3 External Static Pressure	Pa 88-39-20	88-39-20	64-39-15	
	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		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	
Piping Connections	Liquid Pipes	mm φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	
	Gas Pipes	mm φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	
	Drain Pipe	mm VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	
Machine Weight (Mass)		kg 30	30	30	
*5 Sound Level (H/L) (220V)		dBA 37/32	37/32	38/32	
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	
Connectable Outdoor Unit		R-410A PA Series	R-410A PA Series	R-410A PA Series	
Decoration Panel (Option)	Model	BYBS32DJW1	BYBS32DJW1	BYBS32DJW1	
	Panel Color	White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)	
	Dimensions: (HxWxD)	mm 55x650x500	55x650x500	55x650x500	
	Weight	kg 3	3	3	
Standard Accessories		Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Screws. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Screws. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Screws. Washers.	
Drawing No.		C : 3D039431			

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
 *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
 *3 External static pressure is changeable to change over the connectors inside electrical box, this pressure means "High static pressure-Standard -Low static pressure".
 4 Capacities are net, including a deduction for cooling (an additional for heating) for indoor fan motor heat.
 *5 Anechoic chamber conversion value, measured at a point 1.5 m downward from the unit center. These values are normally somewhat higher during actual operation as a result of ambient conditions.
 6 Refer to page 218 for Fan Motor Input.

Conversion Formulae

$$\begin{aligned} \text{kcal/h} &= \text{kW} \times 860 \\ \text{Btu/h} &= \text{kW} \times 3412 \\ \text{cfm} &= \text{m}^3/\text{min} \times 35.3 \end{aligned}$$

Ceiling Mounted Built-In Type

Model			FXSQ40MVE	FXSQ50MVE	FXSQ63MVE
*1 Cooling Capacity (19.5°CWB)		kcal/h	4,000	5,000	6,300
		Btu/h	16,000	19,800	24,900
		kW	4.7	5.8	7.3
*2 Cooling Capacity (19.0°CWB)		kW	4.5	5.6	7.1
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (HxWxD)		mm	300x700x800	300x700x800	300x1,000x800
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm	3x14x1.75	3x14x1.75	3x14x1.75
	Face Area	m ²	0.132	0.132	0.221
Fan	Model		D18H2A	D18H2A	2D18H2A
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output x Number of Units	W	65x1	85x1	125x1
	Air Flow Rate (H/L)	m ³ /min	11.5/9	15/11	21/15.5
		cfm	406/318	530/388	741/547
	*3 External Static Pressure	Pa	88-49-20	88-59-29	88-49-20
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			Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
Piping Connections	Liquid Pipes	mm	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ9.5 (Flare Connection)
	Gas Pipes	mm	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ15.9 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Machine Weight (Mass)	kg	30	31	41	
*5 Sound Level (H/L) (220V)	dBA	38/32	41/36	42/35	
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
Connectable Outdoor Unit			R-410A PA Series	R-410A PA Series	R-410A PA Series
Decoration Panel (Option)	Model		BYBS45DJW1	BYBS45DJW1	BYBS71DJW1
	Panel Color		White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
	Dimensions: (HxWxD)	mm	55x800x500	55x800x500	55x1,100x500
	Weight	kg	3.5	3.5	4.5
Standard Accessories			Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Screws. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Screws. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Screws. Washers.
Drawing No.			C : 3D039431		

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *3 External static pressure is changeable to change over the connectors inside electrical box, this pressure means "High static pressure-Standard -Low static pressure".
- 4 Capacities are net, including a deduction for cooling (an additional for heating) for indoor fan motor heat.
- *5 Anechoic chamber conversion value, measured at a point 1.5 m downward from the unit center. These values are normally somewhat higher during actual operation as a result of ambient conditions.
- 6 Refer to page 218 for Fan Motor Input.

Conversion Formulae
kcal/h=kWx860
Btu/h=kWx3412
cfm=m ³ /minx35.3

Ceiling Mounted Built-In Type

Model		FXSQ80MVE	FXSQ100MVE	FXSQ125MVE	
*1 Cooling Capacity (19.5°CWB)	kcal/h	8,000	10,000	12,500	
	Btu/h	31,700	39,600	49,500	
	kW	9.3	11.6	14.5	
*2 Cooling Capacity (19.0°CWB)	kW	9.0	11.2	14.0	
Casing		Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	
Dimensions: (HxWxD)		mm	300x1,400x800	300x1,400x800	
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm	3x14x1.75	3x14x1.75	
	Face Area	m ²	0.338	0.338	
Fan	Model		3D18H2A	3D18H2A	
	Type		Sirocco Fan	Sirocco Fan	
	Motor Output x Number of Units		W	225x1	225x1
	Air Flow Rate (H/L)		m ³ /min	27/21.5	38/28
			cfm	953/759	1,341/988
	*3 External Static Pressure		Pa	113-82	78-39
	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		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	
Piping Connections	Liquid Pipes	mm	φ9.5 (Flare Connection)	φ9.5 (Flare Connection)	
	Gas Pipes	mm	φ15.9 (Flare Connection)	φ15.9 (Flare Connection)	
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	
Machine Weight (Mass)		kg	51	52	
*5 Sound Level (H/L) (220V)		dBA	43/37	46/41	
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	
Connectable Outdoor Unit		R-410A PA Series	R-410A PA Series	R-410A PA Series	
Decoration Panel (Option)	Model		BYBS125DJW1	BYBS125DJW1	
	Panel Color		White (10Y9/0.5)	White (10Y9/0.5)	
	Dimensions: (HxWxD)	mm	55x1,500x500	55x1,500x500	
Weight		kg	6.5	6.5	
Standard Accessories		Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Screws. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Screws. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Screws. Washers.	
Drawing No.		C : 3D039431			

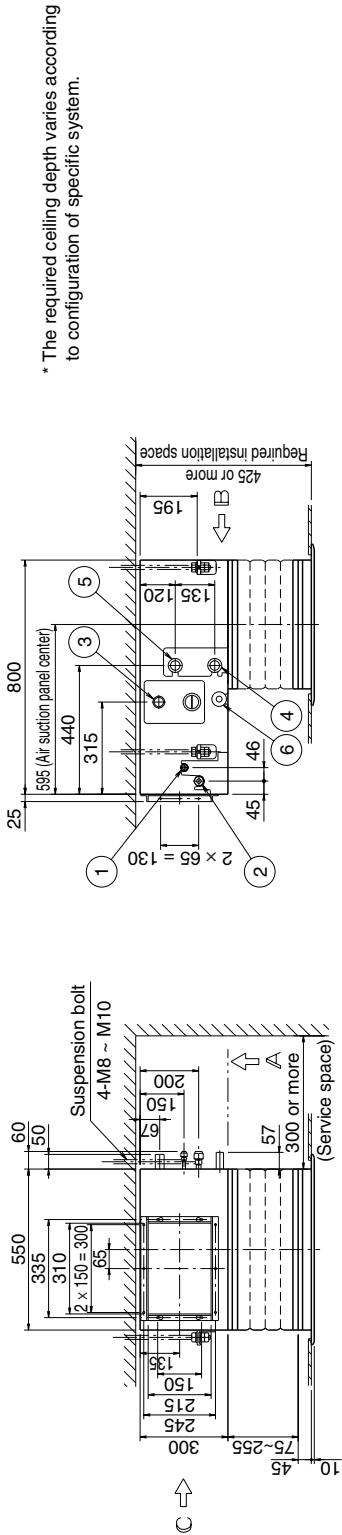
Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
 *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
 *3 External static pressure is changeable to change over the connectors inside electrical box, this pressure means "High static pressure-Standard".
 4 Capacities are net, including a deduction for cooling (an additional for heating) for indoor fan motor heat.
 *5 Anechoic chamber conversion value, measured at a point 1.5 m downward from the unit center. These values are normally somewhat higher during actual operation as a result of ambient conditions.
 6 Refer to page 218 for Fan Motor Input.

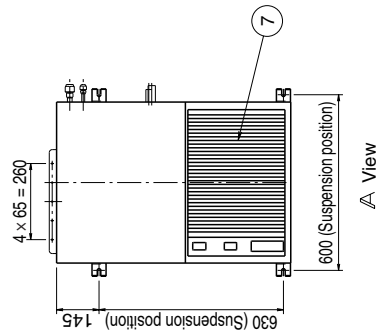
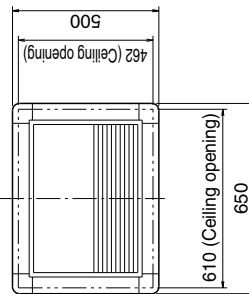
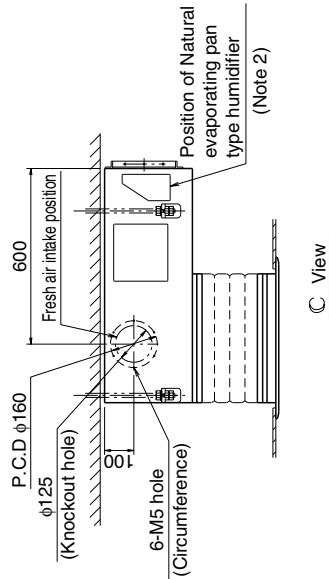
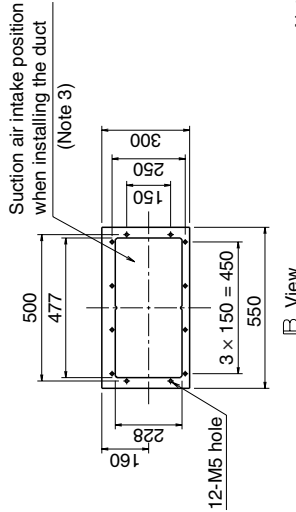
Conversion Formulae
kcal/h=kWx860 Btu/h=kWx3412 cfm=m ³ /minx35.3

3. Dimensions

FXSQ20M + BYBS32DJW1 (With Canvas Duct)
 FXSQ25M + BYBS32DJW1 (With Canvas Duct)
 FXSQ32M + BYBS32DJW1 (With Canvas Duct)



* The required ceiling depth varies according to configuration of specific system.



Unit (mm)

Number	Name	Description
1	Liquid pipe connection	φ6.4 flare connection
2	Gas pipe connection	φ12.7 flare connection
3	Drain pipe connection	VP25 (O. D. φ32 I. D. φ25)
4	Interunit wiring port	
5	Power wiring port	
6	Drain hole	VP25 (O. D. φ32 I. D. φ25)
7	Air filter	

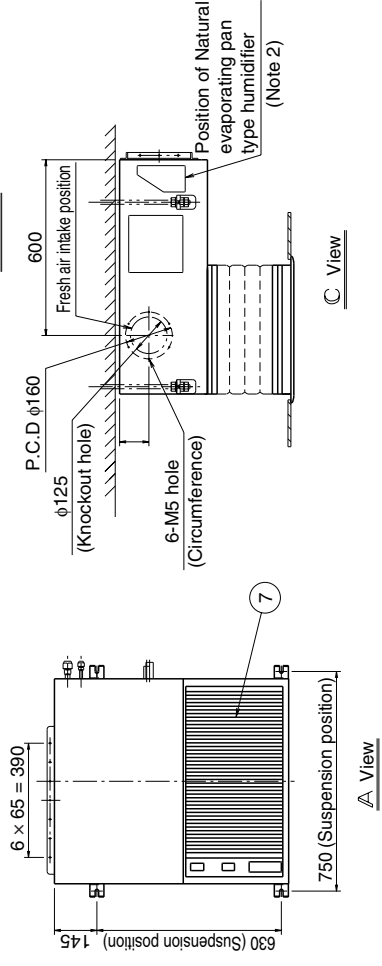
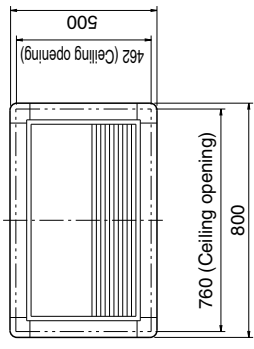
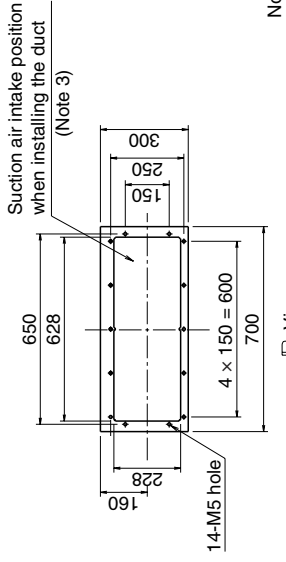
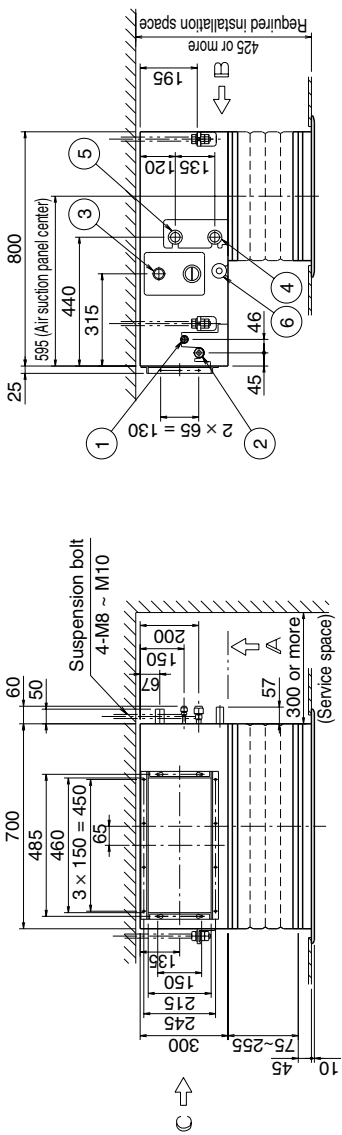
Notes:

1. Location of unit's Name Plate: Fan housing surface inside of filter.
2. When installing an optional accessory, refer to the installation drawings.
3. Refer to the separate drawing when installing the duct.
4. "Decoration panel" and "Air suction canvas" are optional accessories.

3D039437

FXSQ40M + BYBS45DJW1 (With Canvas Duct)
FXSQ50M + BYBS45DJW1 (With Canvas Duct)

* The required ceiling depth varies according to configuration of specific system.



- Notes:
1. Location of unit's Name Plate: Fan housing surface inside of filter.
 2. When installing an optional accessory, refer to the installation drawings.
 3. Refer to the separate drawing when installing the duct.
 4. "Decoration panel" and "Air suction canvas" are optional accessories.

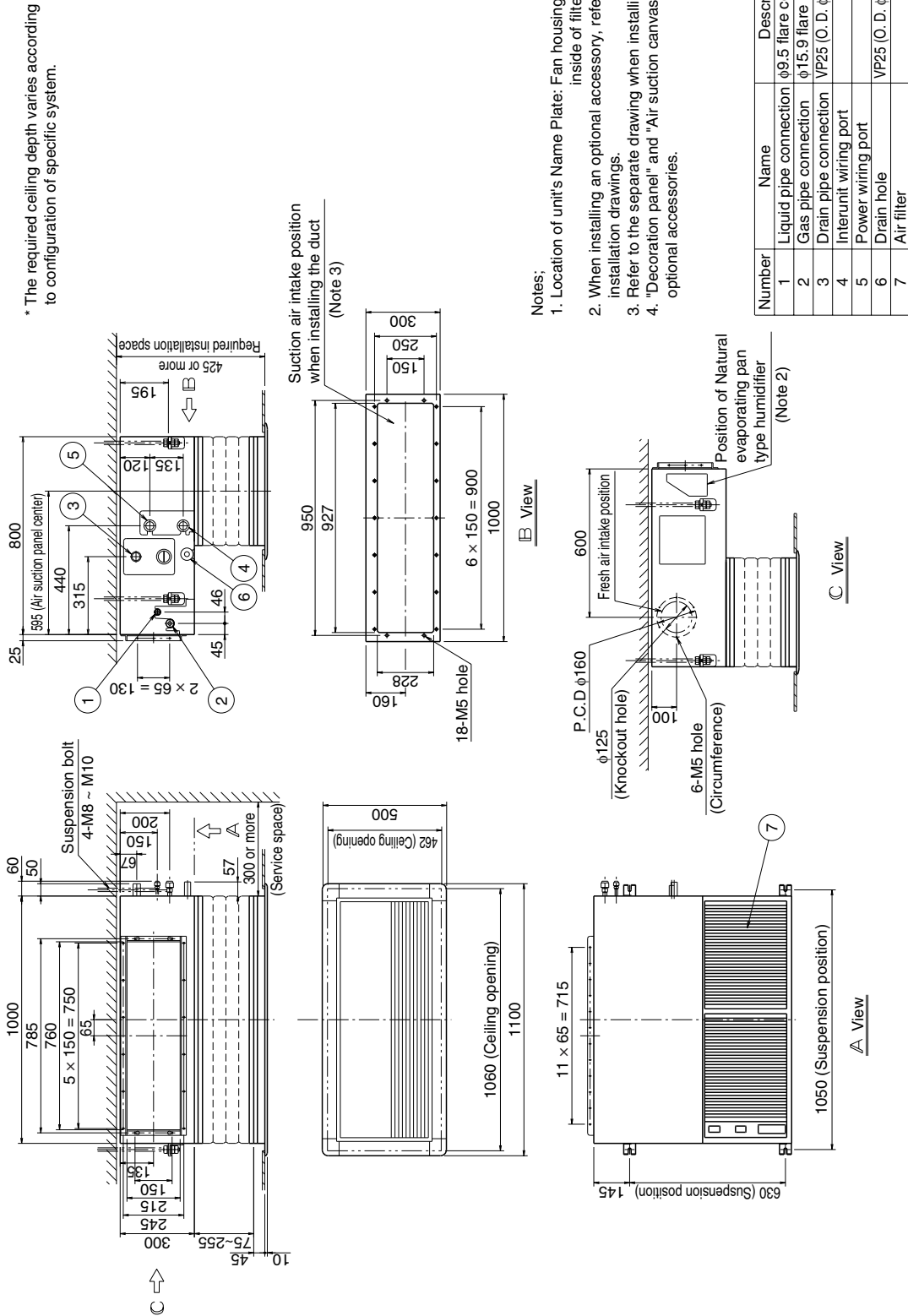
Unit (mm)

Number	Name	Description
1	Liquid pipe connection	φ6.4 flare connection
2	Gas pipe connection	φ12.7 flare connection
3	Drain pipe connection	VP25 (O. D. φ32 I. D. φ25)
4	Interunit wiring port	
5	Power wiring port	
6	Drain hole	VP25 (O. D. φ32 I. D. φ25)
7	Air filter	

3D039438

FXSQ63M + BYBS71DJW1 (With Canvas Duct)

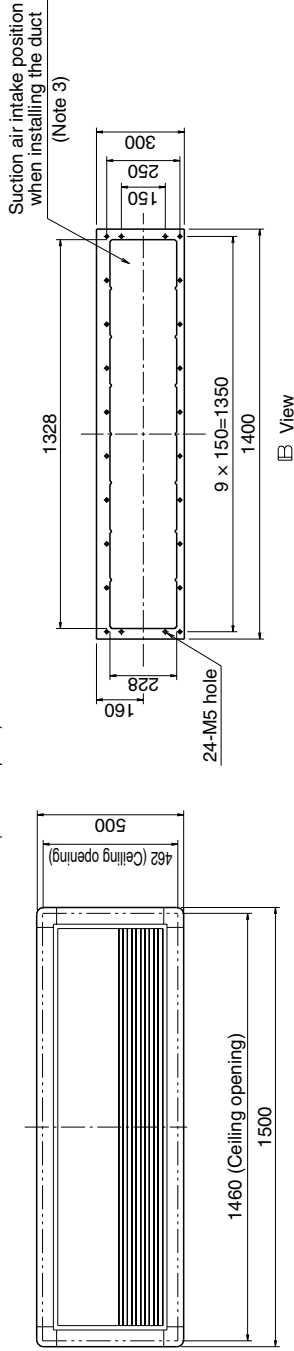
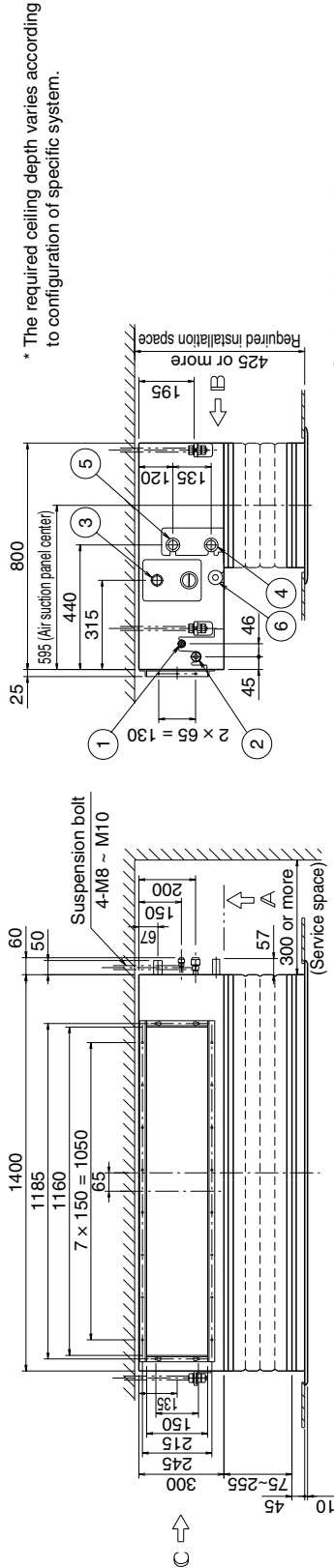
Unit (mm)



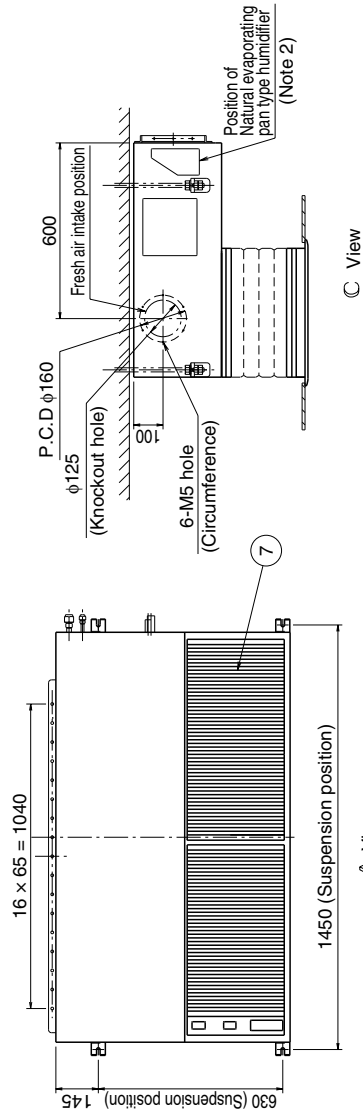
3D039439A

FXSQ80M + BYBS125DJW1 (With Canvas Duct)
FXSQ100M + BYBS125DJW1 (With Canvas Duct)
FXSQ125M + BYBS125DJW1 (With Canvas Duct)

Unit (mm)



- Notes:
1. Location of unit's Name Plate: Fan housing surface inside of filter.
 2. When installing an optional accessory, refer to the installation drawings.
 3. Refer to the separate drawing when installing the duct.
 4. "Decoration panel" and "Air suction canvas" are optional accessories.



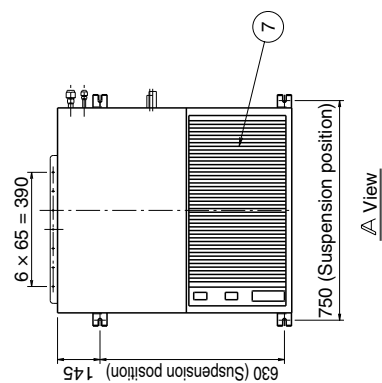
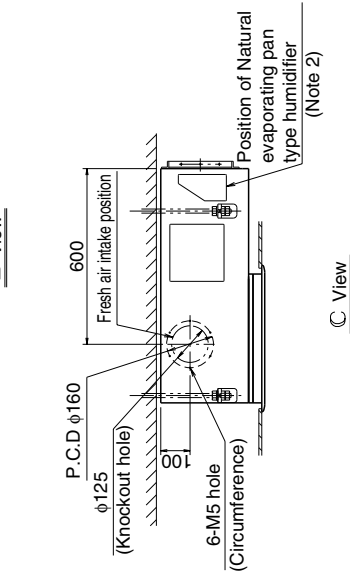
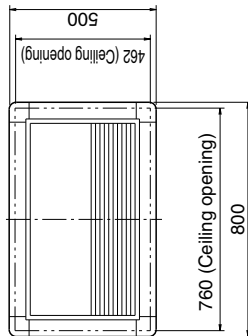
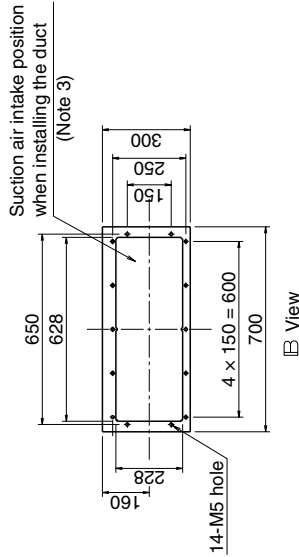
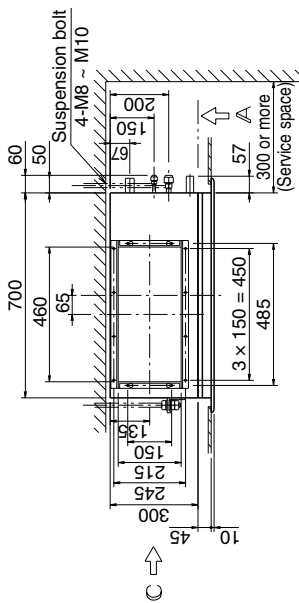
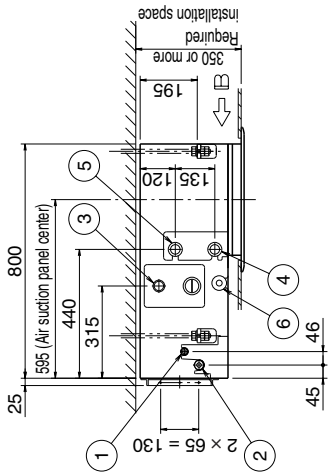
Number	Name	Description
1	Liquid pipe connection	φ9.5 flare connection
2	Gas pipe connection	φ15.9 flare connection
3	Drain pipe connection	VP25 (O. D. φ32 I. D. φ25)
4	Interunit wiring port	
5	Power wiring port	
6	Drain hole	VP25 (O. D. φ32 I. D. φ25)
7	Air filter	

3D039440

FXSQ40M + BYBS45DJW1 (Without Canvas Duct)

FXSQ50M + BYBS45DJW1 (Without Canvas Duct)

* The required ceiling depth varies according to configuration of specific system.



Unit (mm)

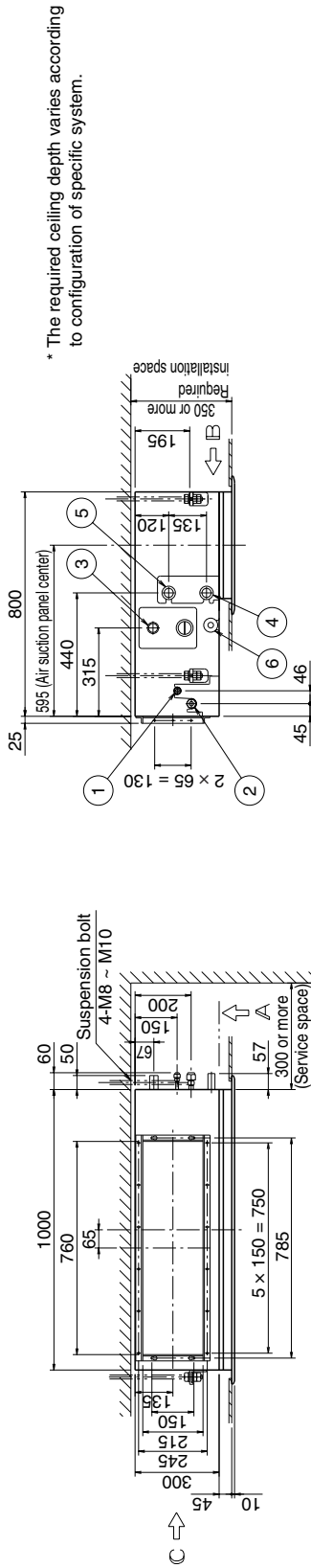
Number	Name	Description
1	Liquid pipe connection	φ5.4 flare connection
2	Gas pipe connection	φ12.7 flare connection
3	Drain pipe connection	VP25 (O. D. φ32 I. D. φ25)
4	Interunit wiring port	
5	Power wiring port	
6	Drain hole	VP25 (O. D. φ32 I. D. φ25)
7	Air filter	

- Notes:
1. Location of unit's Name Plate: Fan housing surface inside of filter.
 2. When installing an optional accessory, refer to the installation drawings.
 3. Refer to the separate drawing when installing the duct.
 4. "Decoration panel" and "Air suction canvas" are optional accessories.

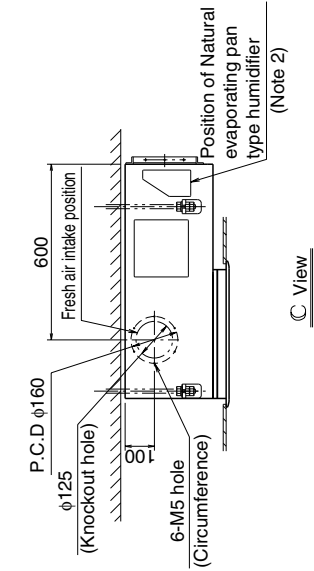
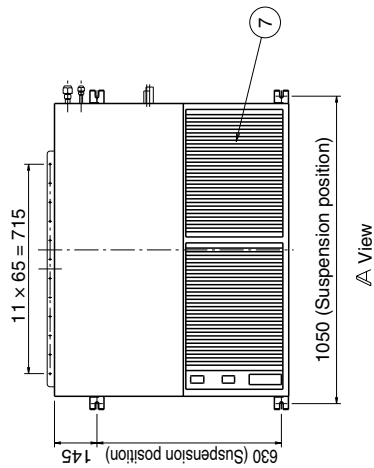
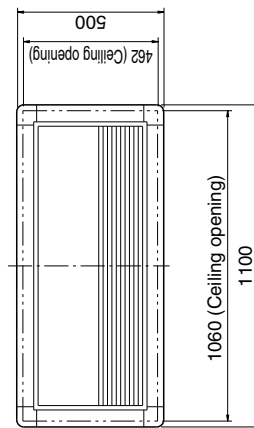
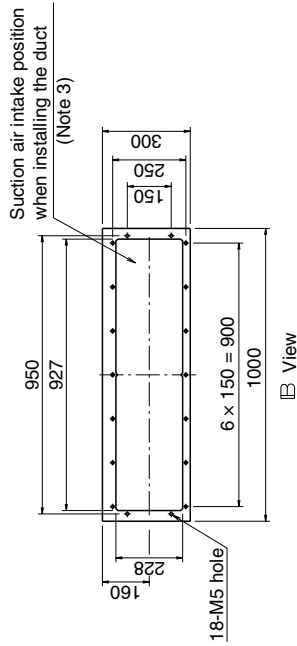
3D039434

FXSQ63M + BYBS71DJW1 (Without Canvas Duct)

Unit (mm)



* The required ceiling depth varies according to configuration of specific system.

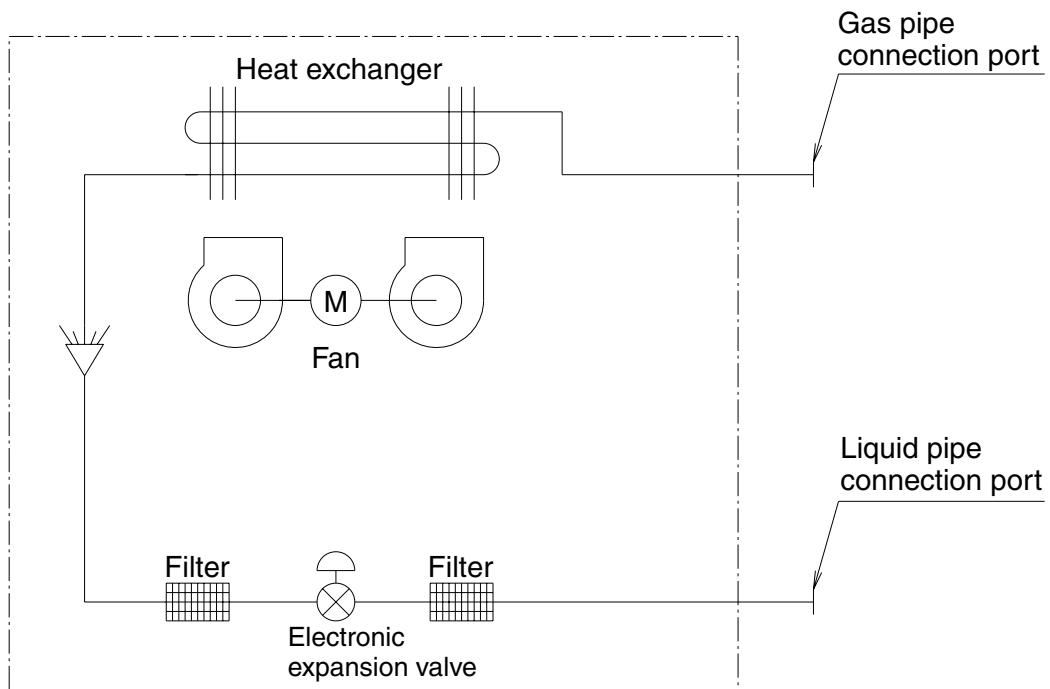


- Notes;
1. Location of unit's Name Plate: Fan housing surface inside of filter.
 2. When installing an optional accessory, refer to the installation drawings.
 3. Refer to the separate drawing when installing the duct.
 4. "Decoration panel" and "Air suction canvas" are optional accessories.

Number	Name	Description
1	Liquid pipe connection	φ9.5 flare connection
2	Gas pipe connection	φ15.9 flare connection
3	Drain pipe connection	VP25 (O. D. φ32 I. D. φ25)
4	Interunit wiring port	
5	Power wiring port	
6	Drain hole	VP25 (O. D. φ32 I. D. φ25)
7	Air filter	

3D039435A

4. Piping Diagrams



4D034245C

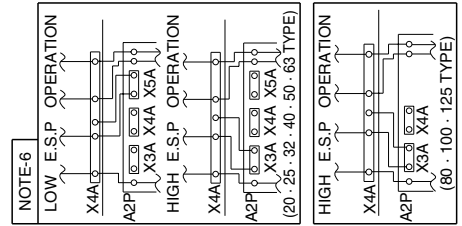
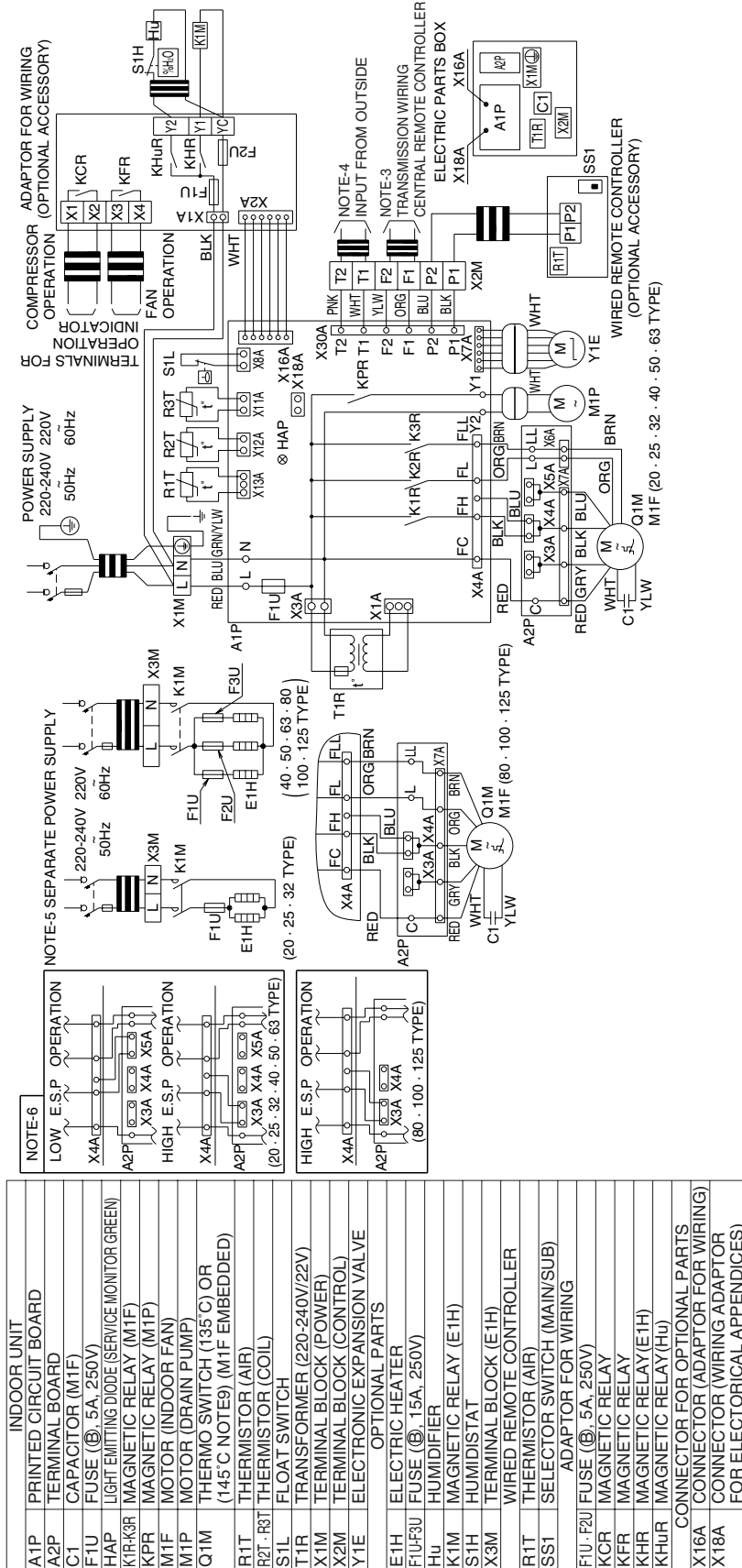
■ Refrigerant pipe connection port diameters

(mm)

Model	Gas	Liquid
FXSQ20 · 25 · 32 · 40 · 50M	φ12.7	φ6.4
FXSQ63 · 80 · 100 · 125M	φ15.9	φ9.5

5. Wiring Diagrams

FXSQ20 · 25 · 32 · 40 · 50 · 63 · 80 · 100 · 125MVE



INDOOR UNIT	
A1P	PRINTED CIRCUIT BOARD
A2P	TERMINAL BOARD
C1	CAPACITOR (M1F)
F1U	FUSE (Φ. 5A, 250V)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR GREEN)
K1R·K3R	MAGNETIC RELAY (M1F)
M1F	MAGNETIC RELAY (M1P)
M1P	MOTOR (INDOOR FAN)
M1P	MOTOR (DRAIN PUMP)
Q1M	THERMO SWITCH (135°C) OR (145°C NOTES) (M1F EMBEDDED)
R1T	THERMISTOR (AIR)
R2T·R3T	THERMISTOR (COIL)
S1L	FLOAT SWITCH
T1R	TRANSFORMER (220-240V/22V)
X1M	TERMINAL BLOCK (POWER)
X2M	TERMINAL BLOCK (CONTROL)
Y1E	ELECTRONIC EXPANSION VALVE
OPTIONAL PARTS	
E1H	ELECTRIC HEATER
F1UF3U	FUSE (Φ. 15A, 250V)
HU	HUMIDIFIER
K1M	MAGNETIC RELAY (E1H)
S1H	HUMIDISTAT
X3M	WIRE REMOTE CONTROLLER
R1T	THERMISTOR (AIR)
SS1	SELECTOR SWITCH (MAIN/SUB)
ADAPTOR FOR WIRING	
F1U·F2U	FUSE (Φ. 5A, 250V)
KCR	MAGNETIC RELAY
KFR	MAGNETIC RELAY
KHR	MAGNETIC RELAY (E1H)
KHuR	MAGNETIC RELAY (Hu)
CONNECTOR FOR OPTIONAL PARTS	
X16A	CONNECTOR (ADAPTOR FOR WIRING)
X18A	CONNECTOR (WIRING ADAPTOR FOR ELECTRICAL APPENDICES)

- NOTES)
- : TERMINAL BLOCK, □ : CONNECTOR, ○ : TERMINAL
 - : FIELD WIRING
 - IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTRUCTION MANUAL.
 - WHEN 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 THE UNIT.
 - IN CASE INSTALLING THE ELECTRIC HEATER, EXECUTE THE ADDITIONAL WIRING FOR HEATER CIRCUIT (K1M, E1H). IN THIS CASE, THE MAIN POWER SUPPLY HAS TO BE SUPPLIED INDEPENDENTLY.
 - IN CASE HIGH OR LOW E.S.P. OPERATION, CHANGE OVER THE WIRING CONNECTION FROM X4A (OF A2P) TO X3A OR X5A.
 - SYMBOLS SHOW AS FOLLOWS. (PNK : PINK WHT : WHITE YLW : YELLOW GRY : GRAY ORG : ORANGE BLU : BLUE BLK : BLACK RED : RED BRN : BROWN GRN : GREEN)
 - USE COPPER CONDUCTORS ONLY.
 - ONLY 80, 100, 125 TYPE.

6. Electric Characteristics

Model	Units				Power supply		IFM		Input(W)	
	Type	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
FXSQ20M	VE	50	220-240	MAX. 264 Min. 198	0.5	15	0.05	0.4	110	90
FXSQ25M					0.5	15	0.05	0.4	110	90
FXSQ32M					0.5	15	0.05	0.4	114	94
FXSQ40M					0.6	15	0.065	0.5	127	107
FXSQ50M					0.9	15	0.085	0.7	143	123
FXSQ63M					1.1	15	0.125	0.9	189	169
FXSQ80M					1.4	15	0.225	1.1	234	214
FXSQ100M					1.5	15	0.225	1.2	242	222
FXSQ125M					2.0	15	0.225	1.6	321	301

Symbols :

- MCA : Min. Circuit Amps (A)
 MFA : Max. Fuse Amps (See note 5)
 KW : Fan Motor Rated Output(KW)
 FLA : Full Load Amps(A)
 IFM : Indoor Fan Motor

Note :

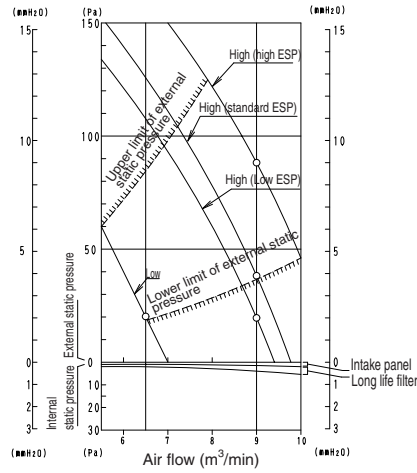
- Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits,
- Maximum allowable voltage unbalance between phases is 2%.
- MCA/MFA
 $MCA = 1.25 \times FLA$
 $MFA \leq 4 \times FLA$
 (Next lower standard fuse rating. Min. 15A)
- Select wire size based on the MCA.
- Instead of fuse, use Circuit Breaker.

C : 4D036936A

8. Fan Performances

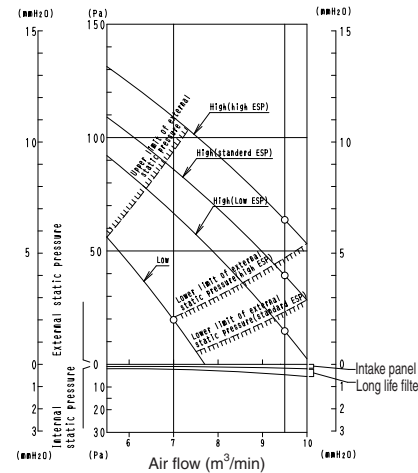
8.1 50Hz

FXSQ20 - 25M



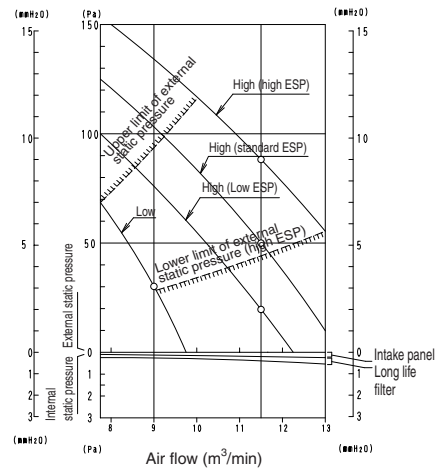
C : 3D036959-5

FXSQ32M



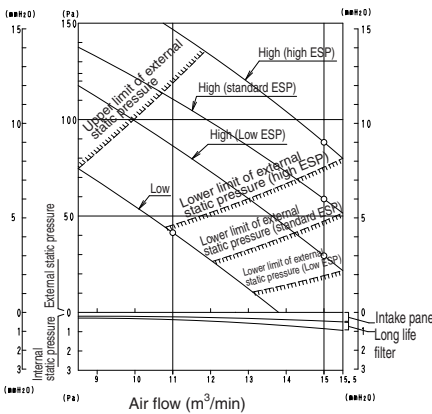
C : 3D036960-5

FXSQ40M



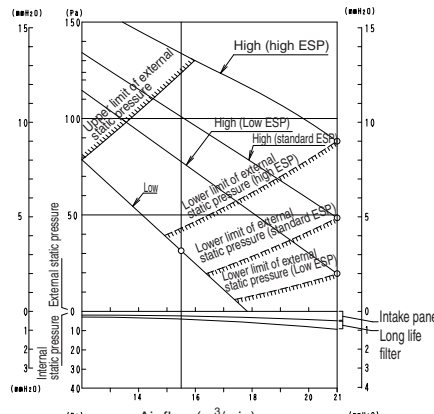
C : 3D036961-5

FXSQ50M



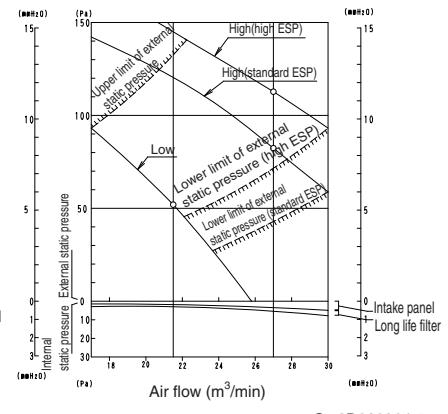
C : 3D036962-5

FXSQ63M



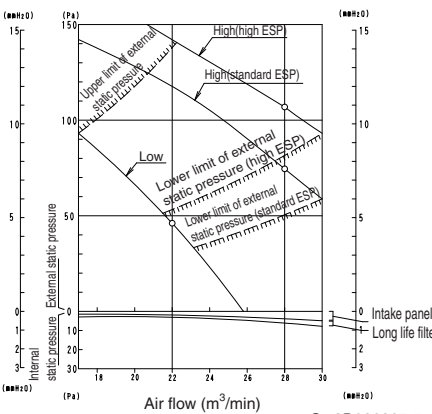
C : 3D036963-5

FXSQ80M



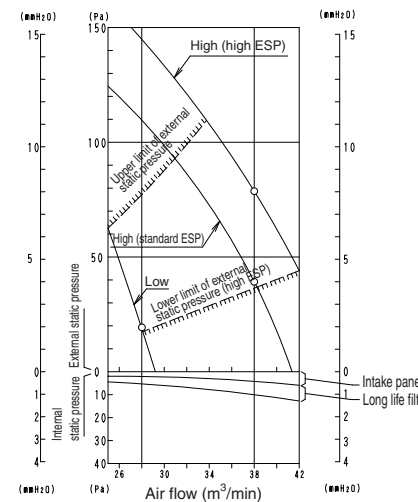
C : 3D036964-5

FXSQ100M



C : 3D036965-5

FXSQ125M



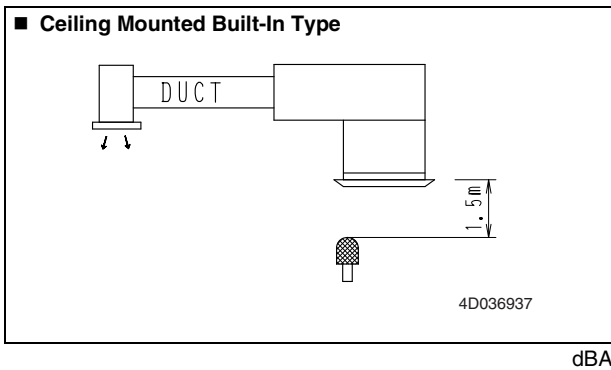
C : 3D036966-5

Note:

1. The remote controller can be used to switch between “high” and “low”.
2. The air flow is set to “standard” before leaving the factory. It is possible to switch between “standard ESP” and “high ESP” by changing the terminals in the indoor unit electrical box.
3. The external static pressure indicates the characteristics of the fan when a suction panel (optional accessory) and a canvas for the suction panel (optional accessory) are incorporated into the main unit (with a long-life filter).

9. Sound Levels

Overall



Note:

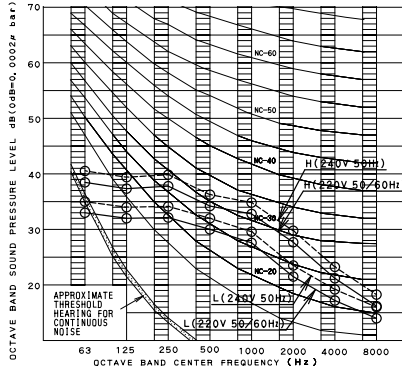
1. The operating conditions are assumed to be standard (JIS conditions).
2. These operating values were obtained in a dead room (conversion values).
Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

Model	220V, 50Hz		240V, 50Hz	
	H	L	H	L
FXSQ20M FXSQ25M	37	32	39	34
FXSQ32M FXSQ40M	38	32	40	34
FXSQ50M	41	36	43	38
FXSQ63M	42	35	44	37
FXSQ80M FXSQ100M	43	37	45	39
FXSQ125M	46	41	48	43

Octave Band Level

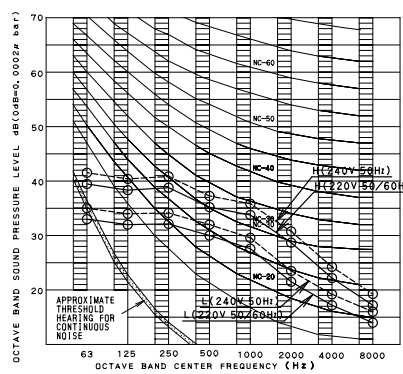
- — ○ 220V 50Hz
- - - - ○ 240V 50Hz

FXSQ20 · 25MVE



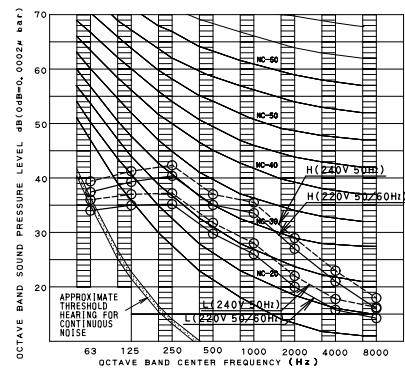
4D036937

FXSQ32MVE



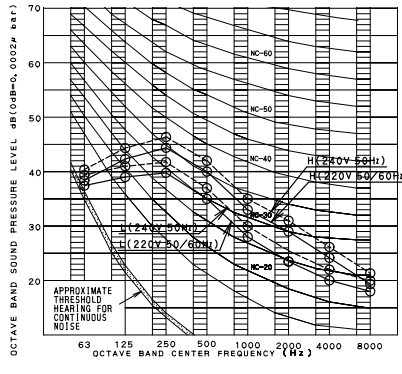
4D036938

FXSQ40MVE



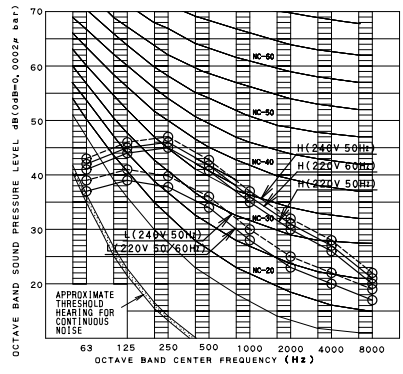
4D036939

FXSQ50MVE



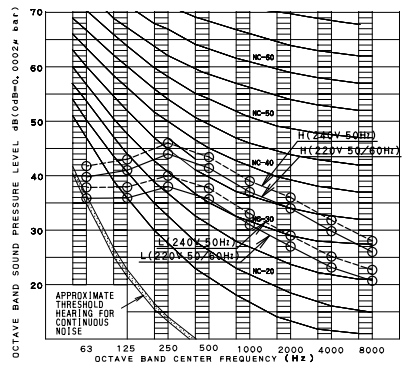
4D036940

FXSQ63MVE



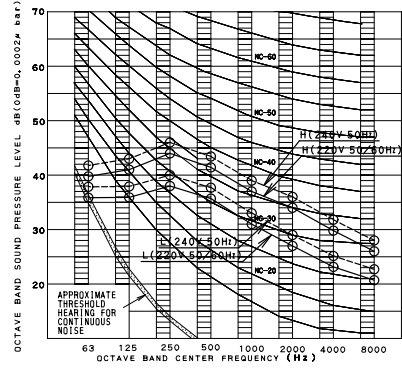
4D036941

FXSQ80MVE



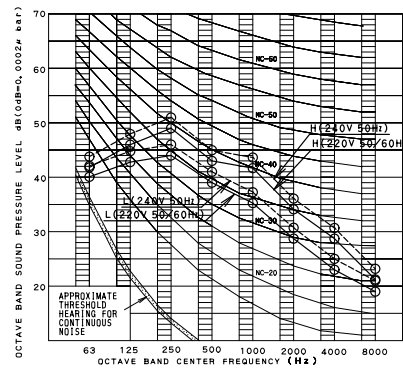
4D036942

FXSQ100MVE



4D036943

FXSQ125MVE

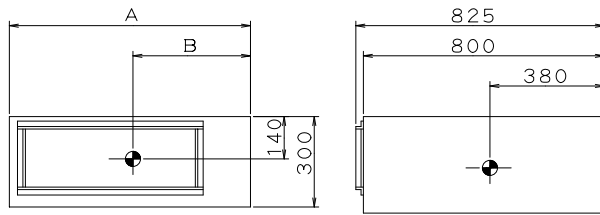


4D036944

10. Installation

Center of Gravity

Unit (mm)

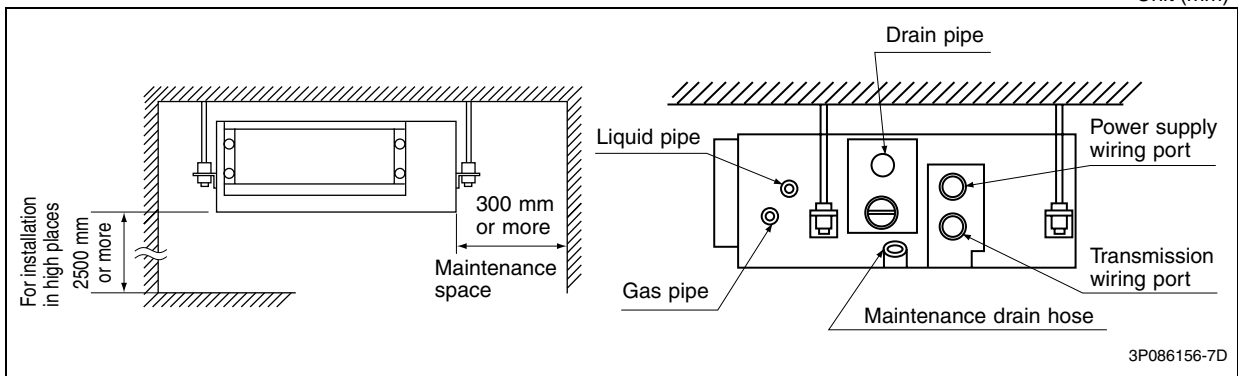


M O D E L	A	B
FXSQ20 · 25 · 32MVE	550	250
FXSQ40 · 50MVE	700	300
FXSQ63MVE	1000	460
FXSQ80 · 100 · 125MVE	1400	640

C : 4D036946F

Service Space

Unit (mm)



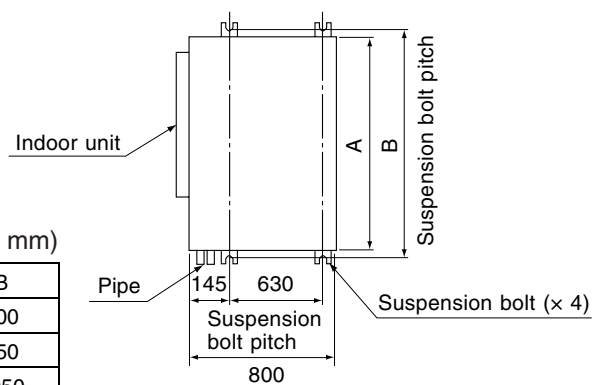
Note:

Above figure means minimum value. Please keep these value at least.

Bolt Pitch

(Unit : mm)

Model	A	B
FXSQ20 · 25 · 32MVE	550	600
FXSQ40 · 50MVE	700	750
FXSQ63MVE	1000	1050
FXSQ80 · 100 · 125MVE	1400	1450



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- For standard installation (air inlet on the bottom side), choose one of the below two means of installation.

Note: For other than standard installation, contact your Daikin dealer for details.

Drain Pump Kit

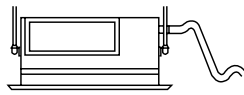
Indoor unit	Drain pump kit
FXSQ-M	Standard (Equipped with indoor unit)

Drain Piping Work

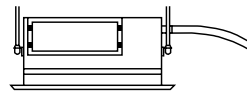
<<Rig the drain pipe as shown below and take measures against condensation. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.>>

(1) Carry out the drain piping

- The diameter of the drain pipe should be greater than or equal to the diameter of the connecting pipe (vinyl tube ; pipe size : 25 mm ; outer dimension : 32 mm).
- Keep the drain pipe short and sloping downwards at a gradient of at least 1 / 100 to prevent air pockets from forming.
- If the drain hose cannot be sufficiently set on a slope, execute the drain raising piping.
- To keep the drain hose from sagging, space hanging wires every 1 to 1.5 m.



No Good

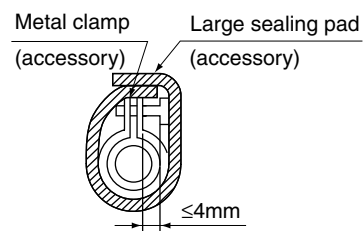
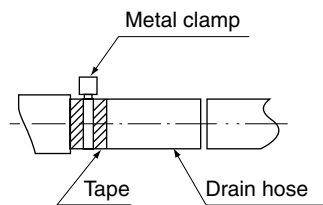


Good

CAUTION

Setting the unit at an angle opposite to the drain piping might cause leaks.

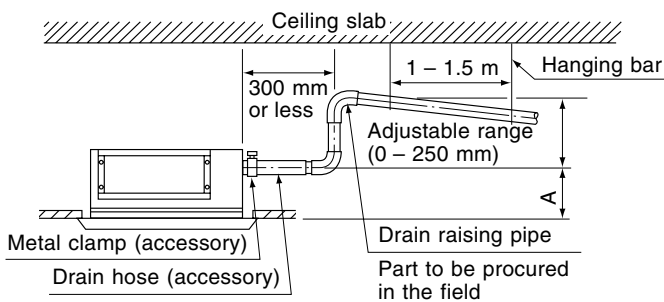
- Use the drain hose and the metal clamp. Tighten the clamp firmly. Insert the drain hose into the drain socket, up to the tape. Tighten the clamp until the screw head is less than 4 mm from the hose.
- Wrap the sealing pad over the metal clamp and drain hose to insulate.
- Insulate the drain hose inside the building.



< PRECAUTIONS FOR DRAIN RAISING PIPING >

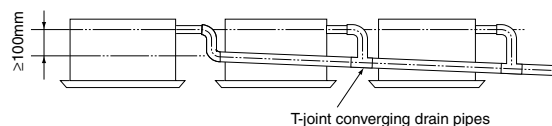
(HOW TO INSTALL PIPING)

- (1) Connect the drain hose to the drain raising pipes, and insulate them.
- (2) Connect the drain hose to the drain outlet on the indoor unit, and tighten it with the metal clamp.
- (3) Insulate both metal clamp and drain hose with the sealing pad.



	A (mm)
When canvas duct is installed	350 – 530
When air inlet panel is directly installed	275

- If converging multiple drain pipes, install according to the procedure shown below.



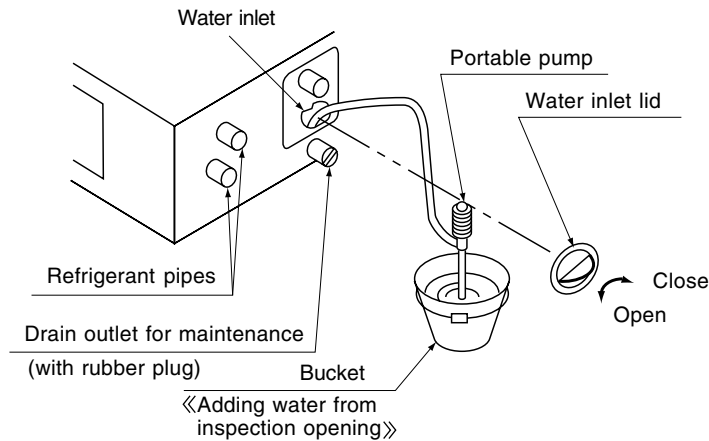
Select converging drain pipes whose gauge is suitable for the operating capacity of the unit.

CAUTION

- Drain piping connections
Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.
- Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.

(2) After piping work is finished, check drainage flows smoothly.

- Open the water inlet lid, add approximately 1 liter of water gradually and check drainage flow.



Note: Use this outlet to drain water from the drain pan.

[WHEN ELECTRIC WIRING WORK IS FINISHED]


- Check drainage flow during COOL running, explained under “TEST OPERATION.”





[WHEN ELECTRIC WIRING WORK IS NOT FINISHED]

- Remove the electric parts box lid, connect a power supply and remote controller to the terminals.

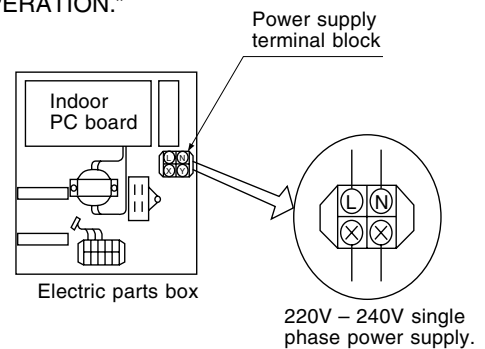
(Refer to the “HOW TO CONNECT WIRINGS”)

Be sure attach the electric parts box lid before turning on the power.

Next, press the inspection / test operation button “” on the remote controller. The unit will engage the test operation mode.

Press the operation mode selector button “” until selecting FAN OPERATION “”. Then, press the ON/OFF button “”. The indoor unit fan and drain pump will start up. Check that the water has drained from the unit. Press “” to go back to the first mode.

- You can check whether drainage is satisfactory or not by removing the access opening lid and checking the water level of the drain pan through the access opening.
- **Be careful when doing so because the fan is turning at the same time.**














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11. Accessories

Standard Accessories

FXSQ20~125M

Name	Metal clamp	Paper pattern for installation	Drain hose	Insulation for fitting	Sealing pad	Screws for duct flanges								
Quantity	1 pc.	1 pc.	1 pc.	1 each.	1 each.	1 set								
Shape				 for gas pipe  for liquid pipe	 Large  mid	<table border="1"> <tr> <td>FXSQ20 · 25 · 32MVE</td> <td>6</td> </tr> <tr> <td>FXSQ40 · 50MVE</td> <td>8</td> </tr> <tr> <td>FXSQ63MVE</td> <td>12</td> </tr> <tr> <td>FXSQ80 · 100 · 125MVE</td> <td>16</td> </tr> </table> 	FXSQ20 · 25 · 32MVE	6	FXSQ40 · 50MVE	8	FXSQ63MVE	12	FXSQ80 · 100 · 125MVE	16
FXSQ20 · 25 · 32MVE	6													
FXSQ40 · 50MVE	8													
FXSQ63MVE	12													
FXSQ80 · 100 · 125MVE	16													

Name	Washer for hanging bracket	Clamp	Screws for fixing the paper pattern for installation	(Other)
Quantity	8 pcs.	6 pcs.	6 pcs.	<ul style="list-style-type: none"> • Operation manual • Installation manual • Sealing material (Small 35×150)
Shape				

- Screws for fixing panels are attached to decoration panel.

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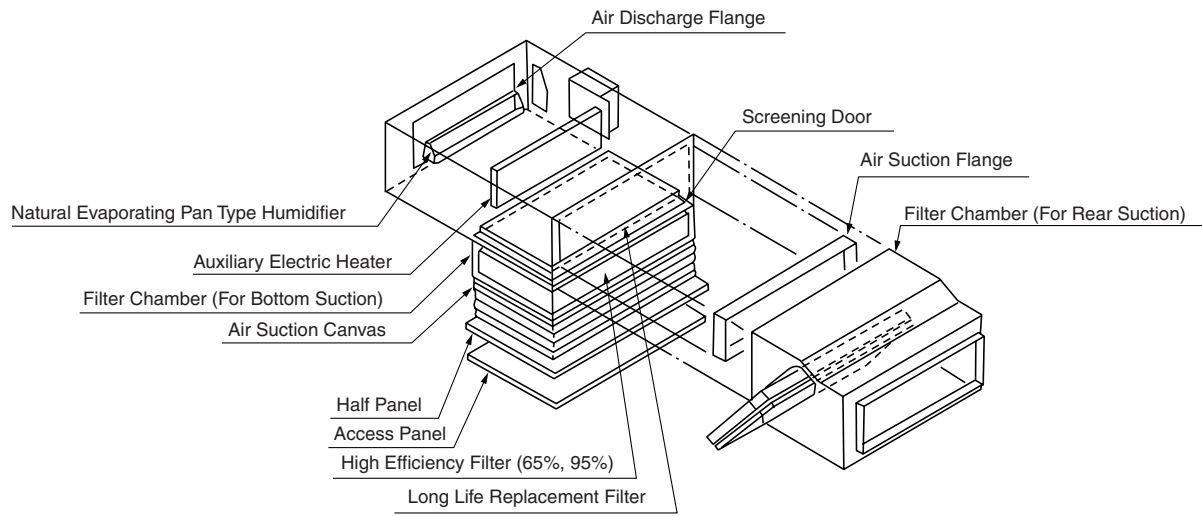
Optional Accessories (For Unit)

No.	Item	Type	FXSQ20M FXSQ25M FXSQ32M	FXSQ40M FXSQ50M	FXSQ63M	FXSQ80M FXSQ100M	FXSQ125M	
1	Panel related	Decoration panel	BYBS32DJW1	BYBS45DJW1	BYBS71DJW1	BYBS125DJW1		
		Access panel	KTBJ25K36W	KTBJ25K56W	KTBJ25K80W	KTBJ25K160W		
2	*1 Auxiliary electric heater	Model	240V/220V	KEA25K32VE	KEA25K50VE	KEA25K63VE	KEA25K100VE	KEA25K125VE
		Capacity	kW	0.75	1.2	1.4	2.1	2.8
3	Filter related	*2 High efficiency filter 65%	KAFJ252L36	KAFJ252L56	KAFJ252L80	KAFJ252L160		
		*2 High efficiency filter 90%	KAFJ253L36	KAFJ253L56	KAFJ253L80	KAFJ253L160		
		Long life replacement filter	KAFJ251K36	KAFJ251K56	KAFJ251K80	KAFJ251K160		
		Filter chamber	For bottom suction	KAJ25L36D	KAJ25L56D	KAJ25L80D	KAJ25L160D	
			For rear suction	KAJ25L36B	KAJ25L56B	KAJ25L80B	KAJ25L160B	
4	Air inlet and air discharge outlet related	Air suction canvas	KSA-25K36	KSA-25K56	KSA-25K80	KSA-25K160		
		Screening door	KBBJ25K36	KBBJ25K56	KBBJ25K80	KBBJ25K160		
		Air suction flange	KDJ2507K36	KDJ2507K56	KDJ2507K80	KDJ2507K160		
		Air discharge adaptor	KDAJ25K36A	KDAJ25K56A	KDAJ25K71A	KDAJ25K140A		
5	Natural evaporating pan type humidifier *1	KNM25K32V1	KNM25K50V1	KNM25K63V1	KNM25K125V1			

Note:

- *1 One adaptor for wiring (KRP1B61) per indoor unit is required if installing an electric heater or a natural evaporating pan type humidifier. An electric heater cannot be used for VRV system cooling only.
- *2 If installing a high filter in the ceiling mounted built-in type, an assembly chamber for either bottom or rear suction is required.

Optional Accessories (For Controls) : Refer to P.645

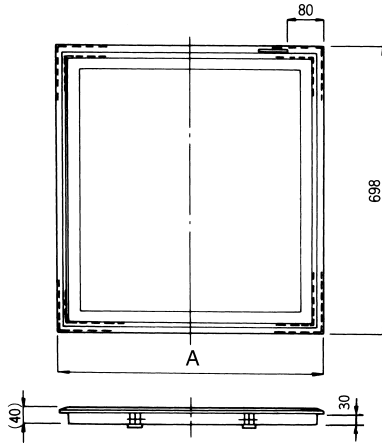


Access Panel

Specifications

Item	Model	KTBJ25K36W	KTBJ25K56W	KTBJ25K80W	KTBJ25K160W
Color	White				
Applicable Model	20~32 Class	40 · 50 Class	63 Class	80~125 Class	

Dimension

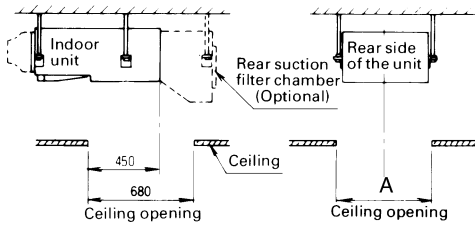


Model	A
KTBJ25K36W	626
KTBJ25K56W	776
KTBJ25K80W	1076
KTBJ25K160W	1476

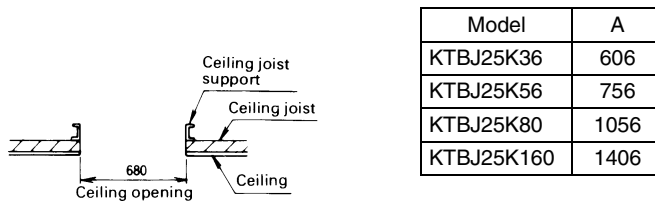
Installation

[Before installation]

1. Make an opening on the ceiling



2. Install ceiling joist supports to fit the ceiling opening



[Installation of the ceiling board]

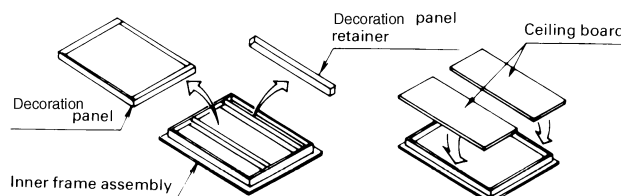
The ceiling board can be installed into the inner frame assembly as follows.

1. Remove decoration panel retainer from the inner frame assembly.
2. Remove the decoration panel and substitute with the ceiling board.
3. Set the ceiling board by retainer removed in step 1 of above.



CAUTION

When the ceiling board is installed, the decoration panel is not needed.

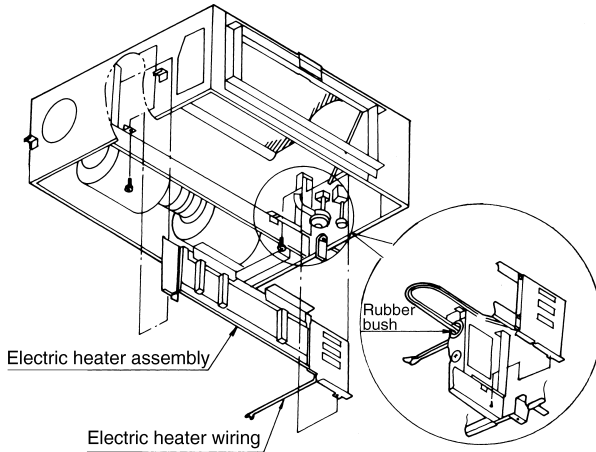


Auxiliary Electric Heater (A wiring adaptor is needed)

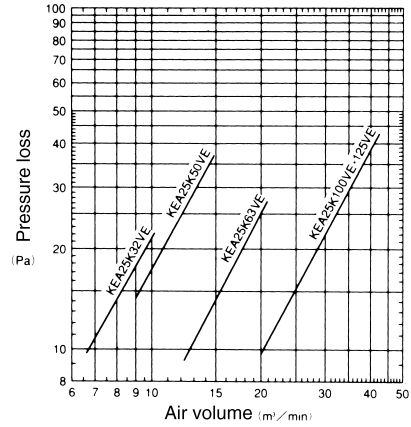
Specifications

Items	Model	KEA25K32VE	KEA25K50VE	KEA25K63VE	KEA25K100VE	KEA25K125VE
Heater Capacity (kW)		0.75	1.2	1.4	2.1	2.8
Power Supply		Single Phase, 220-240V/220V 50/60Hz				
Applicable Models		20 · 25 · 32 Class	40 · 50 Class	63 Class	80 · 100 Class	125 Class

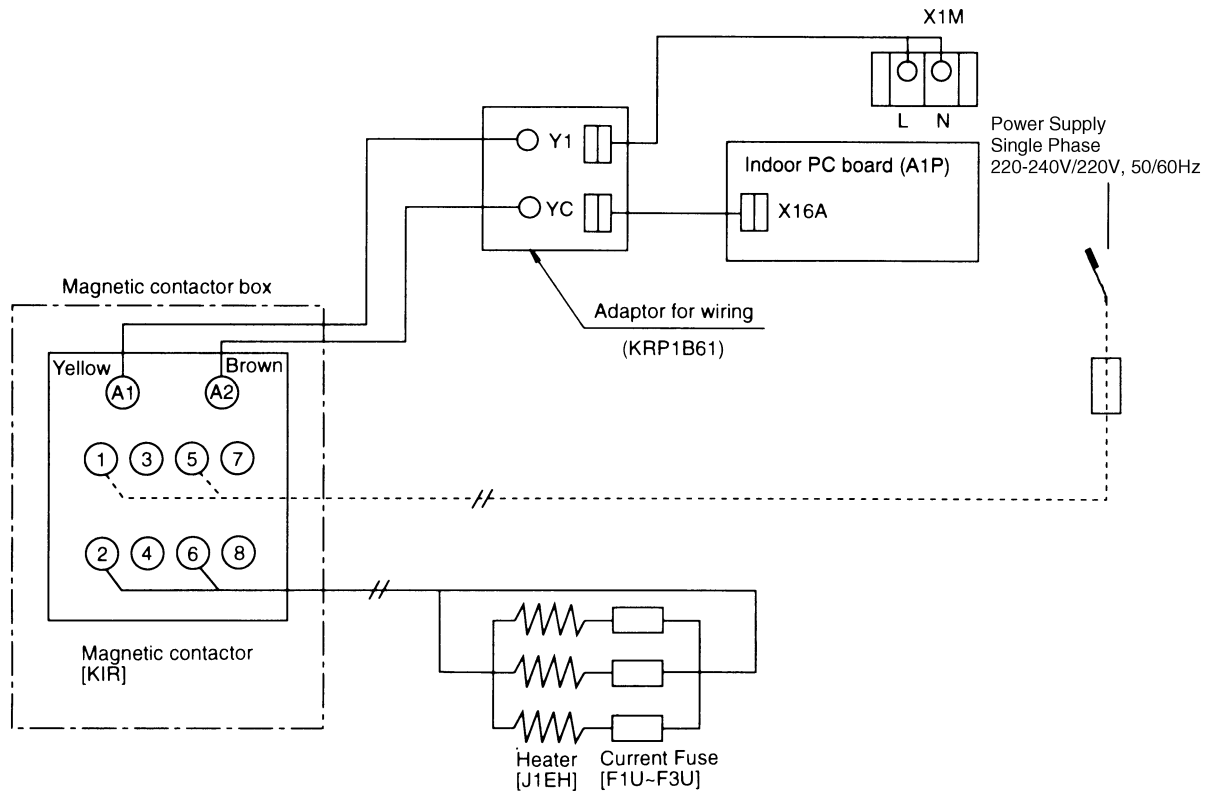
Installation



Characteristics of filter



Wiring



Precaution at use

1. When the aux. electric heater will be installed, "Wiring adaptor (KRP1B61)" is separately needed for one indoor unit by one piece of the adaptor.

Natural Evaporating Pan Type Humidifier (Wiring adaptor is required.)

Specifications

Item	Model	KNM25K32V1	KNM25K50V1	KNM25K63V1	KNM25K125V1
Humidifying Capacity (L/h)		0.4	0.6	1.0	1.8
Power Supply (W)		Single Phase, 220-240V 50Hz			
Power Consumption		12/9.6			
Water Inlet Port		1/2B			
Water Outlet Port		VP25 (External dia. ϕ 32) (drain pipe at indoor unit)			
Applicable Models		20 · 25 · 32 Class	40 · 50 Class	63 Class	80 · 100 · 125 Class

Precaution at use

1. "Wiring adaptor (KRP1B61)" is separately needed for one indoor unit by one piece of the adaptor.
2. This humidifier will be built in a indoor unit, while the solenoid valve box will be mounted out of the unit's body (refer to the dimensions of optional accessories).
3. The field setting should be changed by a remote controller.

Note:

The value in JIS heating condition's standard.

Feed water piping

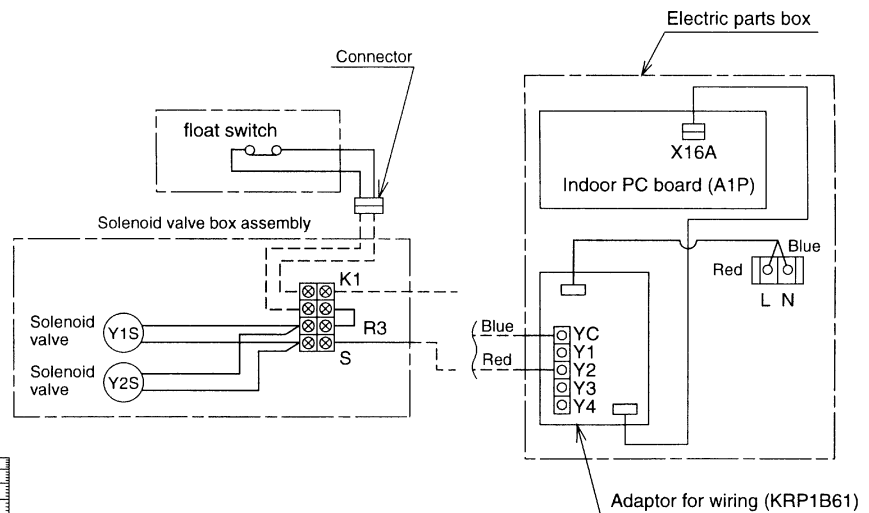
1. Provide a stop valve of feed water for the feed water circuit.
2. Supply clean water for the feed water. Contaminated water clogs a valve and the contaminants accumulate in a water tank, disturbing a normal operation of the humidifier. (Never use cooling water for a cooling tower or hot water for heating purpose). Moreover, since white powder will appear if the feed water contains much silica, it is recommended to install a water purifier or a water softener if these phenomena are found.
3. Use water in the range of water temperature 5 ~ 50°C and water pressure 0.049 ~ 0.294 MPa[0.5 ~3kg/cm²]. Provide a reducing valve between a strainer and this kit, in case of 0.294MPa or more for feed water pressure.
4. The feed water pipe can not be connected to a public water route. Accordingly, if water must be supplied through a public water by all means, provide a cistern tank (approved model only).

Wiring diagram

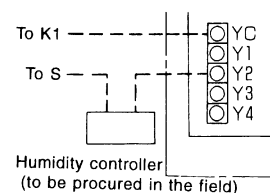
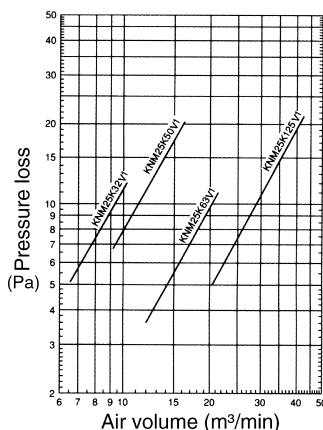
----- Field wiring

Make wiring as shown on the right, if a humidity controller will be mounted.

Arrange the wiring shown right locally for that case. Set the turn-over switch to OFF for the choice of ON/OFF of group humidity controlling input on the "Wiring adaptor PC board".



Characteristics of Filter

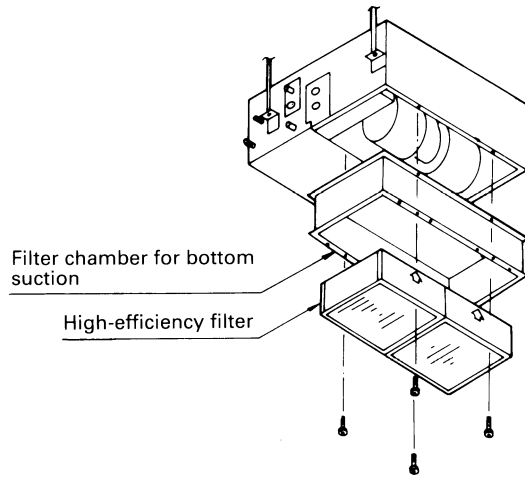


High Efficiency Filter Specifications

Items	Model	KAFJ252L36	KAFJ252L56	KAFJ252L80	KAFJ252L160	KAFJ253L36	KAFJ253L56	KAFJ253L80	KAFJ253L160
Dust Collection Efficiency (%)		Colorimetric method 65%				Colorimetric method 90%			
Initial Pressure Loss (Pa)		12 or less	14 or less		22 or less	21 or less	24 or less		34 or less
Final Pressure Loss (Pa)		98 or less				98 or less			
Filter		Non-woven fabric of synthetic fiber				Non-woven fabric of synthetic fiber			
Life Time (h)		2,500 hours (Dust density 0.15mg/m ³)				1,800 hours (Dust density 0.15mg/m ³)			
High Efficiency Filter Chamber (for the Bottom Suction)		KAJ25L36D	KAJ25L56D	KAJ25L80D	KAJ25L160D	KAJ25L36D	KAJ25L56D	KAJ25L80D	KAJ25L160D
High Efficiency Filter Chamber (for the Rear Suction)		KAJ25L36B	KAJ25L56B	KAJ25L80B	KAJ25L160B	KAJ25L36B	KAJ25L56B	KAJ25L80B	KAJ25L160B
External Dimension (mm) (T×W×D)		25×500×360	25×650×360	(25×475×360)×2	(25×700×360)×1 (25×650×360)×1	25×500×360	25×650×360	(25×475×360)×2	(25×700×360)×1 (25×650×360)×1
Applicable Models		20 · 25 · 32 Class	40 · 50 Class	63 Class	80 · 100 · 125 Class	20 · 25 · 32 Class	40 · 50 Class	63 Class	80 · 100 · 125 Class

6

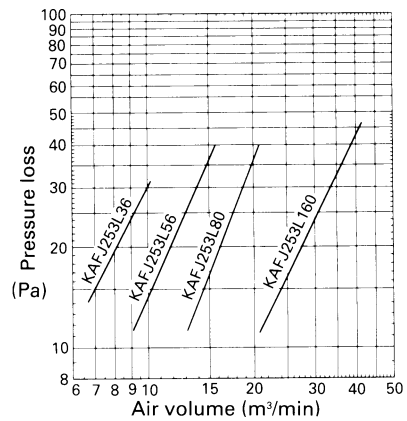
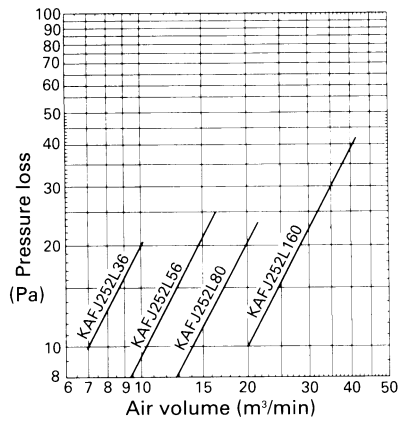
Installation



Characteristics of Filter

■ 65% type

■ 90% type



Long-Life Replacement Filter

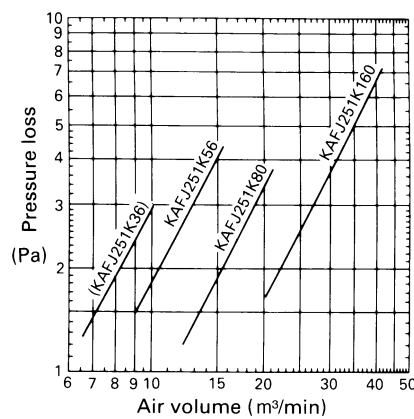
Specifications

Item	Model	KAFJ251K36	KAFJ251K56	KAFJ251K80	KAFJ251K160
Average Efficiency (%)		50% (Gravity method)			
Pressure Loss (Pa)	Initial	10 or less		4.9 or less	
	Final	49		49 or less	
Materials		Mildew Proof Resin Net			
Number Required per Model		1	1	2	2
Life Time (h)		2,500 hours (dust particle concentration at 0.15 mg/m ³)			
Applicable Model		20 · 25 · 32 Class	40 · 50 Class	63 Class	80 · 100 · 125 Class

Note:

The filter models for 20 ~ 50 Class can be used also as Rear-suction types.

Characteristics of filter

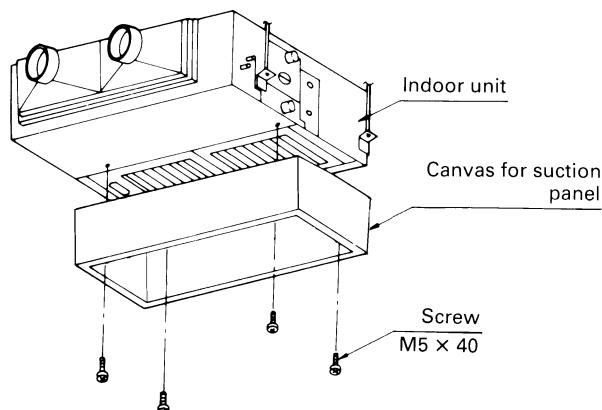


Canvas Duct (Air Suction Canvas)

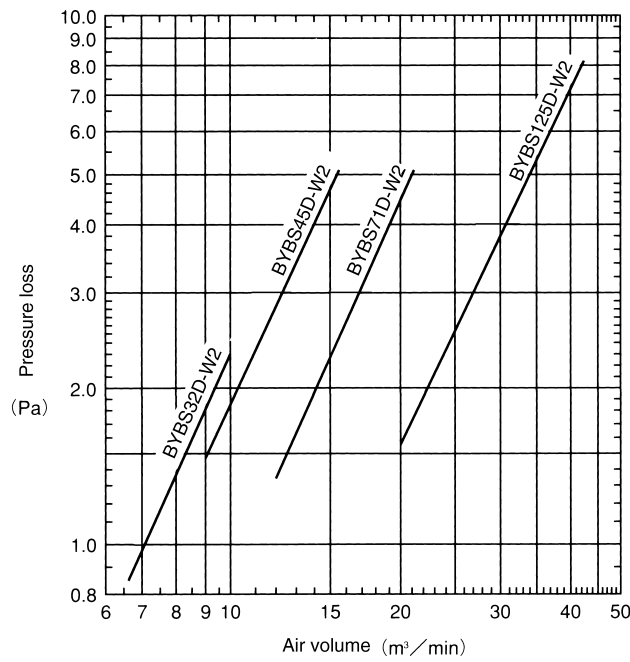
Specifications

Item	Model	KSA-25K36	KSA-25K56	KSA-25K80	KSA-25K160
Dimensions (mm)	H	255	255	255	255
	W	550	700	1000	1400
	D	405	405	405	405
Canvas Duct		TOYOBO · SL1000 · SIMVER Flame resistant			
Applicable Model		BYBS32DJW1	BYBS45DJW1	BYBS71DJW1	BYBS125DJW1

Installation



Suction Panel
Characteristics of Filter



6

Air Discharge Adaptor
Specifications

Item	Model	KDAJ25K36A	KDAJ25K56A	KDAJ25K71A	KDAJ25K140A
Connection Dia. (φmm)		φ200×1 port	φ200×2 port	φ200×2 port	φ200×4 port
Applicable Models		20 · 25 · 32 Class	40 · 50 Class	63 Class	80 · 100 · 125 Class

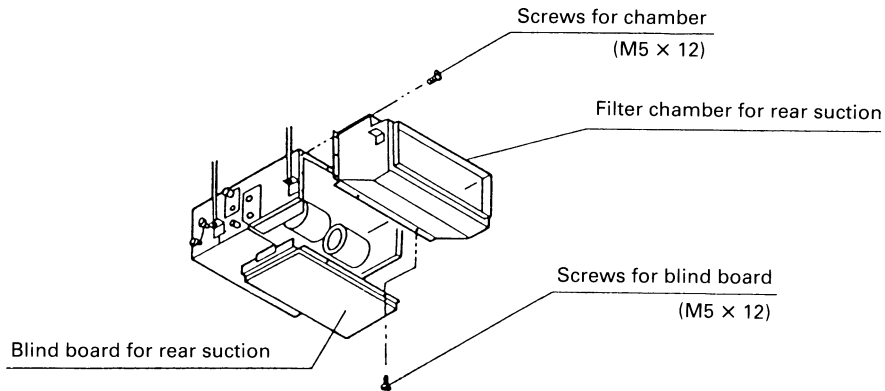
Filter Chamber (for Rear-suction Type)

This kit will be used for the rear-suction type when the high efficiency filter or the long life filter will be built in.

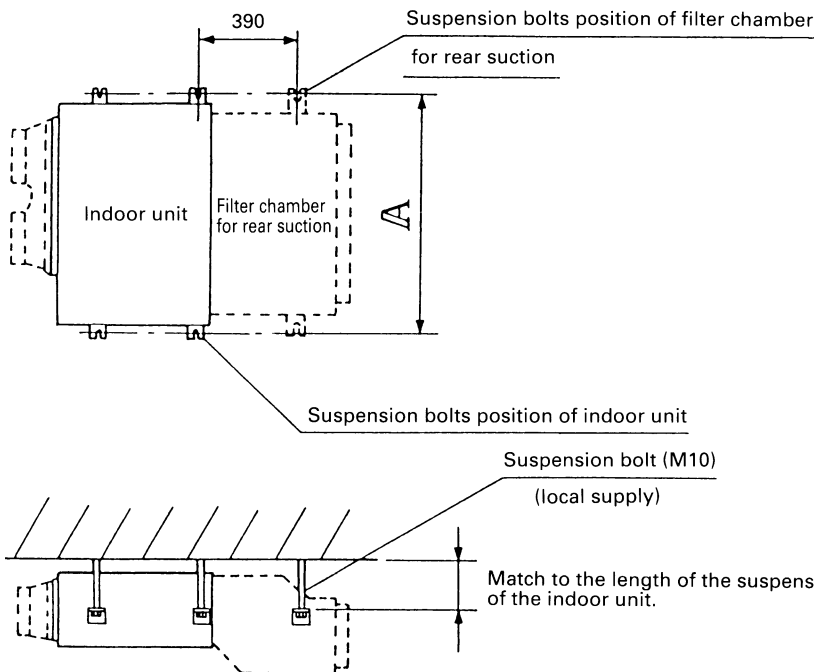
Applicable Model

Model	Applicable Model
KAJ25L36B	20 · 25 · 32 Class
KAJ25L56B	40 · 50 Class
KAJ25L80B	63 Class
KAJ25L160B	80 · 100 · 125 Class

Installation



Be sure to remove the long life filter and attach the rear-suction type's sealing plate there when the filter chamber (for the rear-suction type) must be installed.



Model	A
KAJ25L36B	600
KAJ25L56B	750
KAJ25L80B	1050
KAJ25L160B	1450

Note:

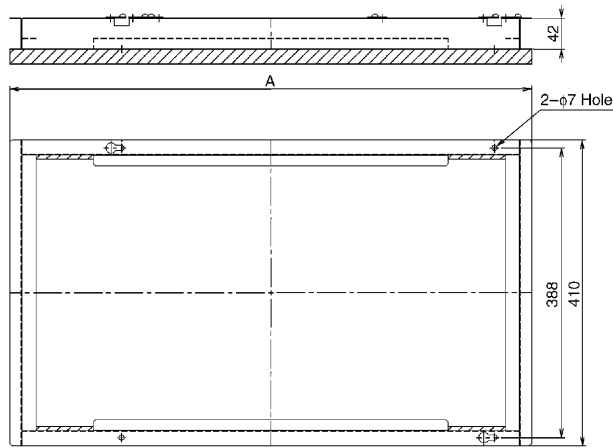
Refer to the appearance figure of optional accessory describing later for further details.

Filter Chamber for Bottom Suction

Applicable Model

Model	Applicable Model
KAJ25L36D	20 · 25 · 32 Class
KAJ25L56D	40 · 50 Class
KAJ25L80D	63 Class
KAJ25L160D	80 · 100 · 125 Class

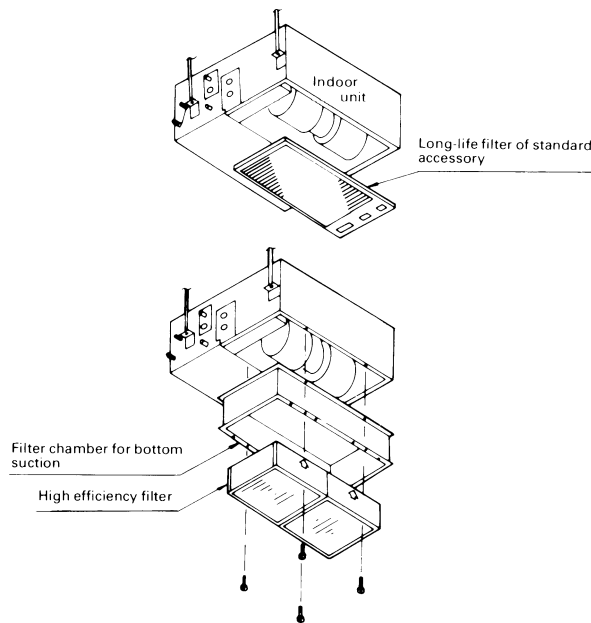
Dimension



JC : D3K1420A

Model	A
KAJ25L36D	550
KAJ25L56D	700
KAJ25L80D	1000
KAJ25L160D	1400

Installation



Note:

Refer to the appearance figure of optional accessory describing later for further details.

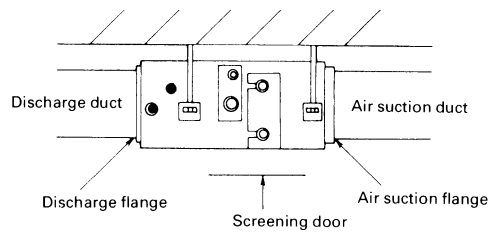
Air Suction Flange

When this kit will be used, the rear suction type's sealing plate will be required separately.

Specifications

Item	Model	Air Suction Flange			
		KDJ2507K36	KDJ2507K56	KDJ2507K80	KDJ2507K160
Dimensions (mm)	W	527	677	977	1377
	H	278			
	T	25			
Size of Connecting Duct (mm)	W	477	627	927	1327
	L	228			
Materials	Galvanized steel plate				
Applicable Model		20 · 25 · 32 Class	40 · 50 Class	63 Class	80 · 100 · 125 Class

Example of Installation

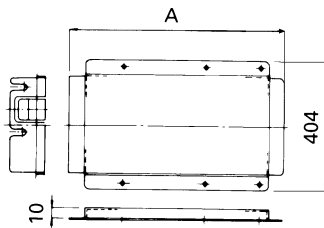


Blind Board (Screening Door) used for the rear-suction type

Specifications

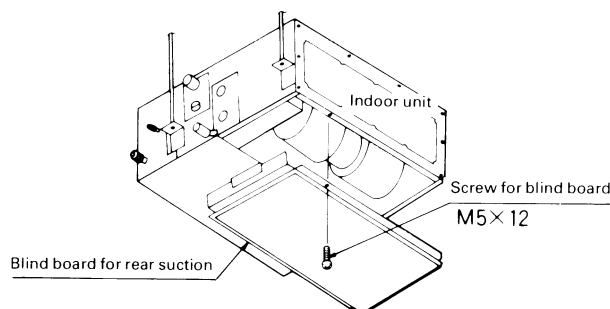
Item	Model	KBBJ25K36	KBBJ25K56	KBBJ25K80	KBBJ25K160
		Dimensions (mm)	W	535	685
	D	404			
	T	10			
Materials	Galvanized Steel Plate				
Applicable Model		20 · 25 · 32 Class	40 · 50 Class	63 Class	80 · 100 · 125 Class

Dimension



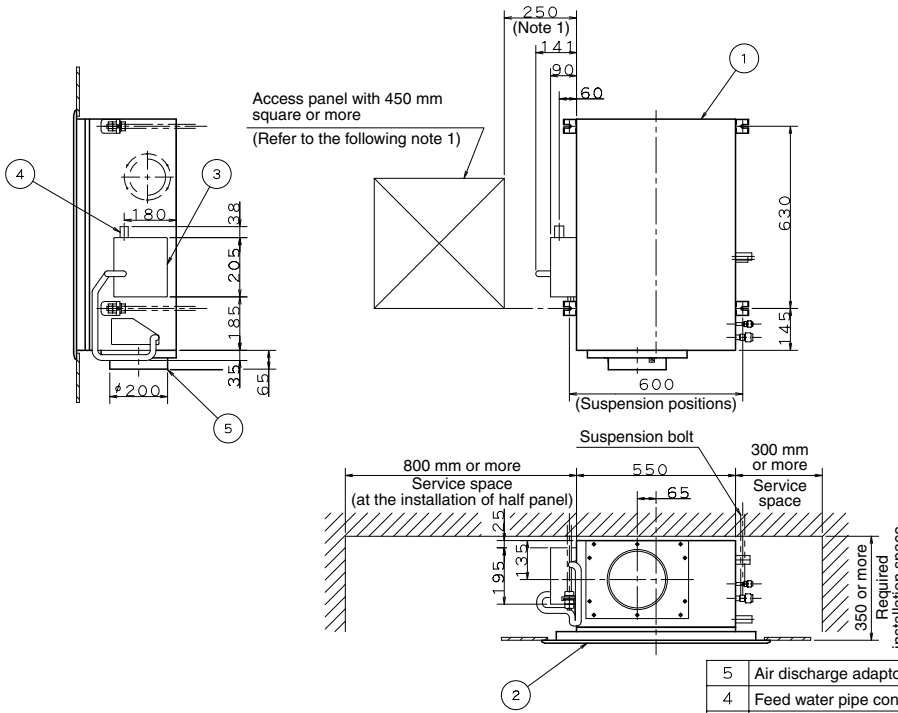
Applicable Model	A
KBBJ25K36	535
KBBJ25K56	685
KBBJ25K80	985
KBBJ25K160	1385

Installation



Dimensions with the Optional Accessories
Natural evaporating pan type humidifier (Air discharge adaptor)

■ FXSQ20~32M

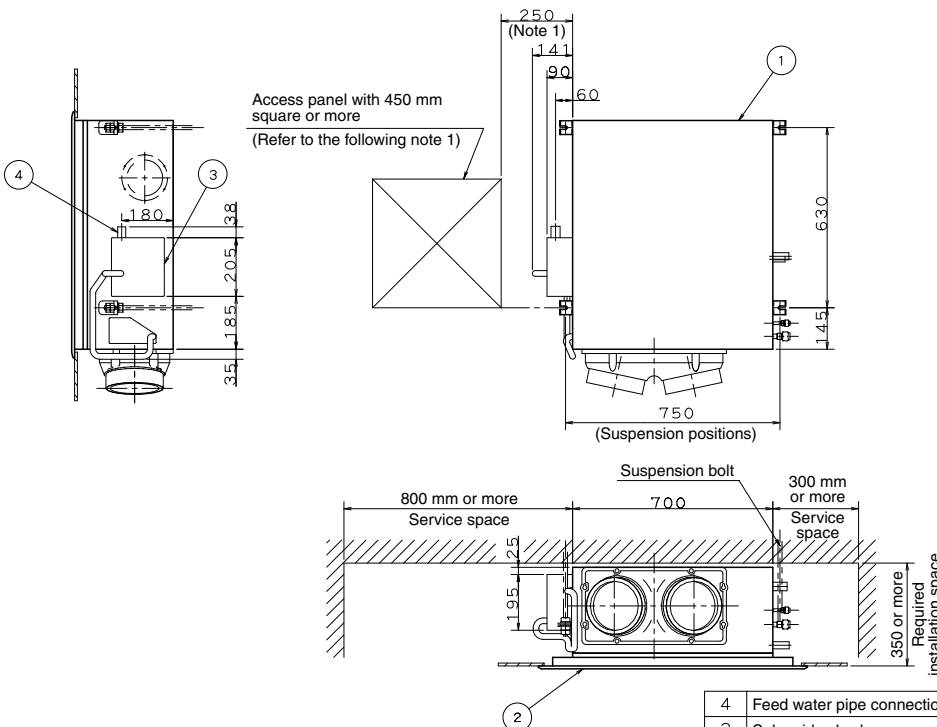


- Note)
1. An access panel is needed when a half panel will be installed.
 2. When optional accessory other than these kits will be built in, refer to external drawing with optional accessories.
 3. Parts names ②-⑤ show optional accessories.

5	Air discharge adaptor	
4	Feed water pipe connection	For natural evaporating pan type humidifier PT 1/2
3	Solenoid valve box	For natural evaporating pan type humidifier
2	Suction full panel	
1	Built-in unit body	
Number	Name	Description

JC : DU220-245B

■ FXSQ40・50M



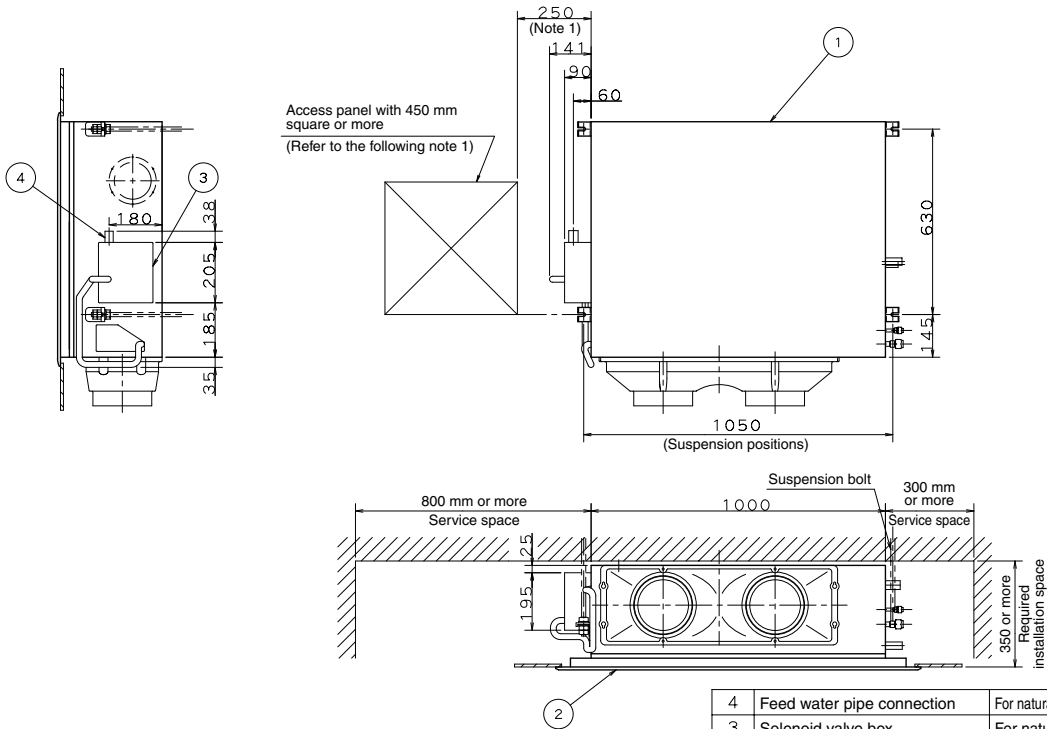
- Note)
1. An access panel is needed when a half panel will be installed.
 2. When optional accessory other than these kits will be built in, refer to external drawing with optional accessories.
 3. Parts names ②-④ show optional accessories.

4	Feed water pipe connection	For natural evaporating pan type humidifier PT 1/2
3	Solenoid valve box	For natural evaporating pan type humidifier
2	Suction full panel	
1	Built-in Hi type body	
Number	Name	Description

JC : DU425-2111F

Dimensions with the Optional Accessories
Natural evaporating pan type humidifier (Air discharge adaptor)

■ **FXSQ63M**

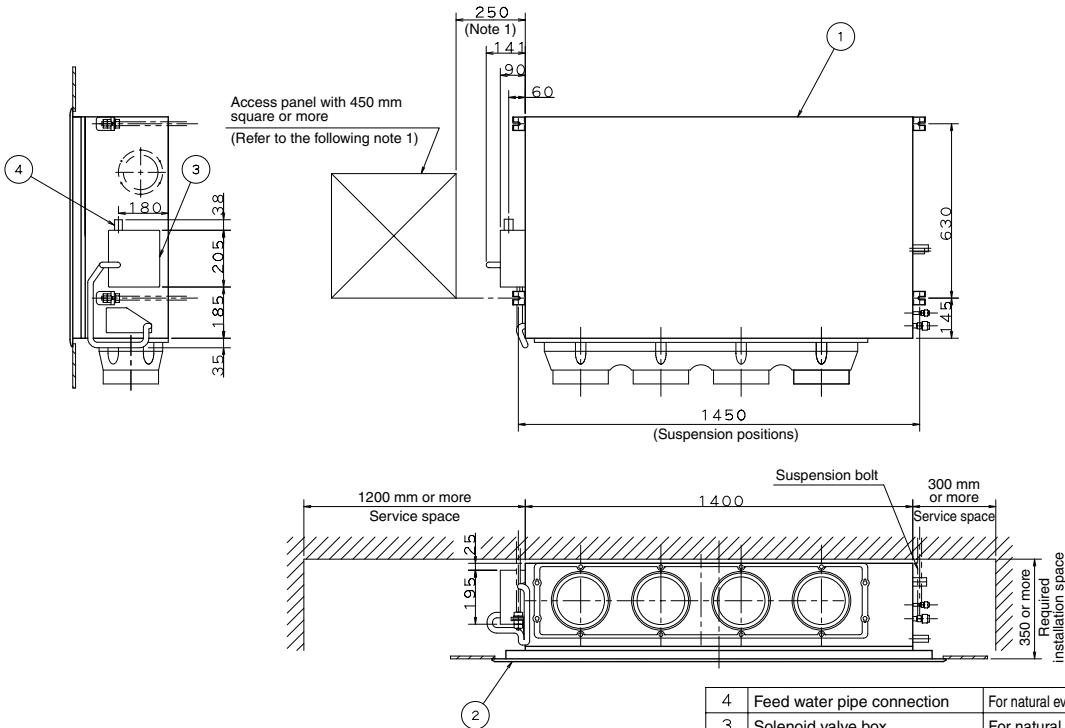


- Note)
1. An access panel is needed when a half panel will be installed.
 2. When optional accessory other than these kits will be built in, refer to external drawing with optional accessories.
 3. Parts names ②-④ show optional accessories.

4	Feed water pipe connection	For natural evaporating pan type humidifier PT 1/2
3	Solenoid valve box	For natural evaporating pan type humidifier
2	Suction full panel	
1	Built-in Hi type body	
Number	Name	Description

JC : DU427-2192G

■ **FXSQ80~125M**



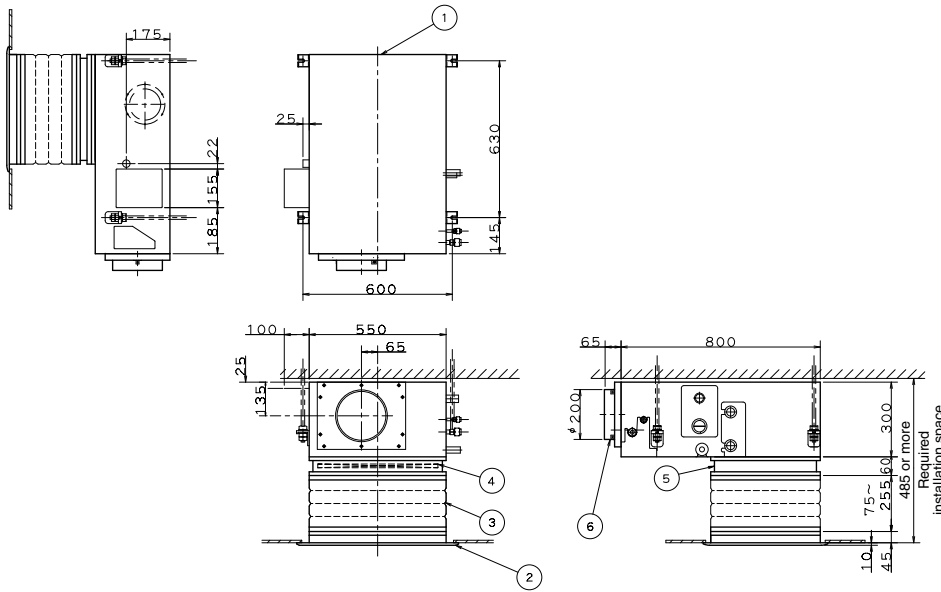
- Note)
1. An access panel is needed when a half panel will be installed.
 2. When optional accessory other than these kits will be built in, refer to external drawing with optional accessories.
 3. Parts names ②-④ show optional accessories.

4	Feed water pipe connection	For natural evaporating pan type humidifier PT 1/2
3	Solenoid valve box	For natural evaporating pan type humidifier
2	Suction full panel	
1	Built-in Hi type body	
Number	Name	Description

JC : DU428-2158G

High Efficiency Filter (Air discharge Adaptor)

■ FXSQ20~32M



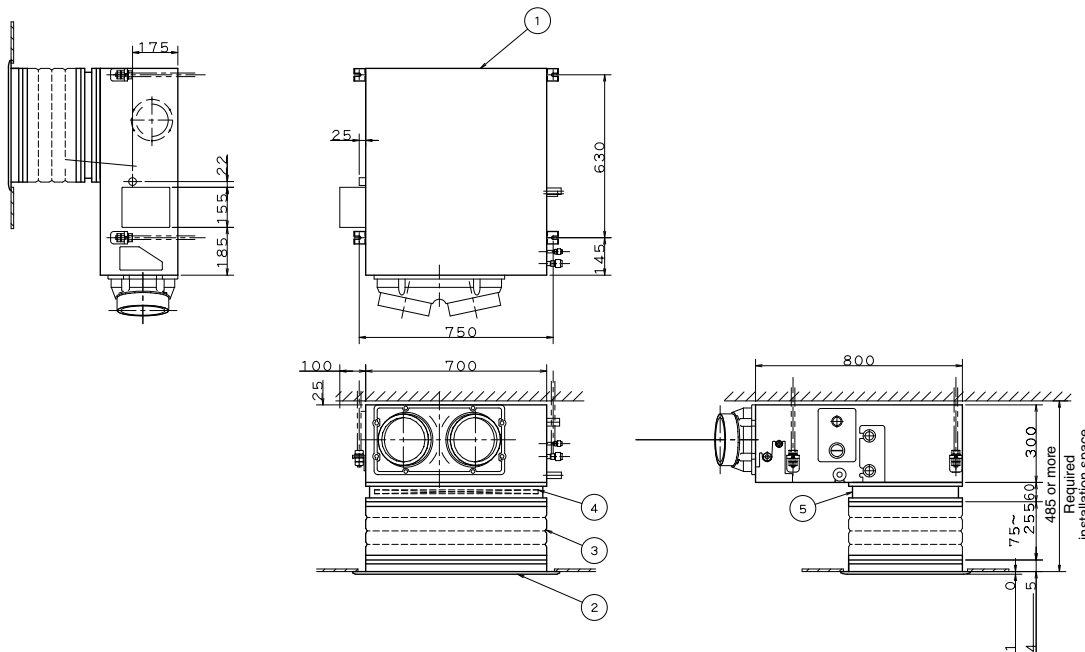
Note)

- 1. When optional accessory other than these kits will be built in, refer to the external drawing with optional accessories.
- 2. Parts names ②-⑥ show optional accessories.

6	Air discharge adaptor	
5	Bottom suction filter chamber	
4	High efficiency filter	
3	Air suction canvas	
2	Suction half panel	
1	Built-in unit body	
Number	Name	Description

JC : DU820-238B

■ FXSQ40・50M



Note)

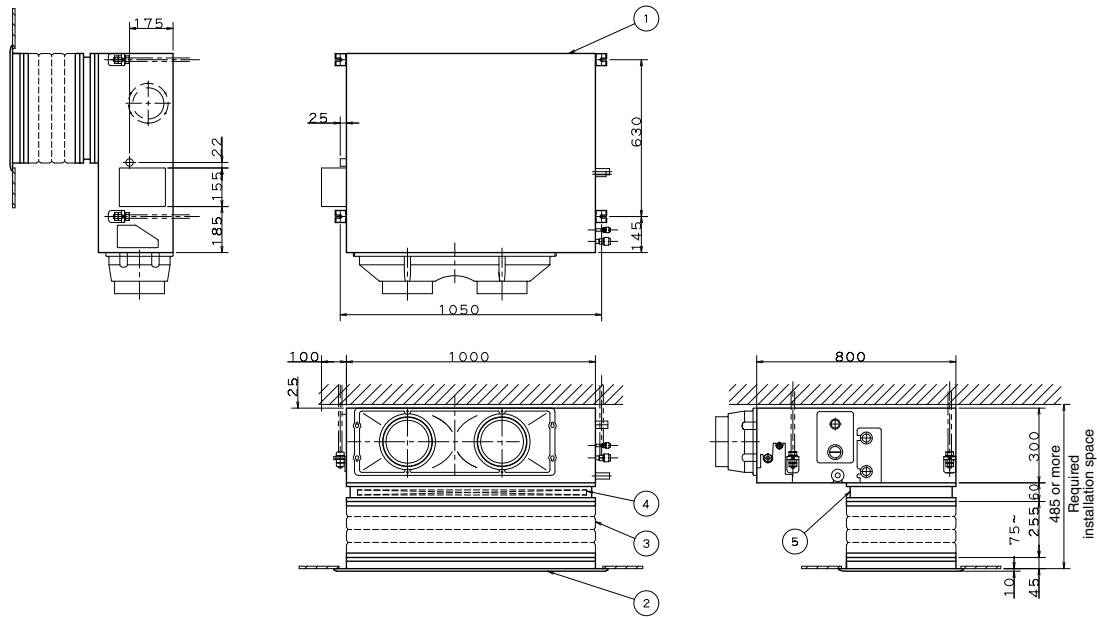
- 1. When optional accessory other than these kits will be built in, refer to the external drawing with optional accessories.
- 2. Parts names ②-⑤ show optional accessories.

5	Bottom suction filter chamber	
4	High efficiency filter	
3	Air suction canvas	
2	Suction half panel	
1	Built-in Hi type body	
Number	Name	Description

JC : DU823-226E

High Efficiency Filter (Air discharge Adaptor)

■ FXSQ63M



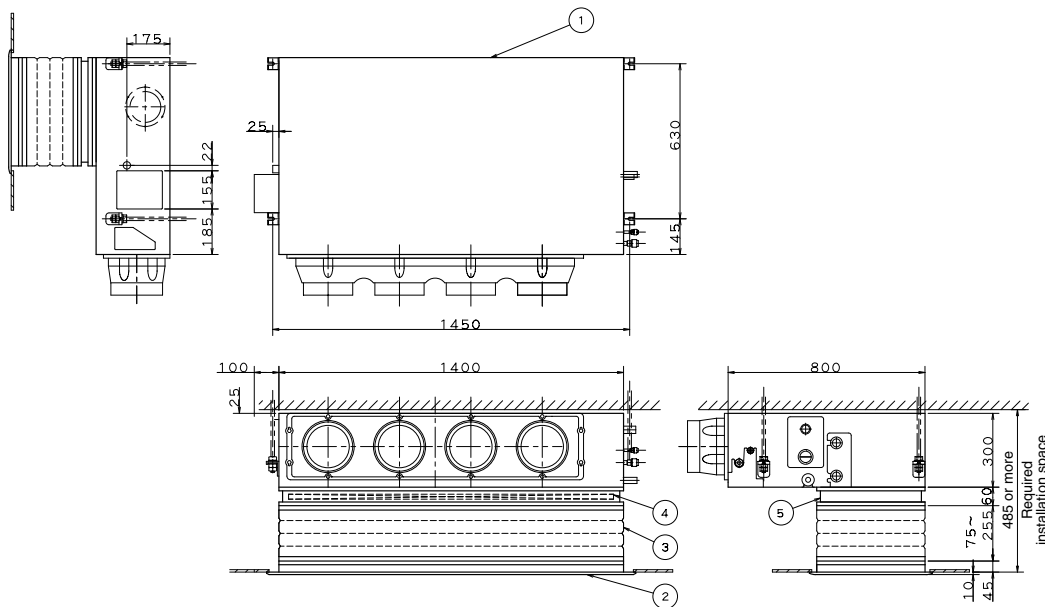
Note)

1. When optional accessory other than these kits will be built in, refer to the external drawing with optional accessories.
2. Parts names ①-⑤ show optional accessories.

5	Bottom suction filter chamber	
4	High efficiency filter	
3	Air suction canvas	
2	Suction half panel	
1	Built-in Hi type body	
Number	Name	Description

JC : DU826-207F

■ FXSQ80~125M



Note)

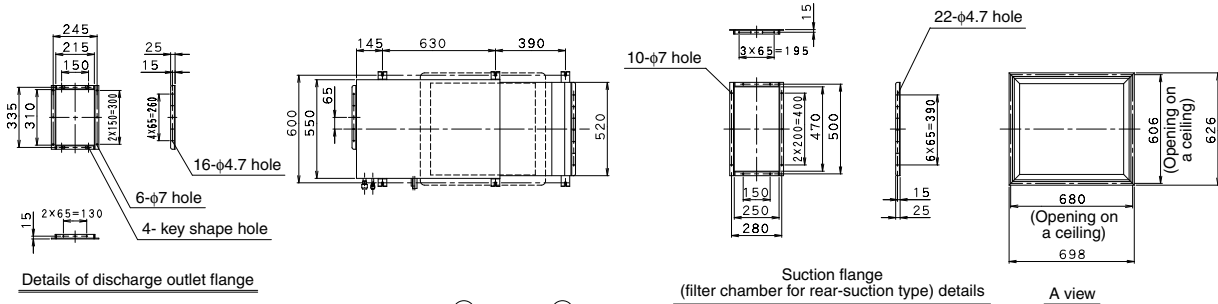
1. When optional accessory other than these kits will be built in, refer to the external drawing with optional accessories.
2. Parts names ①-⑤ show optional accessories.

5	Bottom suction filter chamber	
4	High efficiency filter	
3	Air suction canvas	
2	Suction half panel	
1	Built-in Hi type body	
Number	Name	Description

JC : DU828-215F

Duct Style Installation

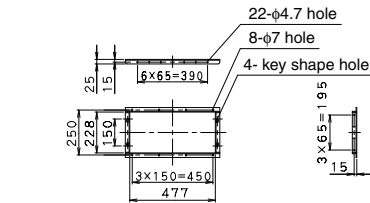
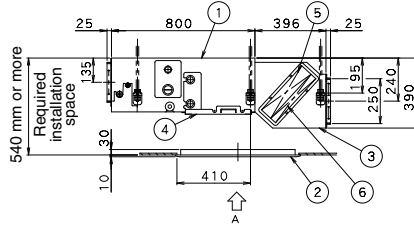
■ FXSQ20~32M



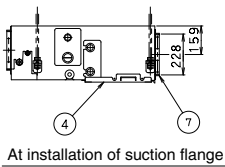
Details of discharge outlet flange

Suction flange (filter chamber for rear-suction type) details

A view



Suction flange details



At installation of suction flange

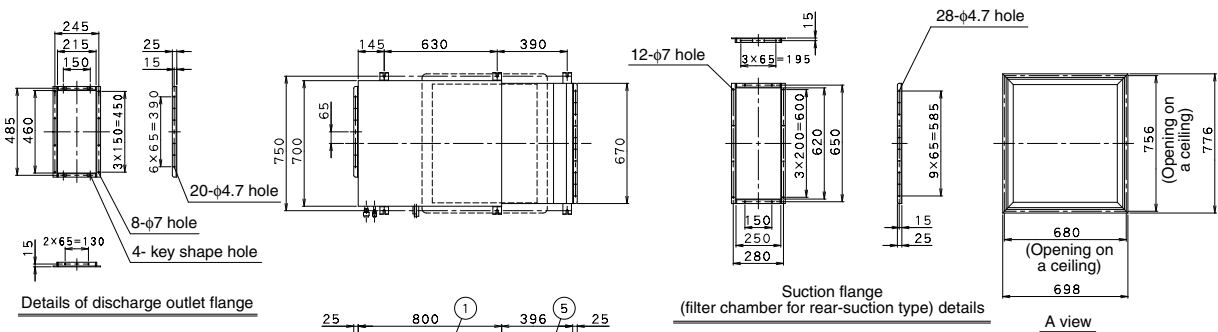
Note)

1. When optional accessory other than these kits will be built in, refer to the external drawing with optional accessories.
2. Parts names ②-⑦ show optional accessories.

Number	Name	Description
7	Suction inlet flange	
6	Long life filter	
5	High efficiency filter	
4	Rear-suction sealing plate	
3	Rear-suction filter chamber	(with rear-suction sealing plate)
2	Access panel	
1	Built-in unit body	

JC : DU220-248B

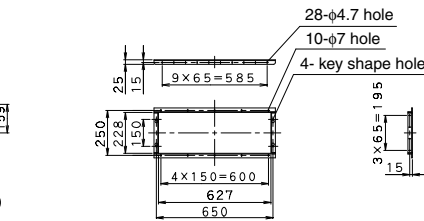
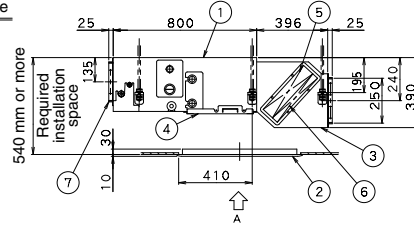
■ FXSQ40 · 50M



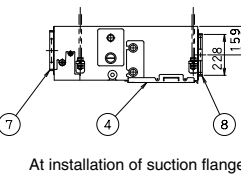
Details of discharge outlet flange

Suction flange (filter chamber for rear-suction type) details

A view



Suction flange details



At installation of suction flange

Note)

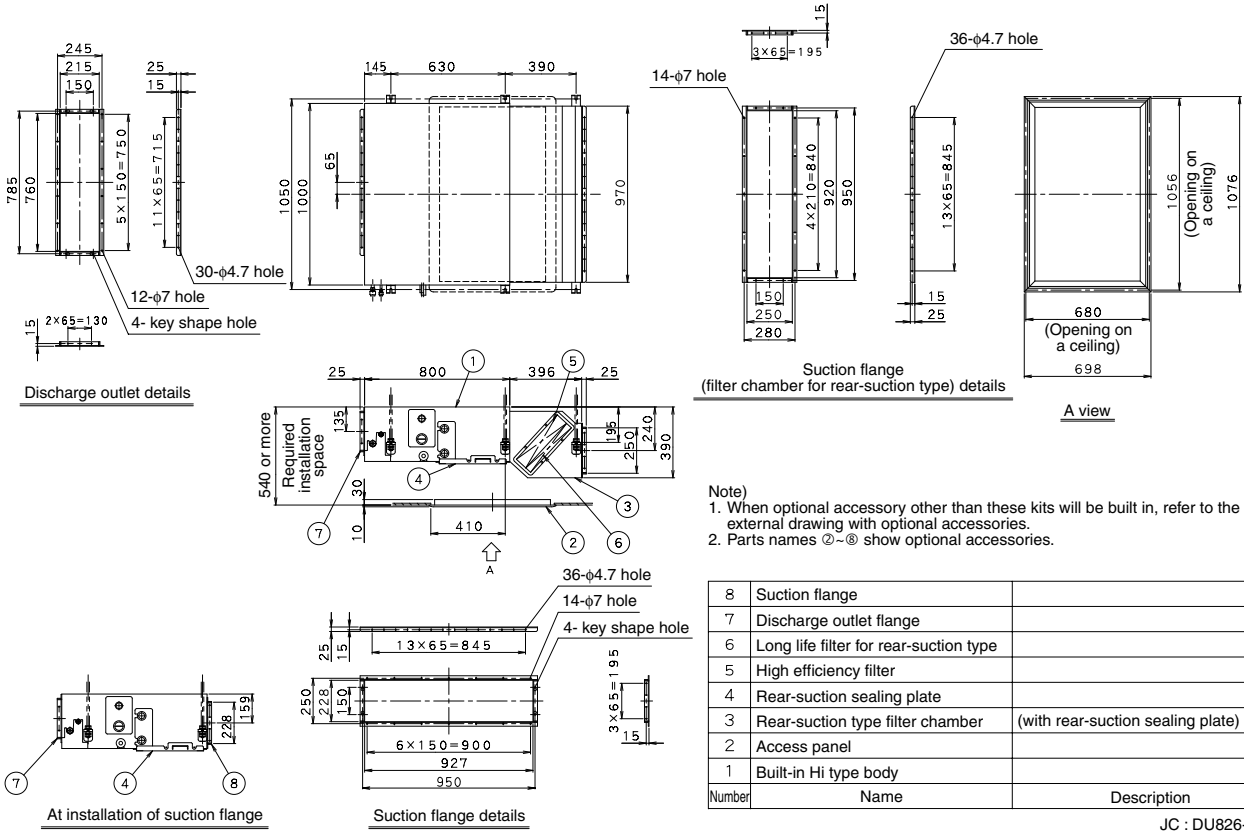
1. When optional accessory other than these kits will be built in, refer to the external drawing with optional accessories.
2. Parts names ②-⑧ show optional accessories.

Number	Name	Description
8	Suction inlet flange	
7	Suction flange	
6	Long life filter	
5	High efficiency filter	
4	Rear-suction sealing plate	
3	Rear-suction filter chamber	(with rear-suction sealing plate)
2	Access panel	
1	Built-in Hi type body	

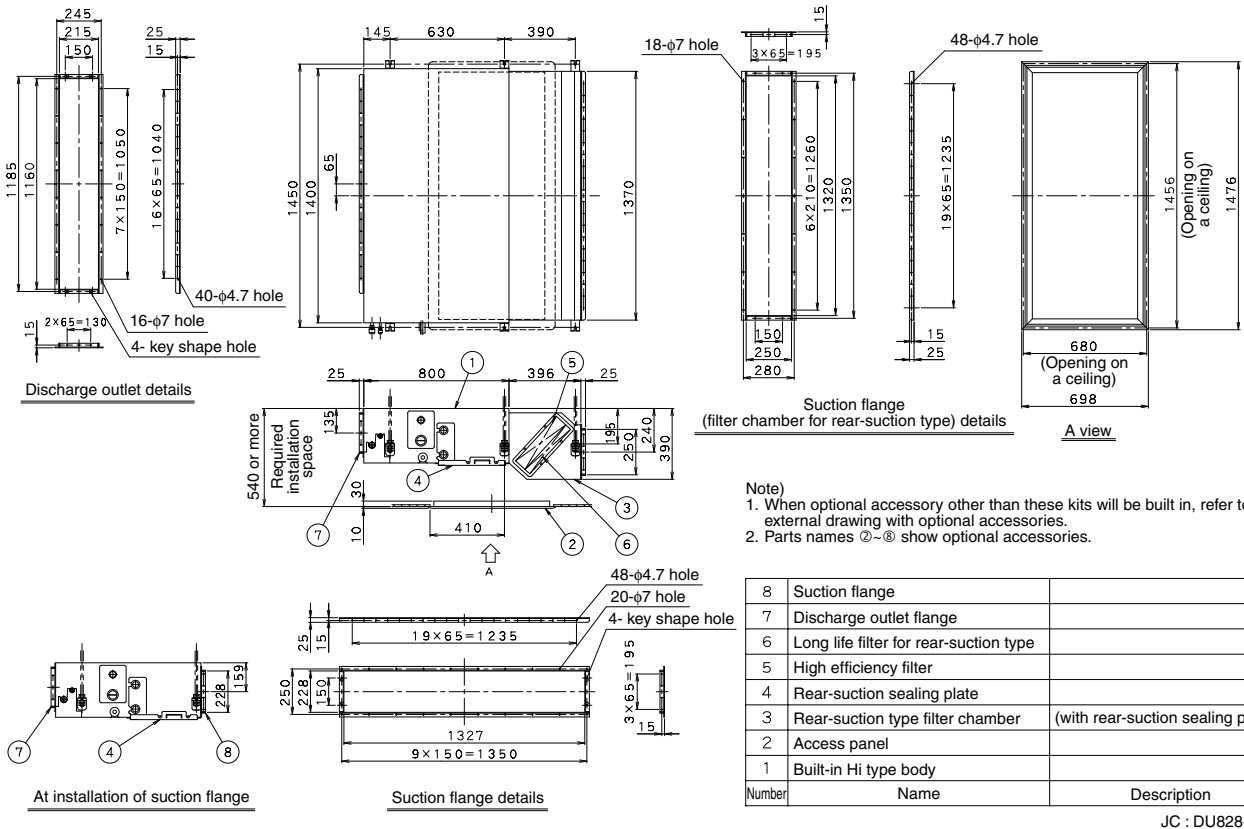
JC : DU425-2115F

Duct Style Installation

■ FXSQ63M



■ FXSQ80~125M



FXMQ-P

Ceiling Mounted Duct Type (Middle and High Static Pressure)

1. Features	244
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1. Features

Ceiling Mounted Duct Type

New
 FXMQ20P/FXMQ25P
 FXMQ32P/FXMQ40P
 FXMQ50P/FXMQ63P
 FXMQ80P/FXMQ100P
 FXMQ125P

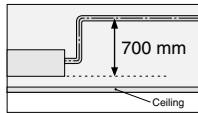


Middle and high static pressure allows for flexible duct design

- A DC fan motor increases the external static pressure capacity range to include middle to high static pressures, increasing design flexibility.
 30 Pa–100 Pa for FXMQ20P-32P
 30 Pa–160 Pa for FXMQ40P
 50 Pa–200 Pa for FXMQ50P-125P
- All models are only 300 mm in height, an improvement over the 390 mm height of conventional models. The weight of the FXMQ40P has been reduced from 44 kg to 28 kg.



- Drain pump is equipped as standard accessory with 700 mm lift.



- Control of the airflow rate has been improved from 2-step to 3-step control.

● Low operation sound level (dB(A))

FXMQ-P	20	30	32	40	50	63	80	100	125
Sound level (HH/H/L)	33/31/29		34/32/30	39/37/35	41/39/37	42/40/38	43/41/39		44/42/40

- Energy-efficient
 - The adopted DC fan motor is much more efficient than the conventional AC motor, yielding an approximate 20% decrease in energy consumption. (FXMQ125P)

- Improved ease of installation
 - Airflow can be controlled using a remote controller. With the conventional model, the airflow rate was controlled from the PC board. It is automatically adjusted to the range between approximately $\pm 10\%$ of the rated HH tap airflow.
- Improved ease of maintenance
 - The drain pan can be detached for easy cleaning. A new antibacterial treatment that uses silver ions has been applied to the drain pan, preventing the growth of slime, mould and bacteria that cause blockages and odours.

2. Specifications

Ceiling Mounted Duct Type

Model			FXMQ20PVE	FXMQ25PVE	FXMQ32PVE
*1 Cooling Capacity (19.5°CWB)		kcal/h	2,000	2,500	3,200
		Btu/h	7,800	9,900	12,600
		kW	2.3	2.9	3.7
*2 Cooling Capacity (19.0°CWB)		kW	2.2	2.8	3.6
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (HxWxD)		mm	300x550x700	300x550x700	300x550x700
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm	3x16x1.75	3x16x1.75	3x16x1.75
	Face Area	m ²	0.098	0.098	0.098
Fan	Model		—	—	—
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output x Number of Units	W	90x1	90x1	90x1
	Air Flow Rate (HH/H/L)	m ³ /min	9/7.5/6.5	9/7.5/6.5	9.5/8/7
		cfm	318/265/230	318/265/230	335/282/247
	External Static Pressure	Pa	Standard 50 (100-30 *3)	Standard 50 (100-30 *3)	Standard 50 (100-30 *3)
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
Air Filter			*4	*4	*4
Piping Connections	Liquid Pipes	mm	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)
	Gas Pipes	mm	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Mass (Weight)		kg	25	25	25
*6 Sound Level (HH/H/L)	dBA	220V	33/31/29	33/31/29	34/32/30
		240V	33/31/29	33/31/29	34/32/30
Safety Devices			Fuse. Fan Driver Overload Protector.	Fuse. Fan Driver Overload Protector.	Fuse. Fan Driver Overload Protector.
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Connectable Outdoor Unit			R-410A PA Series	R-410A PA Series	R-410A PA Series
Standard Accessories			Operation Manual. Installation Manual. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Washers. Screws. Air Discharge Flange. Air Suction Flange.	Operation Manual. Installation Manual. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Washers. Screws. Air Discharge Flange. Air Suction Flange.	Operation Manual. Installation Manual. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Washers. Screws. Air Discharge Flange. Air Suction Flange.
Drawing No.			C : 3D060388A		

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *3 External static pressure is changeable in 13 or 14 stages within the () range by remote controller.
- *4 Air filter is not standard accessory, but please mount it in the duct system of the suction side. Select its colorimetric method (gravity method) 50% or more.
- 5 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- *6 Anechoic chamber conversion value, measured at a point 1.5 m downward from the unit centre. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- 7 Refer to page 255 for Fan Motor Input.

Conversion Formulae
kcal/h=kW×860
Btu/h=kW×3412
cfm=m ³ /min×35.3

Ceiling Mounted Duct Type

Model		FXMQ40PVE	FXMQ50PVE	FXMQ63PVE	FXMQ80PVE	
*1 Cooling Capacity (19.5°CWB)	kcal/h	4,000	5,000	6,300	8,000	
	Btu/h	16,000	19,800	24,900	31,700	
	kW	4.7	5.8	7.3	9.3	
*2 Cooling Capacity (19.0°CWB)	kW	4.5	5.6	7.1	9.0	
Casing		Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	
Dimensions: (HxWxD)		mm	300x700x700	300x1,000x700	300x1,000x700	
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm	3x16x1.75	3x16x1.75	3x16x1.75	
	Face Area	m ²	0.148	0.249	0.249	
Fan	Model		—	—	—	
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output x Number of Units	W	140x1	350x1	350x1	350x1
	Air Flow Rate (HH/H/L)	m ³ /min	16/13/11	18/16.5/15	19.5/17.5/16	25/22.5/20
		cfm	565/459/388	635/582/530	688/618/565	883/794/706
	External Static Pressure	Pa	Standard 100 (160-30 *3)	Standard 100 (200-50 *3)	Standard 100 (200-50 *3)	Standard 100 (200-50 *3)
Drive		Direct 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	Microprocessor Thermostat for Cooling and Heating	
Air Filter		*4	*4	*4	*4	
Piping Connections	Liquid Pipes	mm	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ9.5 (Flare Connection)	φ9.5 (Flare Connection)
	Gas Pipes	mm	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ15.9 (Flare Connection)	φ15.9 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Mass (Weight)		kg	28	36	36	36
*6 Sound Level (HH/H/L)	dBA	220V	39/37/35	41/39/37	42/40/38	43/41/39
		240V	39/37/35	41/39/37	42/40/38	43/41/39
Safety Devices		Fuse. Fan Driver Overload Protector.	Fuse. Fan Driver Overload Protector.	Fuse. Fan Driver Overload Protector.	Fuse. Fan Driver Overload Protector.	
Refrigerant Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	
Connectable Outdoor Unit		R-410A PA Series	R-410A PA Series	R-410A PA Series	R-410A PA Series	
Standard Accessories		Operation Manual. Installation Manual. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Washers. Screws. Air Discharge Flange. Air Suction Flange.	Operation Manual. Installation Manual. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Washers. Screws. Air Discharge Flange. Air Suction Flange.	Operation Manual. Installation Manual. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Washers. Screws. Air Discharge Flange. Air Suction Flange.	Operation Manual. Installation Manual. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Washers. Screws. Air Discharge Flange. Air Suction Flange.	
Drawing No.		C : 3D060388A				

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *3 External static pressure is changeable in 13 or 14 stages within the () range by remote controller.
- *4 Air filter is not standard accessory, but please mount it in the duct system of the suction side. Select its colorimetric method (gravity method) 50% or more.
- 5 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- *6 Anechoic chamber conversion value, measured at a point 1.5 m downward from the unit centre. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- 7 Refer to page 255 for Fan Motor Input.

Conversion Formulae
kcal/h=kWx860
Btu/h=kWx3412
cfm=m ³ /minx35.3

Ceiling Mounted Duct Type

Model			FXMQ100PVE	FXMQ125PVE
*1 Cooling Capacity (19.5°CWB)	kcal/h		10,000	12,500
	Btu/h		39,600	49,500
	kW		11.6	14.5
*2 Cooling Capacity (19.0°CWB)	kW		11.2	14.0
Casing			Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (HxWxD)		mm	300x1,400x700	300x1,400x700
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm	3x16x1.75	3x16x1.75
	Face Area	m ²	0.383	0.383
Fan	Model		—	—
	Type		Sirocco Fan	Sirocco Fan
	Motor Output x Number of Units	W	350x1	350x1
	Air Flow Rate (HH/H/L)	m ³ /min	32/27/23	39/33/28
		cfm	1,130/953/812	1,377/1,165/988
	External Static Pressure	Pa	Standard 100 (200-50 *3)	Standard 100 (200-50 *3)
Drive		Direct Drive	Direct Drive	
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Air Filter			*4	*4
Piping Connections	Liquid Pipes	mm	φ9.5 (Flare Connection)	φ9.5 (Flare Connection)
	Gas Pipes	mm	φ15.9 (Flare Connection)	φ15.9 (Flare Connection)
	Drain Pipe	mm	VP25 (External Dia. 32 Internal Dia. 25)	VP25 (External Dia. 32 Internal Dia. 25)
Mass (Weight)		kg	46	46
*6 Sound Level (HH/H/L)	dBA	220V	43/41/39	44/42/40
		240V	43/41/39	44/42/40
Safety Devices			Fuse. Fan Driver Overload Protector.	Fuse. Fan Driver Overload Protector.
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve
Connectable Outdoor Unit			R-410A PA Series	R-410A PA Series
Standard Accessories			Operation Manual. Installation Manual. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Washers. Screws. Air Discharge Flange. Air Suction Flange.	Operation Manual. Installation Manual. Drain Hose. Clamp Metal. Insulation for Fitting. Sealing Pads. Clamps. Washers. Screws. Air Discharge Flange. Air Suction Flange.
Drawing No.			C : 3D060388A	

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
*2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
*3 External static pressure is changeable in 13 or 14 stages within the () range by remote controller.
*4 Air filter is not standard accessory, but please mount it in the duct system of the suction side. Select its colorimetric method (gravity method) 50% or more.
5 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
*6 Anechoic chamber conversion value, measured at a point 1.5 m downward from the unit centre. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
7 Refer to page 255 for Fan Motor Input.

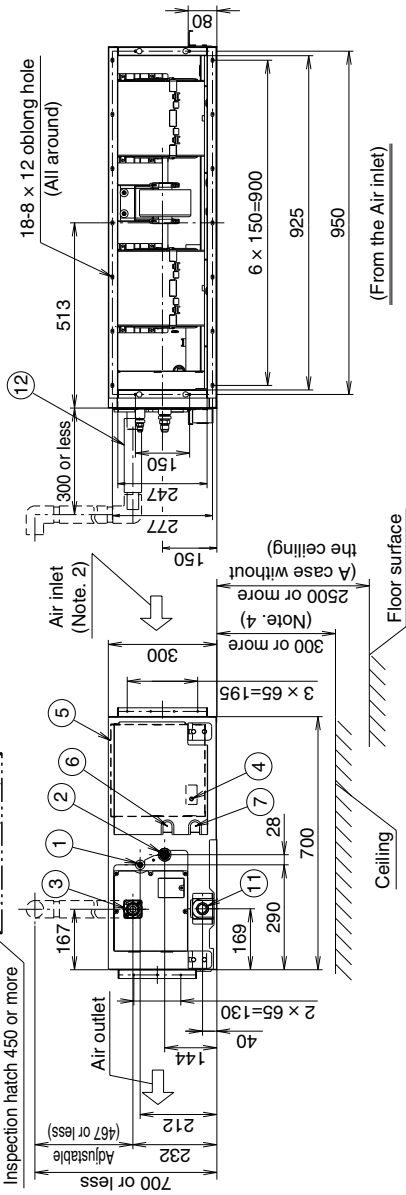
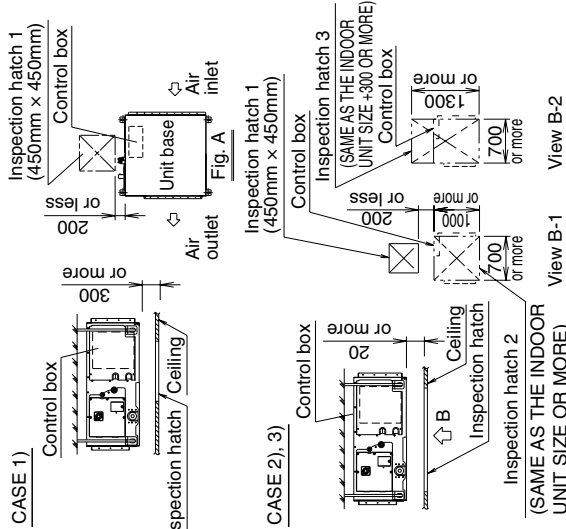
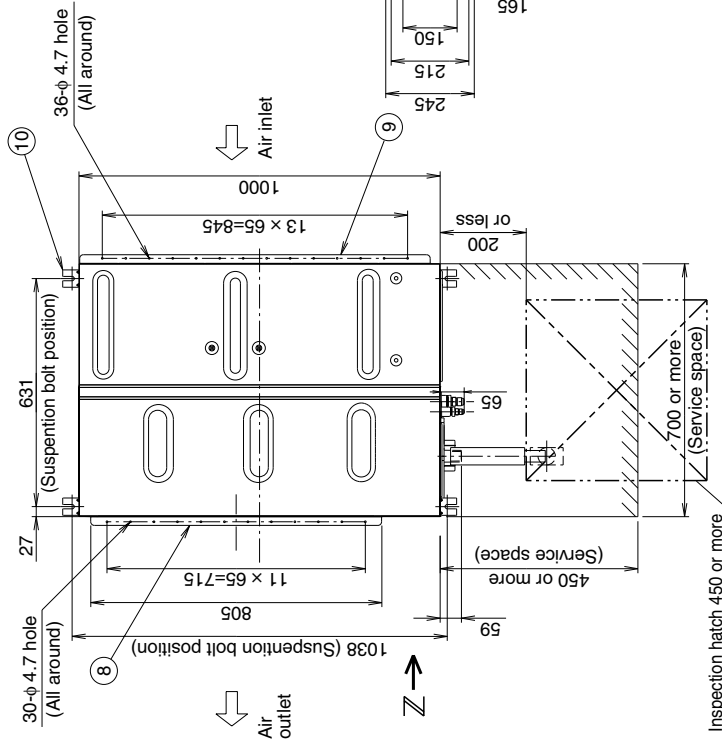
Conversion Formulae
kcal/h=kWx860 Btu/h=kWx3412 cfm=m ³ /minx35.3

FXMQ63P / 80PVE

Unit (mm)

4. Space for Service Works
- According to any one of below 1)~3), secure a space for service works, such as, checking and maintenance of control box and drain pumps, etc.
- 1) One inspection hatch (450 x 450) on the control box side and a space of 300mm or more under the unit. (Fig. A)
 - 2) One inspection hatch (450 x 450) on the control box side and 2 (two) inspection hatches under the unit. (Arrow View B-1)
 - 3) 3 (three) inspection hatches under the unit and the control box. (Arrow View B-2)

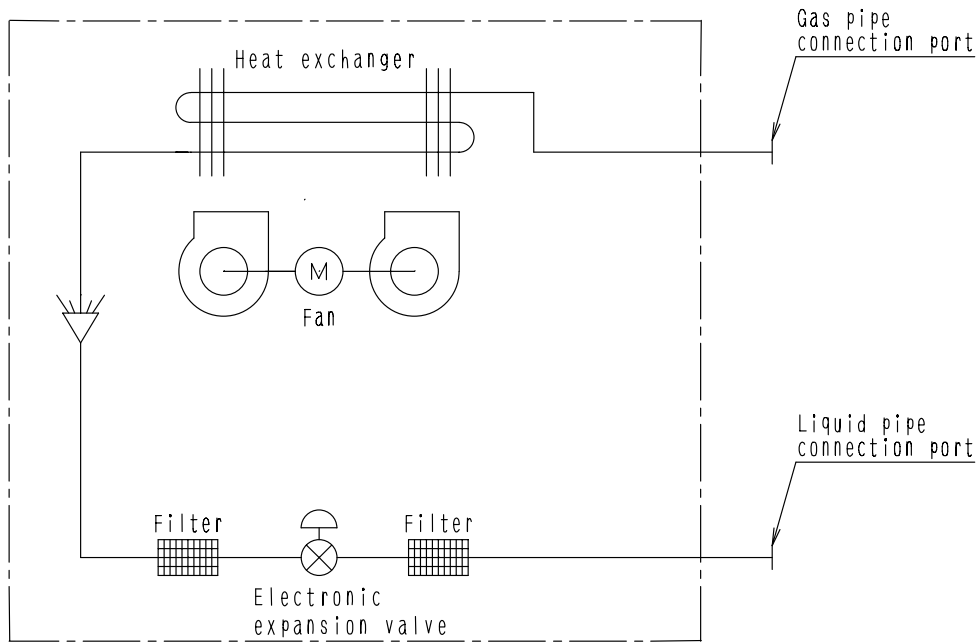
- Notes) 1. Location of MANUFACTURER'S LABEL:
Control box surface
2. Mount the air filter at the suction side.
(Select its color/method (gravity method) (50% or more.
 3. Do not locate things should not be wet under the indoor unit.
Dews may drop when humidity reaches over 80%, or a drain gets stuck, or air filters are not clean.



ITEM	PART NAME	REMARK
12	Drain hose (Accessory)	O. D. φ 32 (Outlet)
11	Socket (For maintenance)	φ 25 (O. D. φ 32; I. D. φ 25)
10	Hook	For M10
9	Air suction flange	
8	Air discharge flange	
7	Power supply connection	
6	Interunit wiring connection	
5	Control box (Inside)	
4	Ground terminal (Terminal in Control box)	M4
3	Drain pipe connection	φ 25 (O. D. φ 32; I. D. φ 25)
2	Gas pipe connection	φ 15.9 flare connection
1	Liquid pipe connection	φ 9.5 flare connection

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4. Piping Diagrams



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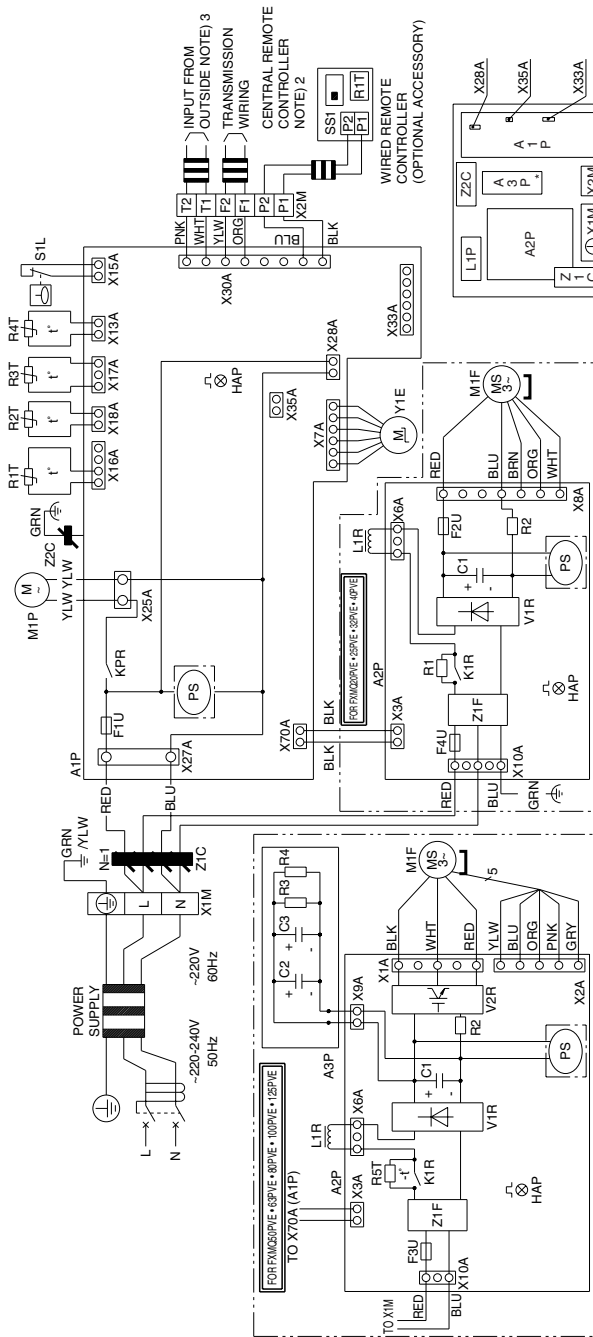
■ Refrigerant pipe connection port diameters

(mm)

Model	Gas	Liquid
FXMQ20P / 25P / 32P / 40P / 50PVE	φ12.7	φ6.4
FXMQ63P / 80P / 100P / 125PVE	φ15.9	φ9.5

5. Wiring Diagrams

FXMQ20P / 25P / 32P / 40P / 50P / 63P / 80P / 100P / 125PVE



EL COMPO. BOX (INDOOR)
 *ONLY FXMQ50PVE • 63PVE • 80PVE • 100PVE • 125PVE

- NOTES) 1. : TERMINAL : CONNECTOR : FIELD WIRING
 2. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
 3. WHEN 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 THE UNIT.
 4. COLORS: BLK : BLACK RED : RED BLU : BLUE WHT : WHITE
 PNK : PINK YLW : YELLOW BRN : BROWN GRY : GRAY GRN : GREEN
 ORG : ORANGE.

INDOOR UNIT	PS	SWITCHING POWER SUPPLY (A1P, A2P)	X2M	TERMINAL STRIP (CONTROL)
A1P PRINTED CIRCUIT BOARD	R1 RESISTOR (CURRENT LIMITING)	RESISTOR (CURRENT LIMITING)	Y1E ELECTRONIC EXPANSION VALVE	ELECTRONIC EXPANSION VALVE
A2P PRINTED CIRCUIT BOARD (FAN)	R2 CURRENT SENSING DEVICE	CURRENT SENSING DEVICE	Z1C, Z2C NOISE FILTER (FERRITE CORE)	NOISE FILTER (FERRITE CORE)
A3P PRINTED CIRCUIT BOARD (CAPACITOR)	R3, R4 RESISTOR (ELECTRIC DISCHARGE)	RESISTOR (ELECTRIC DISCHARGE)	Z1F NOISE FILTER	NOISE FILTER
C1, C2, C3 CAPACITOR	R1T THERMISTOR (SUCTION AIR)	THERMISTOR (SUCTION AIR)	CONNECTOR OPTIONAL	CONNECTOR OPTIONAL
F1U FUSE (T, 3.15A, 250V)	R2T THERMISTOR (LIQUID)	THERMISTOR (LIQUID)	X28A ACCESSORY	CONNECTOR
F2U FUSE (T, 5A, 250V)	R3T THERMISTOR (GAS)	THERMISTOR (GAS)	X33A POWER SUPPLY FOR WIRING)	CONNECTOR
F3U FUSE (T, 6.3A, 250V)	R4T THERMISTOR (DISCHARGE AIR)	THERMISTOR (DISCHARGE AIR)	X35A CONNECTOR (ADAPTER)	CONNECTOR (FOR WIRING)
F4U FUSE (T, 6.3A, 250V)	R5T THERMISTOR NTC (CURRENT LIMITING)	THERMISTOR NTC (CURRENT LIMITING)	WIRED REMOTE CONTROLLER	WIRED REMOTE CONTROLLER
HAP LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)	S1L FLOAT SWITCH	FLOAT SWITCH	R1T THERMISTOR (AIR)	THERMISTOR (AIR)
KPR MAGNETIC RELAY	V1R DIODE BRIDGE	DIODE BRIDGE	SS1 SELECTOR SWITCH (MAIN/SUB)	SELECTOR SWITCH
K1R MAGNETIC RELAY	V2R POWER MODULE	POWER MODULE		
L1R REACTOR	X1M TERMINAL STRIP (POWER SUPPLY)	TERMINAL STRIP (POWER SUPPLY)		
M1F MOTOR (FAN)				
M1P MOTOR (DRAIN PUMP)				

3D058783A

6. Electric Characteristics

Model	Power supply				IFM		Input (W)		
	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
FXMQ20PVE	50	220~240V	Max. 264V Min. 198V	0.6	16	0.090	0.5	81	69
FXMQ25PVE				0.6	16	0.090	0.5	81	69
FXMQ32PVE				0.6	16	0.090	0.5	85	73
FXMQ40PVE				1.4	16	0.140	1.1	194	182
FXMQ50PVE				1.6	16	0.350	1.3	215	203
FXMQ63PVE				1.8	16	0.350	1.4	230	218
FXMQ80PVE				2.3	16	0.350	1.8	298	286
FXMQ100PVE				2.9	16	0.350	2.3	376	364
FXMQ125PVE				3.4	16	0.350	2.7	461	449

Symbols :

MCA : Min. Circuit Amps (A)
 MFA : Max. Fuse Amps (See note 5)
 KW : Fan Motor Rated Output(kW)
 FLA : Full Load Amps(A)
 IFM : Indoor Fan Motor

Note :

- Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits.
- Maximum allowable voltage unbalance between phases is 2%.
- MCA/MFA
 $MCA = 1.25 \times FLA$
 $MFA \leq 4 \times FLA$
 (Next lower standard fuse rating, Min. 16A)
- Select wire size based on the MCA.
- Instead of fuse, use circuit breaker.

C : 4D060439A

FXMQ-P

[50Hz]

Cooling capacity

Unit Size	Indoor air temp.														
	14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB		
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	
80	100	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4
	120	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4
	140	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4
	160	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4
	180	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4
	200	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4
	210	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4
	230	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4
	250	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4
	270	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4
	310	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4
	330	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4
370	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4	
390	6.1	5.3	7.2	6.1	8.4	6.9	9.0	7.0	9.6	7.1	10.8	7.4	11.4	7.4	
100	100	7.6	6.4	9.0	7.3	10.5	8.3	11.2	8.5	11.9	8.7	13.4	9.0	14.2	8.9
	120	7.6	6.4	9.0	7.3	10.5	8.3	11.2	8.5	11.9	8.7	13.4	9.0	14.2	8.9
	140	7.6	6.4	9.0	7.3	10.5	8.3	11.2	8.5	11.9	8.7	13.4	9.0	14.2	8.9
	160	7.6	6.4	9.0	7.3	10.5	8.3	11.2	8.5	11.9	8.7	13.4	9.0	14.2	8.9
	180	7.6	6.4	9.0	7.3	10.5	8.3	11.2	8.5	11.9	8.7	13.4	9.0	14.2	8.9
	200	7.6	6.4	9.0	7.3	10.5	8.3	11.2	8.5	11.9	8.7	13.4	9.0	14.2	8.9
	210	7.6	6.4	9.0	7.3	10.5	8.3	11.2	8.5	11.9	8.7	13.4	9.0	14.2	8.9
	230	7.6	6.4	9.0	7.3	10.5	8.3	11.2	8.5	11.9	8.7	13.4	9.0	14.2	8.9
	250	7.6	6.4	9.0	7.3	10.5	8.3	11.2	8.5	11.9	8.7	13.4	9.0	14.2	8.9
	270	7.6	6.4	9.0	7.3	10.5	8.3	11.2	8.5	11.9	8.7	13.4	9.0	14.2	8.9
	310	7.6	6.4	9.0	7.3	10.5	8.3	11.2	8.5	11.9	8.7	13.4	9.0	14.2	8.9
	330	7.6	6.4	9.0	7.3	10.5	8.3	11.2	8.5	11.9	8.7	13.4	9.0	14.2	8.9
370	7.6	6.4	9.0	7.3	10.5	8.3	11.0	8.4	11.2	8.3	11.4	8.0	11.7	7.7	
390	7.6	6.4	9.0	7.3	10.5	8.3	10.8	8.3	11.0	8.2	11.2	7.9	11.5	7.6	
125	100	9.4	8.0	11.3	9.2	13.1	10.3	14.0	10.5	14.9	10.8	16.7	11.1	17.7	11.1
	120	9.4	8.0	11.3	9.2	13.1	10.3	14.0	10.5	14.9	10.8	16.7	11.1	17.7	11.1
	140	9.4	8.0	11.3	9.2	13.1	10.3	14.0	10.5	14.9	10.8	16.7	11.1	17.7	11.1
	160	9.4	8.0	11.3	9.2	13.1	10.3	14.0	10.5	14.9	10.8	16.7	11.1	17.7	11.1
	180	9.4	8.0	11.3	9.2	13.1	10.3	14.0	10.5	14.9	10.8	16.7	11.1	17.7	11.1
	200	9.4	8.0	11.3	9.2	13.1	10.3	14.0	10.5	14.9	10.8	16.7	11.1	17.7	11.1
	210	9.4	8.0	11.3	9.2	13.1	10.3	14.0	10.5	14.9	10.8	16.7	11.1	17.7	11.1
	230	9.4	8.0	11.3	9.2	13.1	10.3	14.0	10.5	14.9	10.8	16.7	11.1	17.7	11.1
	250	9.4	8.0	11.3	9.2	13.1	10.3	14.0	10.5	14.9	10.8	16.7	11.1	17.7	11.1
	270	9.4	8.0	11.3	9.2	13.1	10.3	14.0	10.5	14.9	10.8	16.7	11.1	17.7	11.1
	310	9.4	8.0	11.3	9.2	13.1	10.3	14.0	10.5	14.9	10.7	15.2	10.4	15.8	10.2
	330	9.4	8.0	11.3	9.2	13.1	10.3	14.0	10.5	14.6	10.6	14.7	10.2	15.1	9.9
370	9.4	8.0	11.3	9.2	13.1	10.3	13.9	10.4	14.3	10.4	14.3	10.0	14.6	9.6	
390	9.4	8.0	11.3	9.2	13.1	10.3	13.5	10.3	13.7	10.2	14.1	9.9	14.4	9.5	

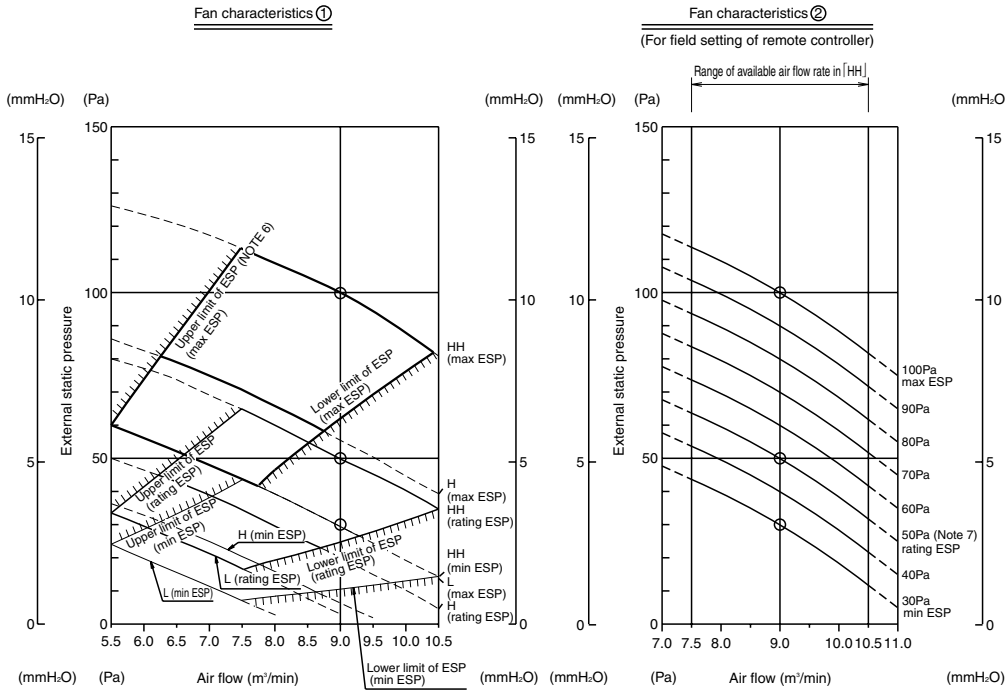
TC Total capacity ; kW
SHC Sensible heat capacity ; kW

Refer to Outdoor Unit Capacity Tables : on page 491-, 552-, for the actual performance data of each indoor and outdoor unit combination.

8. Fan Performances

8.1 Fan Performance

FXMQ20P / 25PVE

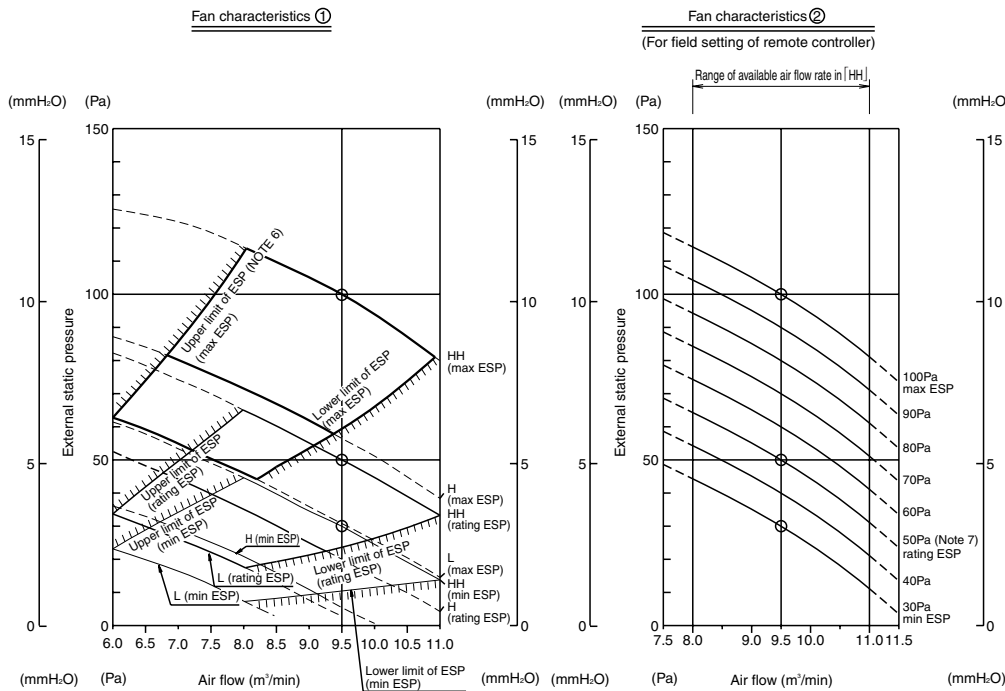


Notes:

1. As for this machine, setting is possible by 8 position of ESP.
2. Fan characteristics ① shows a fan characteristic at the time of the "maximum ESP" "rating ESP" "minimum ESP" as a representative.
3. Fan characteristics ② (for field setting of remote controller) shows a fan characteristic of each ESP of field setting possible air flow "HH".
4. Please choose ESP setting by using Fan characteristics ① and Fan characteristics ② by the resistance of a connected duct.
5. The remote controller can be used to change "HH" "H" and "L".
6. ESP : external static pressure
7. The value in this figure shows ESP in rating air flow.

3D062537

FXMQ32PVE

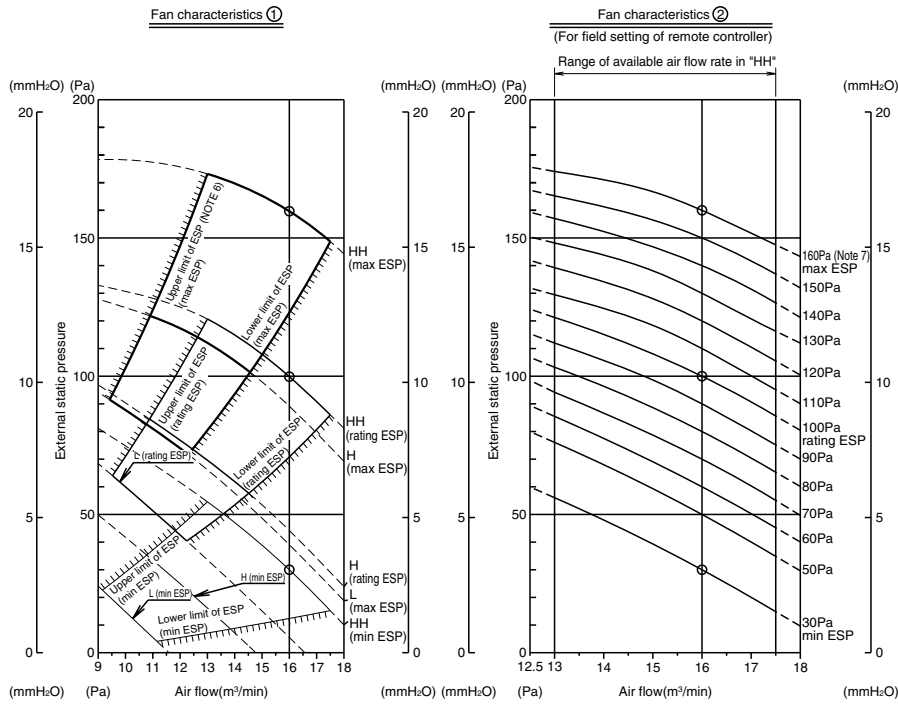


Notes:

1. As for this machine, setting is possible by 8 position of ESP.
2. Fan characteristics ① shows a fan characteristic at the time of the "maximum ESP" "rating ESP" "minimum ESP" as a representative.
3. Fan characteristics ② (for field setting of remote controller) shows a fan characteristic of each ESP of field setting possible air flow "HH".
4. Please choose ESP setting by using Fan characteristics ① and Fan characteristics ② by the resistance of a connected duct.
5. The remote controller can be used to change "HH" "H" and "L".
6. ESP : external static pressure
7. The value in this figure shows ESP in rating air flow.

3D062538

FXMQ40PVE

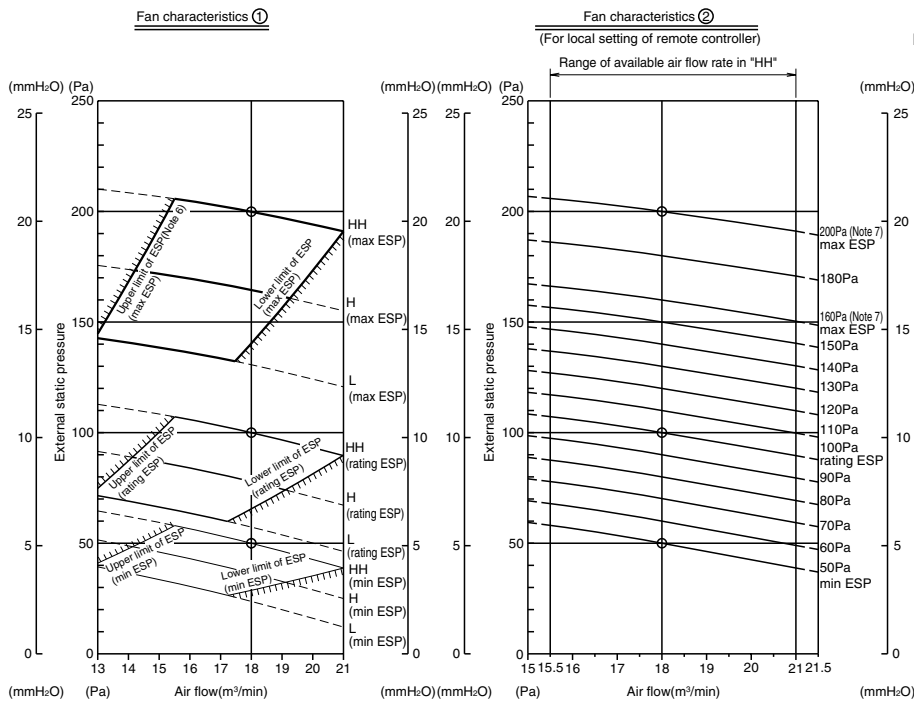


- Notes:
- As for this machine, setting is possible by 13 position of ESP.
 - Fan characteristics ① shows a fan characteristic at the time of the "maximum ESP" "rating ESP" "minimum ESP" as a representative.
 - Fan characteristics ② (for field setting of remote controller) shows a fan characteristic of each ESP of field setting possible air flow "HH".
 - Please choose ESP setting by using Fan characteristics ① and Fan characteristics ② by the resistance of a connected duct.
 - The remote controller can be used to change "HH" "H" and "L".
 - ESP : external static pressure
 - The value in this figure shows ESP in rating air flow.
 - Please set the external static pressure of the suction duct at 150Pa or less.

3D060456A

7

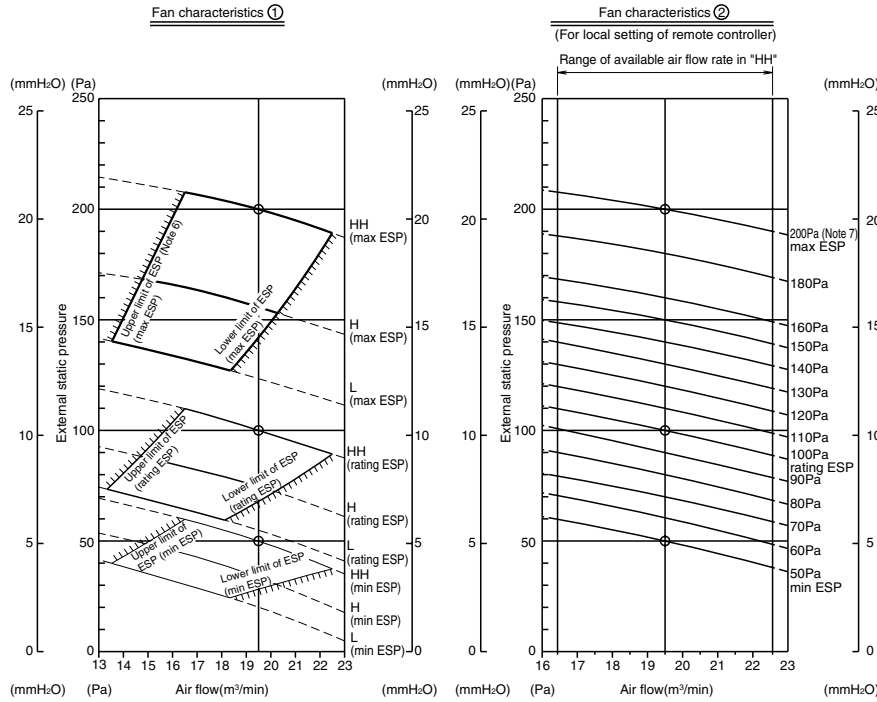
FXMQ50PVE



- Notes:
- As for this machine, setting is possible by 14 position of ESP.
 - Fan characteristics ① shows a fan characteristic at the time of the "maximum ESP" "rating ESP" "minimum ESP" as a representative.
 - Fan characteristics ② (for field setting of remote controller) shows a fan characteristic of each ESP of field setting possible air flow "HH".
 - Please choose ESP setting by using Fan characteristics ① and Fan characteristics ② by the resistance of a connected duct.
 - The remote controller can be used to change "HH" "H" and "L".
 - ESP : external static pressure
 - The value in this figure shows ESP in rating air flow.
 - Please set the external static pressure of the suction duct at 150Pa or less.

3D060457B

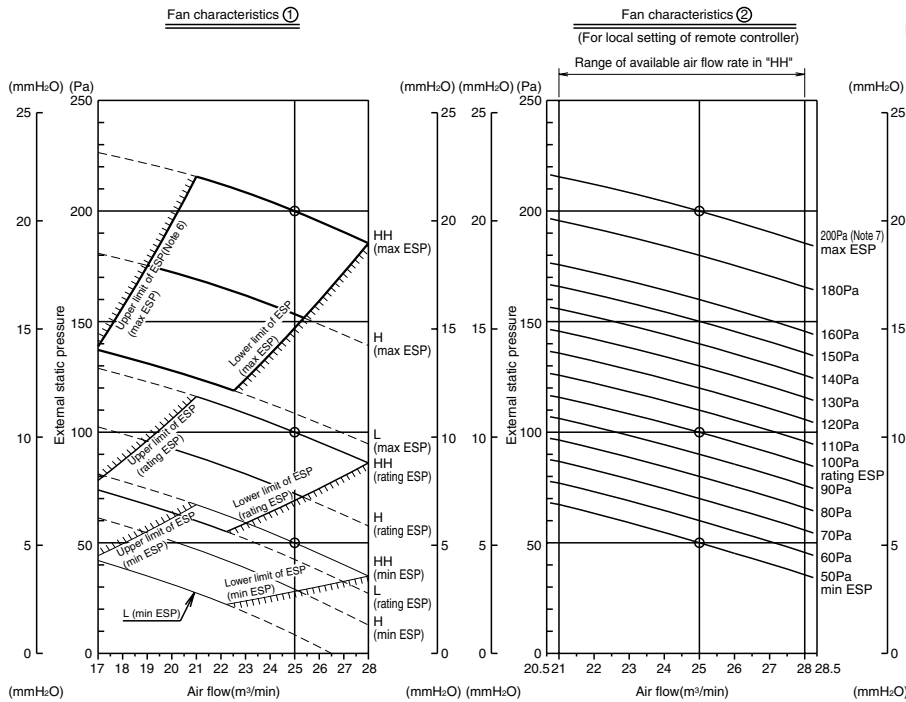
FXMQ63PVE



- Notes:
- As for this machine, setting is possible by 14 position of ESP.
 - Fan characteristics ① shows a fan characteristic at the time of the "maximum ESP" "rating ESP" "minimum ESP" as a representative.
 - Fan characteristics ② (for field setting of remote controller) shows a fan characteristic of each ESP of field setting possible air flow "HH".
 - Please choose ESP setting by using Fan characteristics ① and Fan characteristics ② by the resistance of a connected duct.
 - The remote controller can be used to change "HH" "H" and "L".
 - ESP : external static pressure
 - The value in this figure shows ESP in rating air flow.
 - Please set the external static pressure of the suction duct at 150Pa or less.

3D060458A

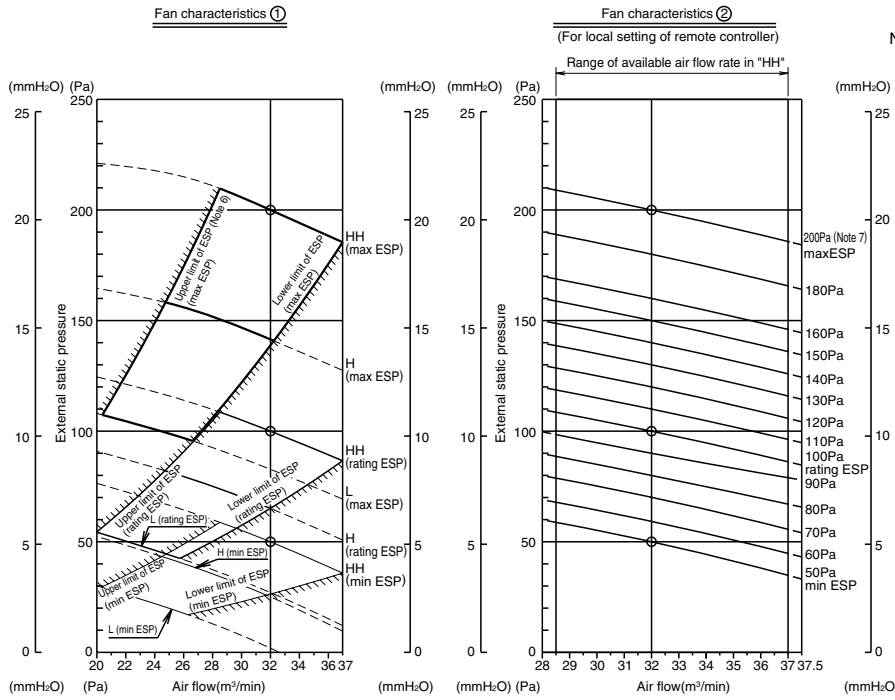
FXMQ80PVE



- Notes:
- As for this machine, setting is possible by 14 position of ESP.
 - Fan characteristics ① shows a fan characteristic at the time of the "maximum ESP" "rating ESP" "minimum ESP" as a representative.
 - Fan characteristics ② (for field setting of remote controller) shows a fan characteristic of each ESP of field setting possible air flow "HH".
 - Please choose ESP setting by using Fan characteristics ① and Fan characteristics ② by the resistance of a connected duct.
 - The remote controller can be used to change "HH" "H" and "L".
 - ESP : external static pressure
 - The value in this figure shows ESP in rating air flow.
 - Please set the external static pressure of the suction duct at 150Pa or less.

3D060459A

FXMQ100PVE

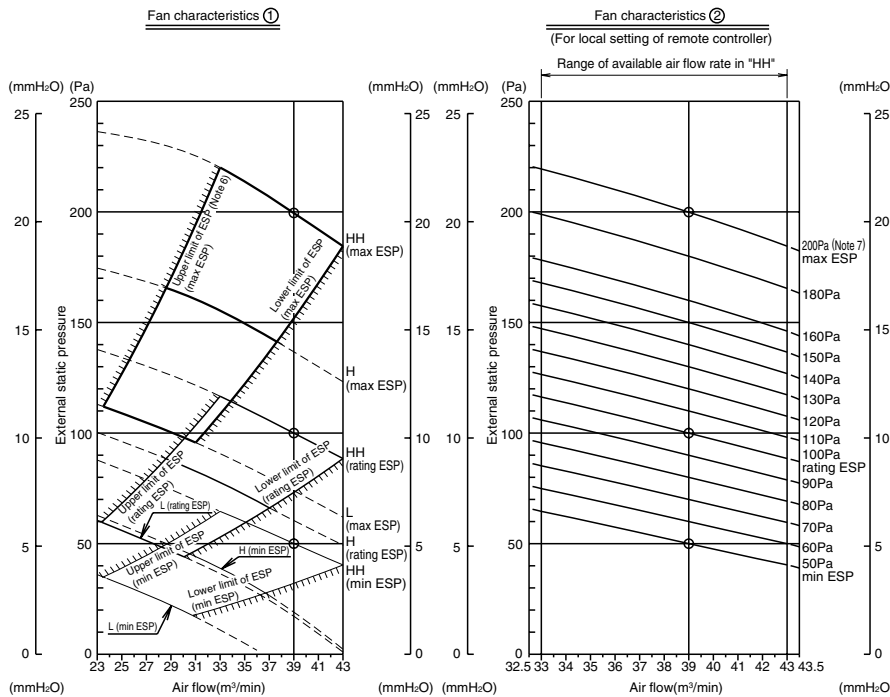


- Notes:
- As for this machine, setting is possible by 14 position of ESP.
 - Fan characteristics ① shows a fan characteristic at the time of the "maximum ESP" "rating ESP" "minimum ESP" as a representative.
 - Fan characteristics ② (for field setting of remote controller) shows a fan characteristic of each ESP of field setting possible air flow "HH".
 - Please choose ESP setting by using Fan characteristics ① and Fan characteristics ② by the resistance of a connected duct.
 - The remote controller can be used to change "HH" "H" and "L".
 - ESP : external static pressure
 - The value in this figure shows ESP in rating air flow.
 - Please set the external static pressure of the suction duct at 150Pa or less.

7

3D060460A

FXMQ125PVE

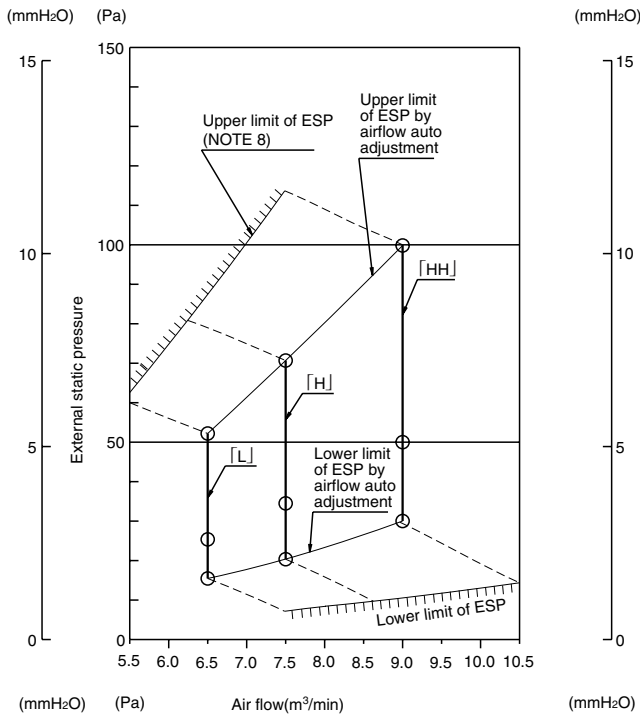


- Notes:
- As for this machine, setting is possible by 14 position of ESP.
 - Fan characteristics ① shows a fan characteristic at the time of the "maximum ESP" "rating ESP" "minimum ESP" as a representative.
 - Fan characteristics ② (for field setting of remote controller) shows a fan characteristic of each ESP of field setting possible air flow "HH".
 - Please choose ESP setting by using Fan characteristics ① and Fan characteristics ② by the resistance of a connected duct.
 - The remote controller can be used to change "HH" "H" and "L".
 - ESP : external static pressure
 - The value in this figure shows ESP in rating air flow.
 - Please set the external static pressure of the suction duct at 150Pa or less.

3D060461A

8.2 “Air Flow Auto Adjustment” Characteristics

FXMQ20P / 25PVE

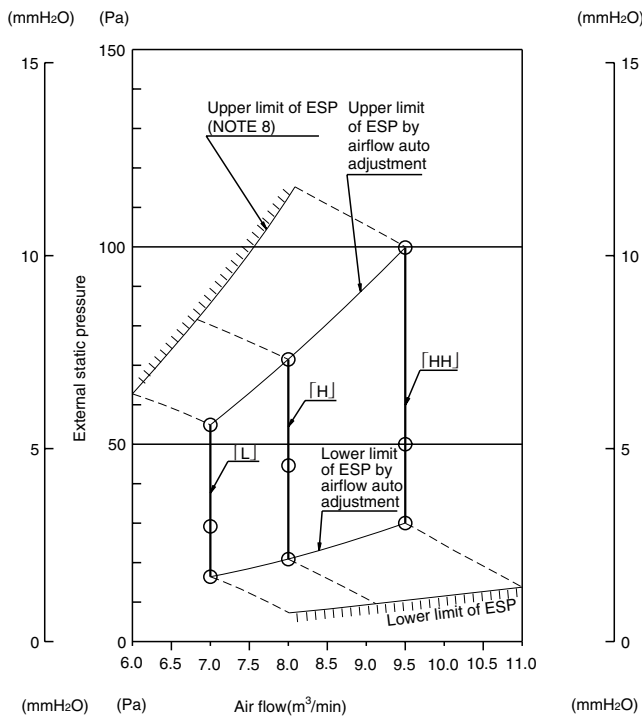


Notes:

1. As for this machine, less than 10% of the volume of blow-off air is automatically adjusted to the rated quantity by airflow auto adjustment at the time of installation.
2. After duct construction completion, please perform local setting "airflow auto adjustment" by remote controller.
3. About the local setting method of the "airflow auto adjustment", look at the installation manual which is attached to an indoor unit.
4. External static pressure that can adjust by "airflow auto adjustment" function is 30Pa-100Pa (When air flow is HH).
5. It is not operated auto adjustment, operated in air flow that is different from rated quantity in the case of use out of external static pressure range mentioned above.
6. This figure shows a fan characteristics at the time of "HH" "H" and "L".
7. The remote controller can be used to change "HH" "H" and "L".
8. ESP : external static pressure.

3D062539

FXMQ32PVE

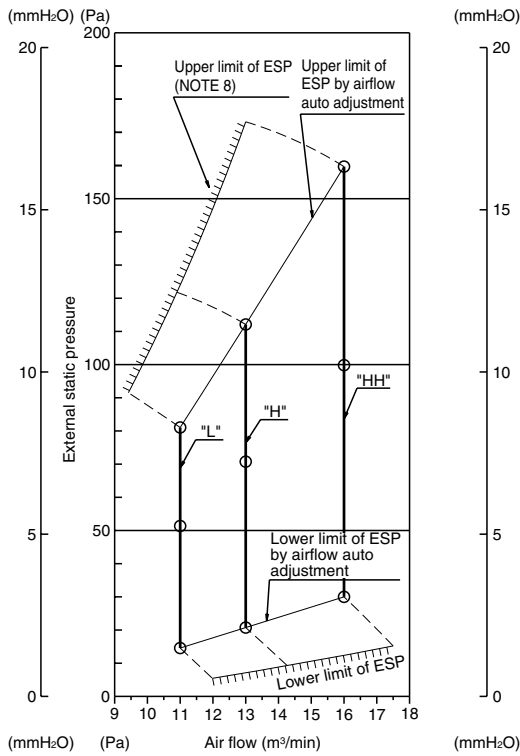


Notes:

1. As for this machine, less than 10% of the volume of blow-off air is automatically adjusted to the rated quantity by airflow auto adjustment at the time of installation.
2. After duct construction completion, please perform local setting "airflow auto adjustment" by remote controller.
3. About the local setting method of the "airflow auto adjustment", look at the installation manual which is attached to an indoor unit.
4. External static pressure that can adjust by "airflow auto adjustment" function is 30Pa-100Pa (When air flow is HH).
5. It is not operated auto adjustment, operated in air flow that is different from rated quantity in the case of use out of external static pressure range mentioned above.
6. This figure shows a fan characteristics at the time of "HH" "H" and "L".
7. The remote controller can be used to change "HH" "H" and "L".
8. ESP : external static pressure.

3D062540

FXMQ40PVE



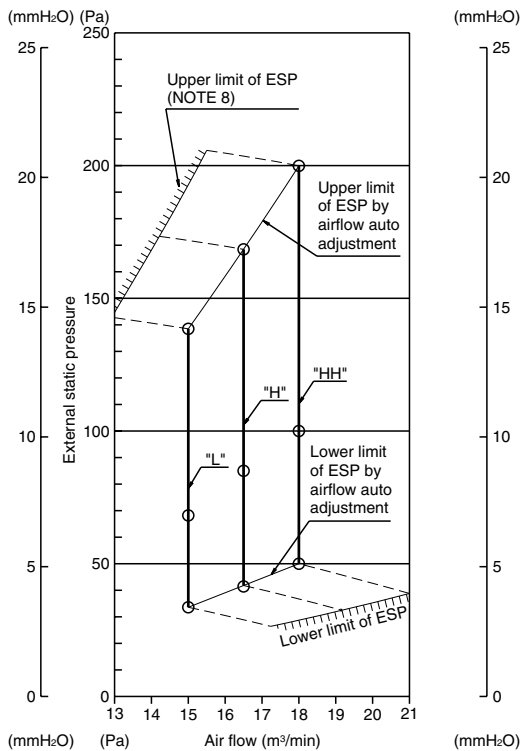
Notes:

1. As for this machine, less than 10% of the volume of blow-off air is automatically adjusted to the rated quantity by airflow auto adjustment at the time of installation.
2. After duct construction completion, please perform local setting "airflow auto adjustment" by remote controller.
3. About the local setting method of the "airflow auto adjustment", look at the installation manual which is attached to an indoor unit.
4. External static pressure that can adjust by "airflow auto adjustment" function is 30Pa - 160Pa (When air flow is HH).
5. It is not operated auto adjustment, operated in air flow that is different from rated quantity in the case of use out of external static pressure range mentioned above.
6. This figure shows a fan characteristics at the time of "HH" "H" and "L".
7. The remote controller can be used to change "HH" "H" and "L".
8. ESP : external static pressure.
9. Please set the external static pressure of the suction duct at 150Pa or less.

3D060577A

7

FXMQ50PVE

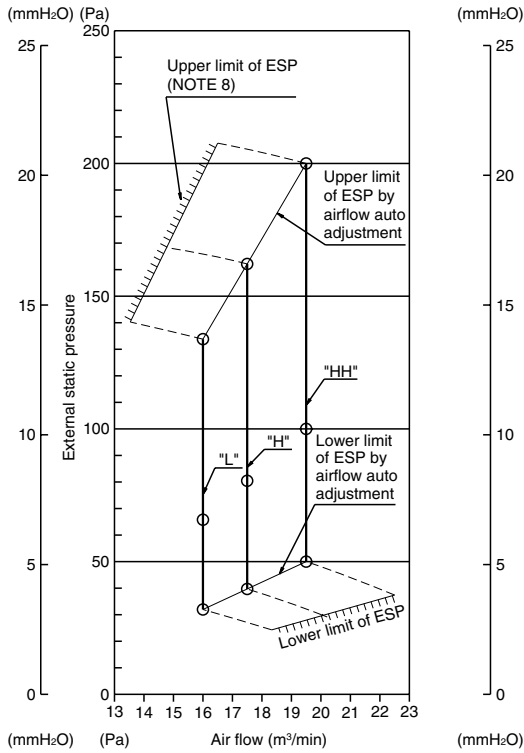


Notes:

1. As for this machine, less than 10% of the volume of blow-off air is automatically adjusted to the rated quantity by airflow auto adjustment at the time of installation.
2. After duct construction completion, please perform local setting "airflow auto adjustment" by remote controller.
3. About the local setting method of the "airflow auto adjustment", look at the installation manual which is attached to an indoor unit.
4. External static pressure that can adjust by "airflow auto adjustment" function is 50Pa - 200Pa (When air flow is HH).
5. It is not operated auto adjustment, operated in air flow that is different from rated quantity in the case of use out of external static pressure range mentioned above.
6. This figure shows a fan characteristics at the time of "HH" "H" and "L".
7. The remote controller can be used to change "HH" "H" and "L".
8. ESP : external static pressure.
9. Please set the external static pressure of the suction duct at 150Pa or less.

3D060578A

FXMQ63PVE

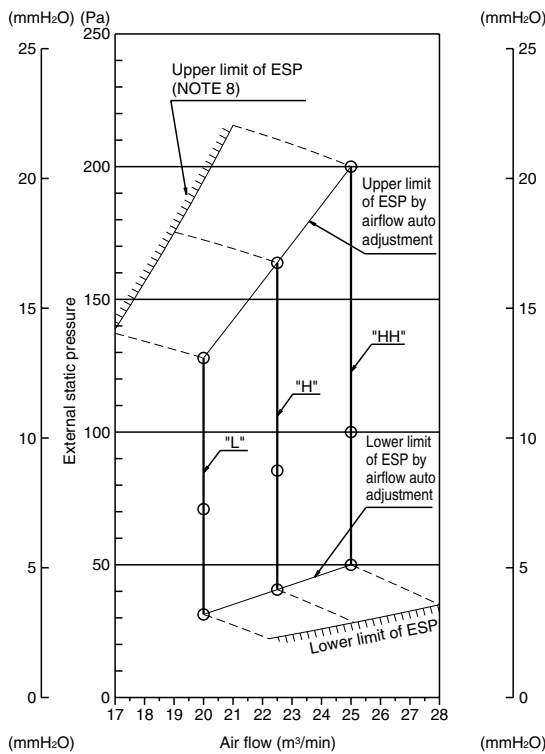


Notes:

1. As for this machine, less than 10% of the volume of blow-off air is automatically adjusted to the rated quantity by airflow auto adjustment at the time of installation.
2. After duct construction completion, please perform local setting "airflow auto adjustment" by remote controller.
3. About the local setting method of the "airflow auto adjustment", look at the installation manual which is attached to an indoor unit.
4. External static pressure that can adjust by "airflow auto adjustment" function is 50Pa - 200Pa (When air flow is HH).
5. It is not operated auto adjustment, operated in air flow that is different from rated quantity in the case of use out of external static pressure range mentioned above.
6. This figure shows a fan characteristics at the time of "HH" "H" and "L".
7. The remote controller can be used to change "HH" "H" and "L".
8. ESP : external static pressure.
9. Please set the external static pressure of the suction duct at 150Pa or less.

3D060579A

FXMQ80PVE

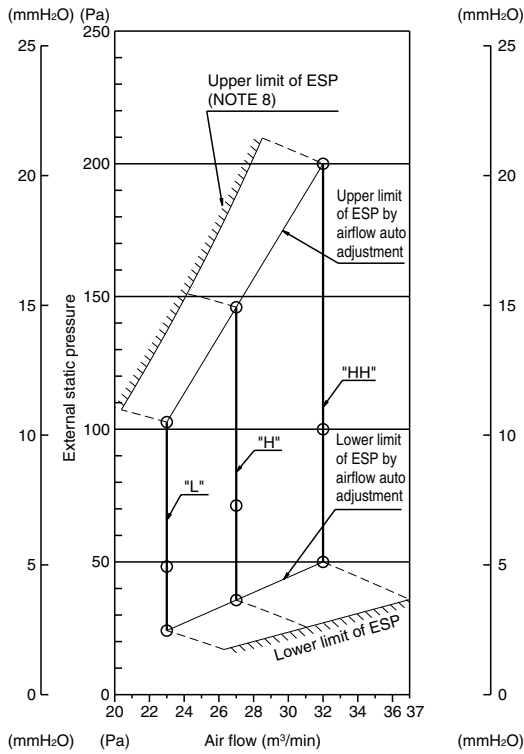


Notes:

1. As for this machine, less than 10% of the volume of blow-off air is automatically adjusted to the rated quantity by airflow auto adjustment at the time of installation.
2. After duct construction completion, please perform local setting "airflow auto adjustment" by remote controller.
3. About the local setting method of the "airflow auto adjustment", look at the installation manual which is attached to an indoor unit.
4. External static pressure that can adjust by "airflow auto adjustment" function is 50Pa - 200Pa (When air flow is HH).
5. It is not operated auto adjustment, operated in air flow that is different from rated quantity in the case of use out of external static pressure range mentioned above.
6. This figure shows a fan characteristics at the time of "HH" "H" and "L".
7. The remote controller can be used to change "HH" "H" and "L".
8. ESP : external static pressure.
9. Please set the external static pressure of the suction duct at 150Pa or less.

3D060580A

FXMQ100PVE



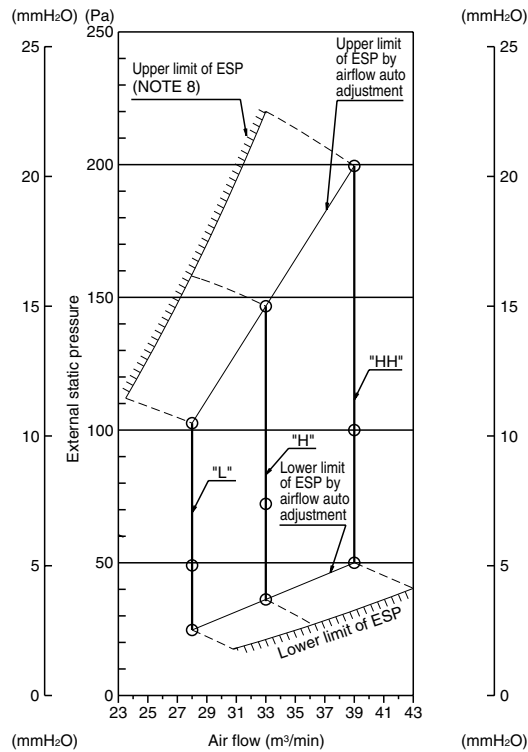
Notes:

1. As for this machine, less than 10% of the volume of blow-off air is automatically adjusted to the rated quantity by airflow auto adjustment at the time of installation.
2. After duct construction completion, please perform local setting "airflow auto adjustment" by remote controller.
3. About the local setting method of the "airflow auto adjustment", look at the installation manual which is attached to an indoor unit.
4. External static pressure that can adjust by "airflow auto adjustment" function is 50Pa - 200Pa (When air flow is HH).
5. It is not operated auto adjustment, operated in air flow that is different from rated quantity in the case of use out of external static pressure range mentioned above.
6. This figure shows a fan characteristics at the time of "HH" "H" and "L".
7. The remote controller can be used to change "HH" "H" and "L".
8. ESP : external static pressure.
9. Please set the external static pressure of the suction duct at 150Pa or less.

3D060581A

7

FXMQ125PVE



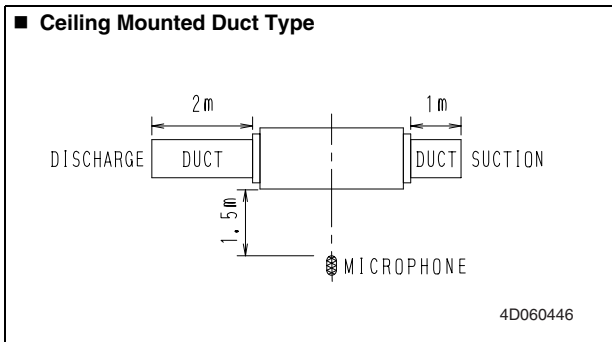
Notes:

1. As for this machine, less than 10% of the volume of blow-off air is automatically adjusted to the rated quantity by airflow auto adjustment at the time of installation.
2. After duct construction completion, please perform local setting "airflow auto adjustment" by remote controller.
3. About the local setting method of the "airflow auto adjustment", look at the installation manual which is attached to an indoor unit.
4. External static pressure that can adjust by "airflow auto adjustment" function is 50Pa - 200Pa (When air flow is HH).
5. It is not operated auto adjustment, operated in air flow that is different from rated quantity in the case of use out of external static pressure range mentioned above.
6. This figure shows a fan characteristics at the time of "HH" "H" and "L".
7. The remote controller can be used to change "HH" "H" and "L".
8. ESP : external static pressure.
9. Please set the external static pressure of the suction duct at 150Pa or less.

3D060582A

9. Sound Levels

Overall



Note:

1. The operating conditions are assumed to be standard (JIS conditions).
2. These operating values were obtained in a dead room (conversion values). Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

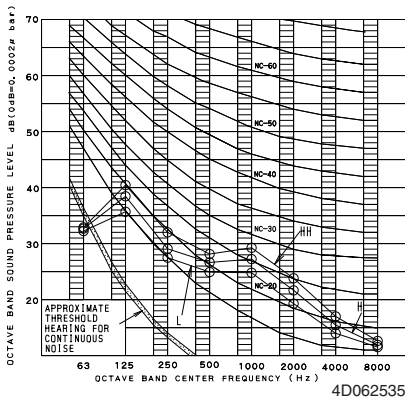
dBA

Model	220~240V 50Hz		
	HH	H	L
FXMQ20P / 25P	33	31	29
FXMQ32P	34	32	30
FXMQ40P	39	37	35
FXMQ50P	41	39	37
FXMQ63P	42	40	38
FXMQ80P	43	41	39
FXMQ100P	43	41	39
FXMQ125P	44	42	40

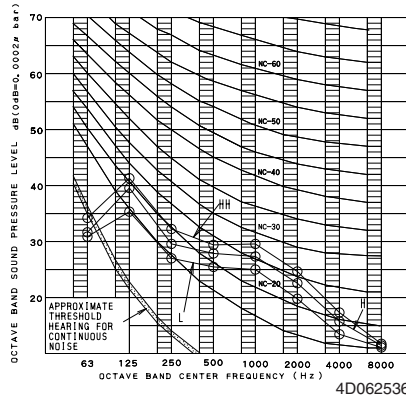
Octave Band Level

○ — ○ 220~240V 50Hz

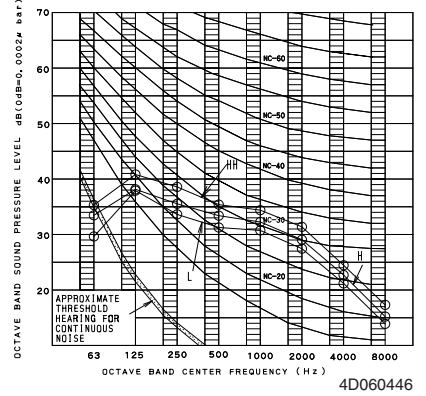
FXMQ20P / 25PVE



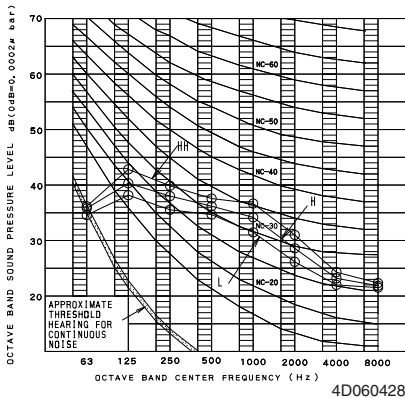
FXMQ32PVE



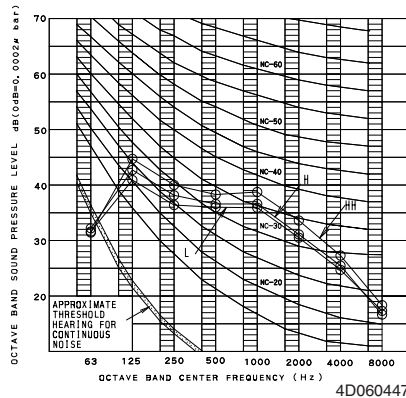
FXMQ40PVE



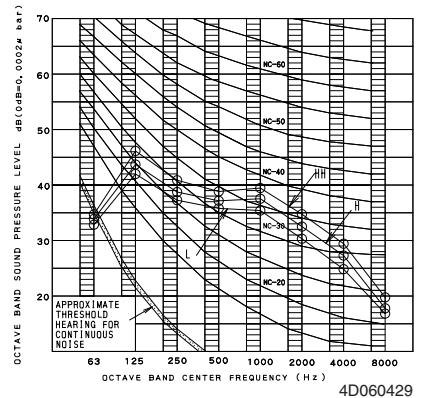
FXMQ50PVE



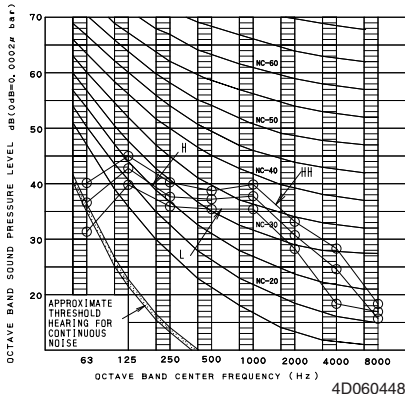
FXMQ63PVE



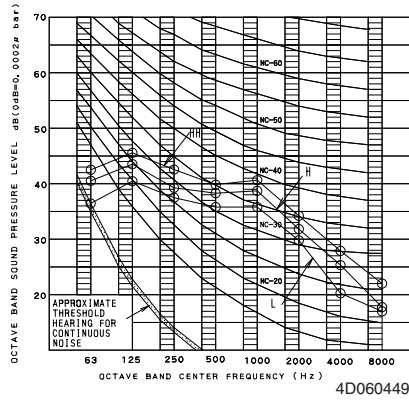
FXMQ80PVE



FXMQ100PVE



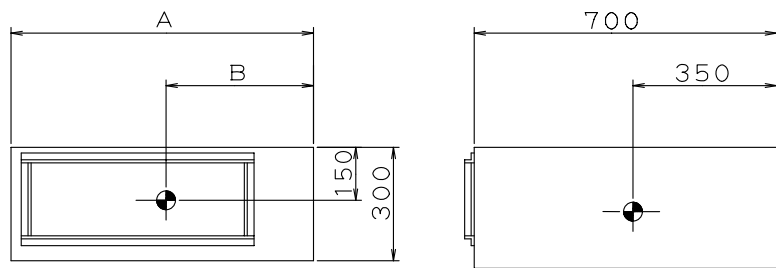
FXMQ125PVE



10.Center of Gravity

FXMQ20P / 25P / 32P / 40P / 50P / 63P / 80P / 100P / 125PVE

Unit (mm)



MODEL NAME	A	B
FXMQ20・25・32PVE	550	210
FXMQ40PVE	700	280
FXMQ50・63・80PVE	1000	460
FXMQ100・125PVE	1400	600

4D060438A

11. Installation Manual



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- 2. BEFORE INSTALLATION 2
- 3. SELECTING INSTALLATION SITE 3
- 4. PREPARATIONS BEFORE INSTALLATION..... 4
- 5. INDOOR UNIT INSTALLATION 5
- 6. REFRIGERANT PIPING WORK 5
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- 9. ELECTRIC WIRING WORK 9
- 10. WIRING EXAMPLE AND HOW TO SET
THE REMOTE CONTROLLER..... 10
- 11. FIELD SETTING..... 12
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1. SAFETY PRECAUTIONS

Please read these "SAFETY PRECAUTIONS" carefully before installing air conditioning unit and be sure to install it correctly. After completing installation, conduct a trial operation to check for faults and explain to the customer how to operate the air conditioner and take care of it with the aid of the operation manual. Ask the customer to store the installation manual along with the operation manual for future reference.

This air conditioner comes under the term "appliances not accessible to the general public".

Safety Precaution

This unit is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Meaning of WARNING and CAUTION notices

⚠ WARNING Failure to follow these instructions properly may result in personal injury or loss of life.

⚠ CAUTION Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

— ⚠ WARNING —

- Ask your dealer or qualified personnel to carry out installation work.
Do not attempt to install the air conditioner yourself. Improper installation may result in water leakage, electric shocks or fire.
- Install the air conditioner in accordance with the instructions in this installation manual.
Improper installation may result in water leakage, electric shocks or fire.
- Consult your local dealer regarding what to do in case of refrigerant leakage. When the air conditioner is to be installed in a small room, it is necessary to take proper measures so that the amount of any leaked refrigerant does not exceed the concentration limit in the event of a leakage. Otherwise, this may lead to an accident due to oxygen depletion.

- Be sure to use only the specified accessories and parts for installation work.
Failure to use the specified parts may result in the unit falling, water leakage, electric shocks or fire.
- Install the air conditioner on a foundation strong enough to withstand the weight of the unit.
A foundation of insufficient strength may result in the equipment falling and causing injury.
- Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.
Failure to do so during installation work may result in the unit falling and causing accidents.
- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.
An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.
- Make sure that all wiring is secured, the specified wires are used, and that there is no strain on the terminal connections or wires.
Improper connections or securing of wires may result in abnormal heat build-up or fire.
- When wiring the power supply and connecting the remote controller wiring and transmission wiring, position the wires so that the control box lid can be securely fastened.
Improper positioning of the control box lid may result in electric shocks, fire or the terminals overheating.
- If refrigerant gas leaks during installation, ventilate the area immediately.
Toxic gas may be produced if the refrigerant comes into contact with fire.
- After completing installation, check for refrigerant gas leakage.
Toxic gas may be produced if the refrigerant gas leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.
- Be sure to switch off the unit before touching any electrical parts.
- Be sure to earth the air conditioner.
Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead. Imperfect earthing may result in electric shocks or fire.
A high surge current from lightning or other sources may cause damage to the air conditioner.
- Be sure to install an earth leakage breaker.
Failure to install an earth leakage breaker may result in electric shocks or fire.

— ⚠ CAUTION —

- While following the instructions in this installation manual, install drain piping to ensure proper drainage and insulate piping to prevent condensation.
Improper drain piping may result in indoor water leakage and property damage.
- Install the indoor and outdoor units, power cord and connecting wires at least 1 meter away from televisions or radios to prevent picture interference and noise.
(Depending on the incoming signal strength, a distance of 1 meter may not be sufficient to eliminate noise.)
- Remote controller (wireless kit) transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types).
Install the indoor unit as far away from fluorescent lamps as possible.

- Do not install the air conditioner in the following locations:
 - Where there is a high concentration of mineral oil spray or vapour (e.g. a kitchen).
Plastic parts will deteriorate, parts may fall off and water leakage could result.
 - Where corrosive gas, such as sulphurous acid gas, is produced.
Corroding of copper pipes or soldered parts may result in refrigerant leakage.
 - Near machinery emitting electromagnetic radiation.
Electromagnetic radiation may disturb the operation of the control system and result in a malfunction of the unit.
 - Where flammable gas may leak, where there is carbon fibre or ignitable dust suspensions in the air, or where volatile flammables such as paint thinner or gasoline are handled.
Operating the unit in such conditions may result in fire.

2. BEFORE INSTALLATION

- When moving the unit while removing it from the carton box, be sure to lift it by holding on to the four lifting lugs without exerting any pressure on other parts, especially, the refrigerant piping, drain piping, flanges and other resin parts.
- Be sure to check the type of R410A refrigerant to be used before installing the unit. (Using an incorrect refrigerant will prevent normal operation of the unit.)
- The accessories needed for installation must be retained in your custody until the installation work is completed. Do not discard them!
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- When moving the unit or after opening, hold the unit by the hanger brackets (x 4). Do not apply force to the refrigerant piping, drain piping, flanges or plastic parts.
- For the installation of outdoor unit, refer to the installation manual attached to the outdoor unit.
- Do not install or operate the unit in rooms mentioned below.
 - Laden with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate which could eventually cause the unit to fall out of place, or could lead to leaks.)
 - Where corrosive gas like sulfurous gas exists. (Copper tubing and brazed spots may corrode which could eventually lead to refrigerant leaks.)
 - Where exposed to combustible gases and where volatile flammable gas like thinner or gasoline is used. (Gas in the vicinity of the unit could ignite.)
 - Where machines can generate electromagnetic waves. (Control system may malfunction.)
 - Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories. Also in vehicles or vessels.
- This unit, both indoor and outdoor, is suitable for installation in a commercial and light industrial environment.
If installed as a household appliance it could cause electromagnetic interference.

2-1 PRECAUTIONS

- Be sure to read this manual before installing the indoor unit.
- Entrust installation to the place of purchase or a qualified serviceman. Improper installation could lead to leaks and, in worse cases, electric shock or fire.

- Use only parts provided with the unit or parts satisfying required specifications. Unspecified parts could cause the unit to fall out of place, or could lead to leaks and, in worse cases, electric shock or fire.
- Be sure to mount an air filter (part to be procured in the field) in the suction air passage in order to prevent water leaking, etc.

2-2 ACCESSORIES

Check that the following accessories are provided and that each accessory is correct in amount.
Refer to the Fig. 1 of this sheet.

[PRECAUTION]

The accessories are required for the installation of the air conditioner. Be sure to keep them until the installation work is completed.

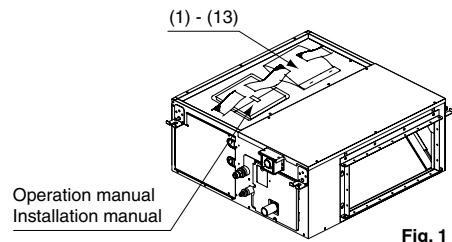


Fig. 1

Name	Metal clamp (1)	Drain hose (2)	Screws for duct flanges (3)	Insulation for fitting								
Quantity	1 pc.	1 pc.	As described in table below	1 each								
Shape			 <table border="1"> <tr> <td>20 • 25 • 32 type</td> <td>6</td> </tr> <tr> <td>40 type</td> <td>10</td> </tr> <tr> <td>50 • 63 • 80 type</td> <td>18</td> </tr> <tr> <td>100 • 125 type</td> <td>26</td> </tr> </table>	20 • 25 • 32 type	6	40 type	10	50 • 63 • 80 type	18	100 • 125 type	26	 Thin for liquid pipe (4) Thick for gas pipe (5)
20 • 25 • 32 type	6											
40 type	10											
50 • 63 • 80 type	18											
100 • 125 type	26											

Name	Sealing pad	Clamp (8)	Washer fixing plate (9)	Wire sealing material (10)
Quantity	—	9 pcs.	4 pcs.	2 pcs.
Shape	 1 pc. Large (Dark gray) (6) 2 pcs. Middle (Dark gray) (7)			 Small (Gray)

Name	Washer (11)	Wire fixing bracket (12)	Wire fixing screw (13)	(Other)
Quantity	8 pcs.	2 pcs.	2 pcs.	<ul style="list-style-type: none"> Operation manual Installation manual
Shape			 M4x8	

2-3 OPTIONAL ACCESSORIES

- These are two types of remote controllers: wired and wireless. Select a remote controller according to customer request and install in an appropriate place.

Table 1

Remote controller	
Wired type	
Wireless type	Heat pump type
	Cooling only type

NOTE

- If you wish to use a remote controller that is not listed in Table 1, select a suitable remote controller after consulting catalogs and technical materials.

FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED.

a. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur.	Check
Are the indoor and outdoor unit fixed firmly?	The units may drop, vibrate or make noise.	
Was the installation of the outdoor unit completed?	The unit may malfunction or the components burn out.	
Is the gas leak test finished?	No cooling or heating.	
Is the unit fully insulated? (Refrigerant piping, drain piping, and duct)	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage conform to the indication on the name plate?	The unit may malfunction or the components burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the air conditioner properly grounded?	Dangerous in case of current leakage.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	No cooling or heating.	
Did you set the external static pressure?	No cooling or heating.	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	
Did you check that no wiring connection screws were loose?	Electric shock or fire.	

Also review the "SAFETY PRECAUTIONS".

b. Items to be checked at time of delivery

Items to be checked	Check
Are you sure the control box lid, air filter, air inlet grille, and air outlet grille are mounted?	
Did you explain about operations while showing the operation manual to your customer?	
Did you deliver the operation manual along with the installation manual to the customer?	
Did you explain the customer the handling and cleaning methods of the field supplies (e.g., the air filter, air inlet grilles, and air outlet grille)?	
Did you deliver instruction manual, if any, for the field supplies to the customer?	

c. Points for explanation about operations

The items with **⚠** WARNING and **⚠** CAUTION marks in the operation manual are the items pertaining to possibilities for bodily injury and material damage in addition to the general usage of the product. Accordingly, it is necessary that you make a full explanation about the described contents and also ask your customers to read the operation manual.

2-4 NOTE TO INSTALLER

- Be sure to instruct customers how to properly operate the unit (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations themselves while looking at the manual.

3. SELECTING INSTALLATION SITE

⚠ Hold the hanging brackets in the case of moving the indoor and outdoor units at the time of and after opening the packages. Do not impose undue force on other parts, such as the refrigerant piping, drain piping, or flanges, in particular.)

⚠ Add heat insulation material to the indoor unit if the temperature above the ceiling is likely to exceed 30°C and a relative humidity of 80%.)

⚠ Make sure that the insulation material is made of glass wool or polyethylene foam, has a minimum thickness of 10 mm, and can be accommodated in the opening on the ceiling.)

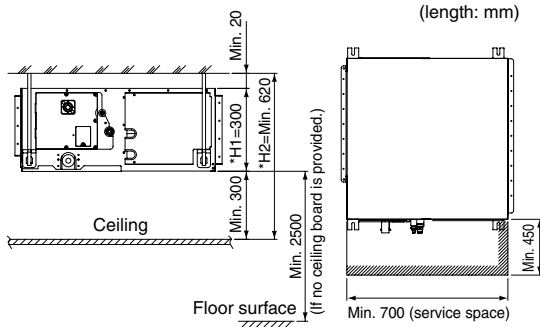
- (1) Select an installation site where the following conditions are fulfilled and that meets with your customer's approval.
 - A place where cool (warm) air is delivered to the entire room.
 - Where nothing blocks the air passage.
 - Where condensate can be properly drained.
 - If supporting structural 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 flammable gas leakage.
 - Where sufficient clearance for maintenance and service can be ensured. **(Refer to Fig. 2-1)**
 - Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual of the outdoor unit.)

⚠ CAUTION

- Install the indoor and outdoor units, power supply wiring and connecting wires at least 1 meter away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.)

- In the case of the installation of a wireless remote controller, the transmission distance of the wireless remote controller may be shortened if the room has a fluorescent light of electronic lighting type (i.e., an inverter or rapid-start fluorescent light). Keep the distance between the receiver and the fluorescent light as far as possible.

- Use hanging bolts to install the indoor unit. Check that the place of installation withstands the weight of the indoor unit. Secure the hanging bolts with proper beams if necessary.



- The H1 dimension indicates the height of the product.
 - Determine the H2 dimension by maintaining a downward slope of at least 1/100 as specified in "7. DRAIN PIPING WORK".
- [Required installation place]
The dimensions indicate the minimum required space of installation.

Fig. 2-1

4. PREPARATIONS BEFORE INSTALLATION

- Check the positional relationship between the ceiling opening hole and the hanging bolt of the unit.
 - For the maintenance, inspection, and other servicing purposes of the control box and drain pump, prepare one of the following service spaces.
 - Inspection hatch 1 (450 × 450) for the control box and a minimum space of 300 mm for the lower part of the product. (Refer to Fig. 2-2)
 - Inspection hatch 1 (450 × 450) for the control box and inspection hatch 2 for the lower part of the product (see axial direction view A-1). (Refer to Fig. 2-3)
 - Inspection hatch 3 for the lower part of the product and the lower part of the control box (see axial direction view A-2). (Refer to Fig. 2-3)

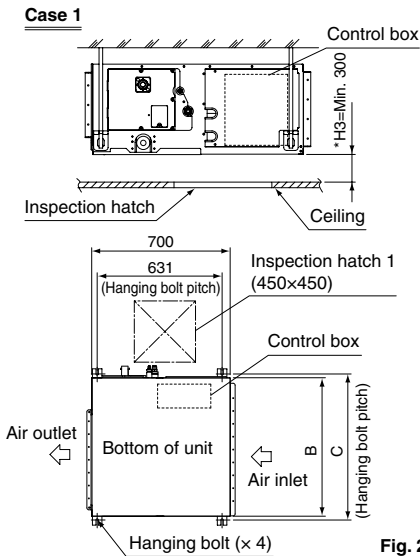
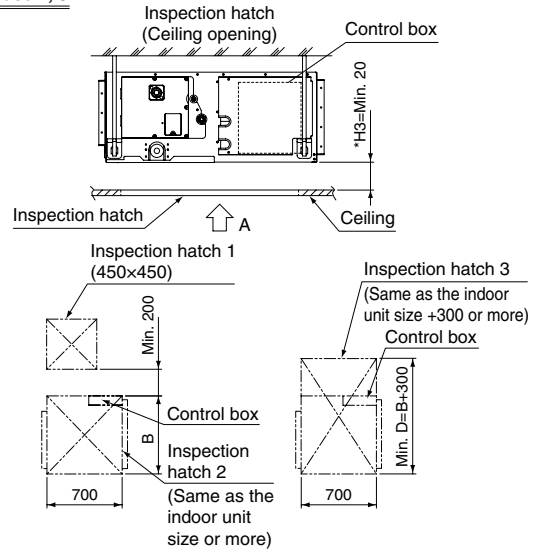


Fig. 2-2

Case 2, 3



Axial direction view A-1

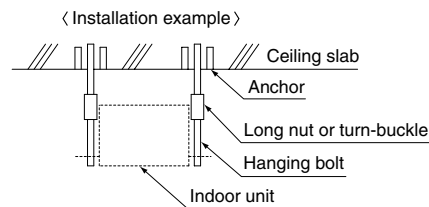
Axial direction view A-2

Fig. 2-3

Model	B	C	D
20 • 25 • 32 type	550	583	850
40 type	700	738	1000
50 • 63 • 80 type	1000	1038	1300
100 • 125 type	1400	1438	1700

(length: mm)

- Determine the H3 dimension by maintaining a downward slope of at least 1/100 as specified in "7. DRAIN PIPING WORK".
- Mount the canvas ducts to the air outlet and inlet so that the vibration of the air conditioner will not be transmitted to the duct or ceiling. Apply a sound-absorbing material (insulation material) to the inner wall of the duct and vibration insulation rubber to the hanging bolts (refer to 8. DUCT WORK).
 - Open installation holes (if the ceiling already exists).
 - Open the installation holes on the ceiling. Lay the refrigerant piping, drain piping, power line, transmission wiring, and remote controller wiring for the piping and wiring connection port of the unit.
In the case of the installation of a wireless remote controller, refer to the installation manual provided with the wireless remote controller.
Refer to 6. REFRIGERANT PIPING WORK, 7. DRAIN PIPING WORK, and 10. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER.
 - The ceiling framework may need reinforcement in order to keep the ceiling horizontal and prevent the vibration of the ceiling after the installation holes are opened. For details, consult your construction or interior contractor.
 - Install the hanging bolts. Make sure that the hanging bolts are M10 in size.
 - Use hole-in anchors if the hanging bolts already exist; otherwise use embedded inserts and embedded foundation bolts so that they will withstand the weight of the unit. Adjust the distance to the ceiling surface in advance.



Note) All the above parts are field supplied.

5. INDOOR UNIT INSTALLATION

(It may be easier to install accessories (sold separately) before installing the indoor unit. Refer to the installation manuals provided to the accessories as well.)

Be sure to use the accessories and specified parts for installation work.

- (1) Temporarily install the indoor unit.
 - Connect the hanging brackets to the hanging bolts. Be sure to use and tighten the nut and washer (11) for each hanging bracket from both upper and lower sides of the hanging bracket. (Refer to Fig. 3) At that time, the fall of the washer (11) for the hanging bracket can be prevented if the washing fixing plate (9) is used.

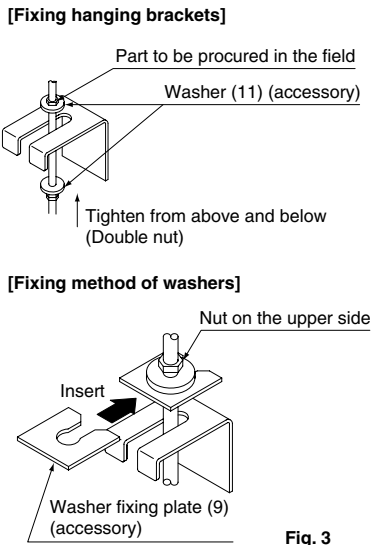
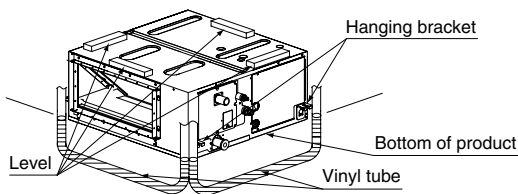


Fig. 3

- ⚠ CAUTION
 - During the installation work, perform the curing of the air outlet and protect the resin drain pan of the indoor unit from the intrusion of foreign substances, such as welding spatters. Otherwise, water leakage may occur as a result of damage, such as hole damage, to the resin drain pan.

- (2) Make adjustments so that the unit will be in the right position.
- (3) Check the level of the unit.
- (4) Remove the washer fixing plates for the falling prevention of the washers for the hanging brackets, tighten the nuts on the upper side, and securely fix the unit.



- ⚠ CAUTION
 - Use the level and check that the unit is installed horizontally. (4-directions)
 - In the case of using a vinyl tube in place of the level, put the both edges of the vinyl tube in close contact with the bottom of the product to make levelness adjustment. If the unit is installed at a slant with the drain pipe side set high, in particular, the float switch will not operate normally and water leakage may result.

6. REFRIGERANT PIPING WORK

⚠ CAUTION
 (As for the refrigerant piping of the outdoor unit, refer to the installation manual provided to the outdoor unit.)
 (Perform heat insulation work on both gas piping and liquid piping, or otherwise water leakage may result.)
 (Use the insulation material that withstands a temperature of 120°C.)
 (Reinforce the insulation material for the refrigerant piping if the ambient temperature is high, or otherwise dew condensation may result on the surface of the insulation material.)
 (Make sure that the refrigerant is R410A before refrigerant piping work. If the refrigerant is different, the air conditioner will not operate normally.)

- ⚠ CAUTION
 - This product uses new refrigerant (R410A) only. Be sure to keep the items on the right-hand side and conduct the installation work.
 - Use a dedicated pipe cutter and flare tool for R410A.
 - When connecting the flare, apply ether oil or ester oil only to inner side of the flare.
 - Be sure to use the flare nut provided with the unit. (Do not use a different flare nut (such as a type-1 flare nut), or otherwise refrigerant leakage may result.)
 - Perform the curing of the piping with pinching or taping of the piping in order to prevent the intrusion of dirt, dust, and moisture into the piping.

- ⚠ CAUTION
 - Be sure to use the specified type of refrigerant for the refrigeration cycle and do not contaminate the refrigerant with air.
 - Ventilate the room in case of refrigerant leakage during installation work.

- (1) Connect the piping.
 - The outdoor unit is filled with refrigerant.
 - When connecting or disconnecting piping to or from the unit, be sure to use two spanners and two torque wrenches. (Refer to Fig. 4)

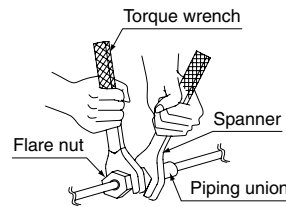


Fig. 4

- Refer to Table 2 for the processing dimensions of the flare.
- Use the flare nut provided with the unit.
- **Apply ether oil or ester oil only to inner side of the flare** and screw in the flare nut three to four turns first by hand at the time of connecting the flare nut. (Refer to Fig. 5)

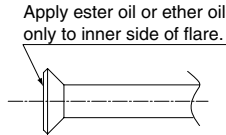


Fig. 5

- Refer to Table 2 for the corresponding tightening torque.

Table 2

Pipe size	Tightening torque	Flare dimensions A (mm)	Flare shape
φ 6.4	14.2 – 17.2N·m	8.7 – 9.1	
φ 9.5	32.7 – 39.9N·m	12.8 – 13.2	
φ 12.7	49.5 – 60.3N·m	16.2 – 16.6	
φ 15.9	61.8 – 75.4N·m	19.3 – 19.7	

CAUTION

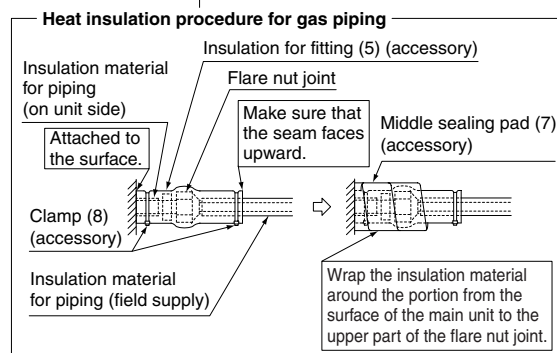
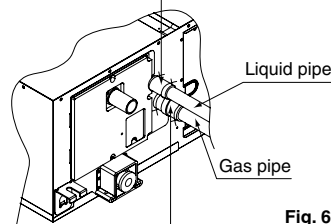
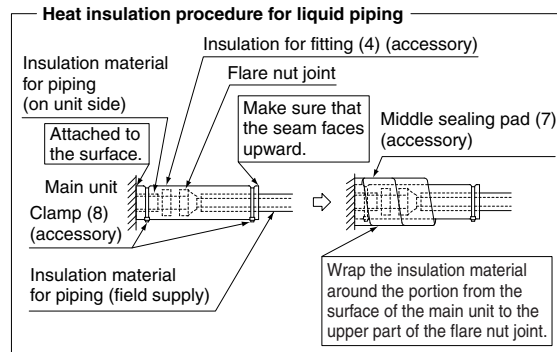
- **Do not excessively tighten the flare nut.**
Doing so will break the flare nut and refrigerant leakage may result.
- **Make sure that all parts around the flare are free of oil.**
The drain pan and the resin part may be deteriorated if oil is attached.
- If no torque wrenches are available, refer to Table 3 as a standard.
When the flare nut is tightened with the spanner, the tightening torque should increase suddenly. Tighten the flare nut further for the corresponding angle shown in Table 3.

Table 3

Pipe size	Further tightening angle	Recommended arm length of tool
φ 6.4	60 to 90 degrees	Approx. 150mm
φ 9.5	60 to 90 degrees	Approx. 200mm
φ 12.7	30 to 60 degrees	Approx. 250mm
φ 15.9	30 to 60 degrees	Approx. 300mm

- (2) On completion of installation work, **check that there is no gas leakage.**

- (3) Refer to the illustration on the right-hand side and be sure to perform heat insulation work on the piping joints after gas leakage checks. (Refer to Fig. 6)



- Use the insulation for fitting (4) and (5) provided to the liquid piping and gas piping, respectively, and conduct heat insulation work. (Tighten both edges of the insulation for fitting (4) and (5) for each joint with the clamp (8).)
- Make sure that the joint of the insulation for fitting (4) and (5) for the joint on the liquid piping and gas piping side faces upward.
- Wrap the middle sealing material (7) around the insulation for fitting (4) and (5) for the joint (flare nut part).

CAUTION

- **Be sure to perform the heat insulation of the local piping up to the piping joint.**
If the piping is exposed, dew condensation may result. Furthermore, a burn may be caused if a human body comes in contact with the piping.

- Perform nitrogen substituent or apply nitrogen into the refrigerant piping (see NOTE 1) in the case of refrigerant piping brazing (see NOTE 2). Then perform the flare connection of the indoor unit. (Refer to Fig. 7)

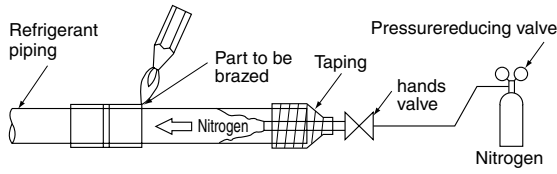


Fig. 7

CAUTION

- Do not use any antioxidant at the time of piping brazing. The piping may be clogged with a residual antioxidant and parts may malfunction.

NOTE

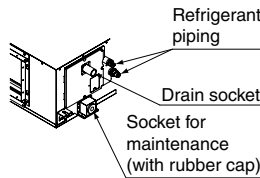
1. At the time of brazing, set the pressure of nitrogen to approximately 0.02 MPa (close to the pressure of a breeze coming in contact with the cheek) with a decompression valve.
 2. Do not use flux at the time of brazing and connecting the refrigerant piping. Use a copper phosphorus brazing alloy (BCuP-2: JIS Z 3264/BCu 93P-710/795: ISO3677), which does not require flux, for brazing. (Flux has a bad influence on the refrigerant piping. Chlorine-based flux will cause piping corrosion. Furthermore, if it contains fluorine, the flux will deteriorate refrigerant oil.)
- As for the branching of the refrigerant piping or refrigerant, refer to the installation manual provided with the outdoor unit.

7. DRAIN PIPING WORK

(1) Conduct drain piping work.

Check that the piping ensures proper draining.

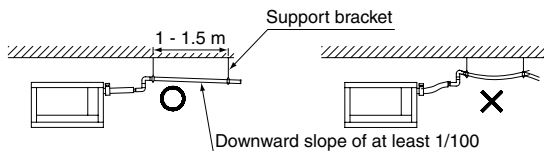
- Make sure that the diameter of the piping excluding the rising part is the same as or larger than the diameter of the connecting pipe (vinyl chloride pipe with an outer diameter of 32 mm and a nominal inner diameter of 25 mm).
- Make sure that the piping is short enough with a downward slope of at least 1/100 and that there is no air bank formed. No drain trap is required.



CAUTION

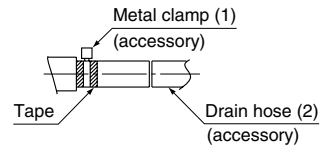
- The drain piping will be clogged with water and water leakage may result if the water is accumulated in the drain piping.

- Conduct drain-up piping work if the gradient is insufficient.
- Attach a support bracket at 1 to 1.5 m intervals for the prevention of piping deflection.



- Be sure to use the drain hose (2) and metal clamp (1). Insert the drain hose (2) deep into the base of the drain socket, and securely fasten the metal clamp (1) within the taped part on the insertion front end of the hose.

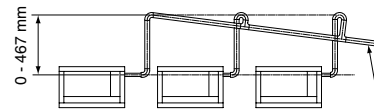
Be sure to fasten the screw of the metal clamp (1) until the margin of the screw thread decreases to 4 mm or less.



NOTE

Be sure to follow the instructions as below.

- Do not connect the drain piping directly to a sewer that smells of ammonia. The ammonia in the sewer may reach through the drain piping and corrode the heat exchanger of the indoor unit.
- Do not bend or twist the provided drain hose (2) in order not to impose excessive force on the hose. (Doing so may result in water leakage.)
- Take the procedure shown in the following illustration to perform concentrated drain piping.

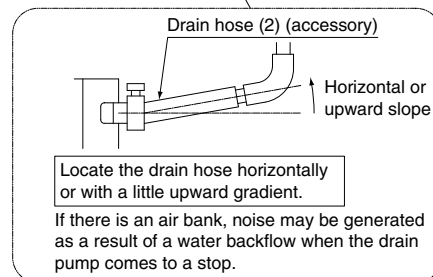
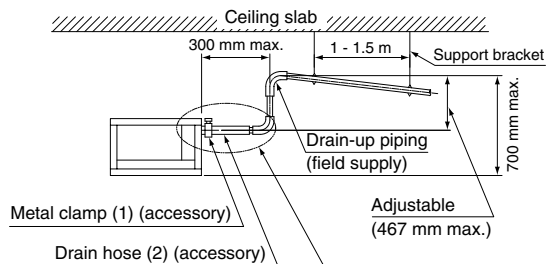


Concentrated drain piping

Maintain a downward slope of at least 1/100 so that no air bank will be formed.

The drain piping will be clogged with water and water leakage may result if the water is accumulated in the drain piping.

- Select the diameter of the concentrated drain piping to suit the capacity of equipment connecting to the concentrated drain piping (see the equipment design sheet).



- (2) Check the smooth draining of the piping on completion of the installation of the piping.

[Before electrical work]

⚠ CAUTION

- A licensed electrical engineering technician must conduct electrical wiring work (including grounding work).
- If no licensed electrical engineering technician is available, take steps 3 and 4 after the test operation of the air conditioner is finished.

1. Remove the control box lid, and connect the single-phase electric wires to terminals L and N of the terminal block and the ground wire to the ground terminal. Perform wiring according to 10-1 CONNECTING POWER SUPPLY, GROUND, REMOTE CONTROLLER, AND TRANSMISSION WIRING in 10. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER.

⚠ CAUTION

- In order not to impose tension on the wire connections, perform clamping securely with the provided clamp (8) specified in 3 in 10-1 CONNECTING POWER SUPPLY, GROUND, REMOTE CONTROLLER, AND TRANSMISSION WIRING.

2. Check that the control box lid is closed before turning the air conditioner ON.
3. Provide approximately one liter of water gradually into the drain pan through the water inlet on the bottom of the drain socket or the outlet. Make sure that the water is not spilled onto the drain pump.
4. The drain pump will operate with the power turned ON. Check that the pump drains water smoothly. (The drain pump will stop automatically in 10 minutes.)
The drainage can be checked with the water level change in the drain pan through the water inlet.

⚠ CAUTION

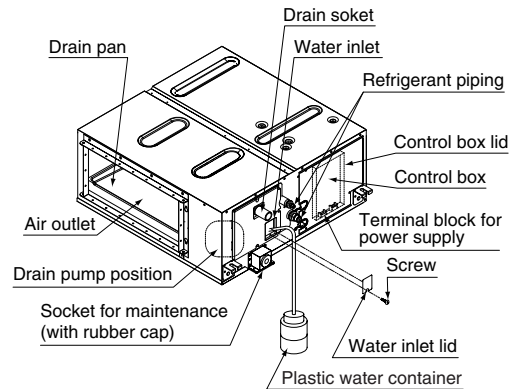
- Do not touch the drain pump. Otherwise, an electric shock may be received.
- Do not impose external force on the float switch. Otherwise, a failure may result.

5. On completion of the drainage check, shut off the power supply and disconnect the power supply line.
6. Put the control box lid to the original position.

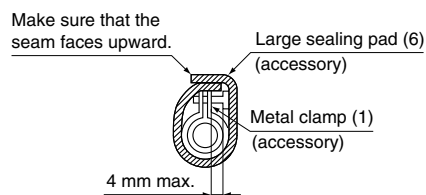
[After electrical work]

- After completion of 8. DUCT WORK provide approximately one liter of water gradually into the drain pan through the water inlet on the bottom of the drain socket, and check that the water is drained while the air conditioner is in cooling operation according to 11. FIELD SETTING and 12. TEST OPERATION. Make sure that the water is not spilled onto the electric parts of the drain pump and others.

- (3) Be sure to conduct heat insulation work on the following portions, or otherwise water leakage may occur as a result of dew condensation.
 - Drain piping indoors
 - Drain socket



- On completion of the drainage check, refer to the following illustration, and use the provided large sealing pad (6) and heat insulate the metal clamp (1) and drain hose (2).



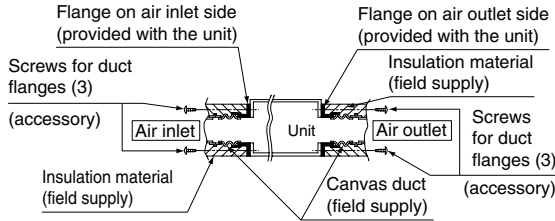
8. DUCT WORK

Pay the utmost attention to the following items and conduct the ductwork.

- Check that the duct will not be in excess of the setting range of external static pressure for the unit. (Refer to the technical datasheet for the setting range.)
- Attach a canvas duct each to the air outlet and air inlet so that the vibration of the equipment will not be transmitted to the duct or ceiling. Use a sound-absorbing material (insulation material) for the lining of the duct and apply vibration insulation rubber to the hanging bolts.
- At the time of duct welding, perform the curing of the duct so that the sputter will not come in contact with the drain pan for the filter.
- If the metal duct pass through a metal lath, wire lath, or metal plate of a wooden structure, separate the duct and wall electrically.
- Be sure to heat insulate the duct for the prevention of dew condensation. (Material: Glass wool or styrene foam; Thickness: 25 mm)
- Be sure to attach the field supply air filter to the air inlet of the unit or field supply inlet in the air passage on the air suction side. (Be sure to select an air filter with a duct collection efficiency of 50 weight percent.)
- Explain the operation and washing methods of the locally procured components (i.e., the air filter, air inlet grille, and air outlet grille) to the customer.
- Locate the air outlet grille on the indoor side for the prevention of drafts in a position where indirect contact with people.
- The air conditioner incorporates a function to adjust the fan to rated speed automatically. (11. FIELD SETTING)
Therefore, do not use booster fans midway in the duct.

Connection method of ducts on air inlet and outlet sides.

- Connect the field supply duct in alignment with the inner side of the flange.
- Connect the flange and unit with the flange connection screw (3).
- Wrap aluminum tape around the flange and duct joint in order to prevent air leakage.



CAUTION

Connect the flange and unit with the flange connection screw (3) regardless of whether the duct is connected to the air inlet side.

9. ELECTRIC WIRING WORK

9-1 GENERAL INSTRUCTIONS

- All 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" attached to the control 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 and BS unit are properly matched. If wiring and piping between the outdoor unit and an indoor unit are mismatched, the system may cause a malfunction.
- A circuit breaker 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 wiring connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Be sure to ground the air conditioner.
- 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 storms.

9-2 ELECTRICAL CHARACTERISTICS

Model	Units			Power supply		Fan motor	
	Hz	Volts	Voltage range	MCA	MFA	kW	FLA
FXMQ20PVE	50	220-240	Max. 264 Min. 198	0.6	16	0.09	0.5
FXMQ25PVE				0.6	16	0.09	0.5
FXMQ32PVE				0.6	16	0.09	0.5
FXMQ40PVE				1.4	16	0.140	1.1
FXMQ50PVE				1.6	16	0.350	1.3
FXMQ63PVE				1.8	16	0.350	1.4
FXMQ80PVE				2.3	16	0.350	1.8
FXMQ100PVE				2.9	16	0.350	2.3
FXMQ125PVE				3.4	16	0.350	2.7
FXMQ20PVE				60	220	Max. 242 Min. 198	0.6
FXMQ25PVE	0.6	16	0.09				0.5
FXMQ32PVE	0.6	16	0.09				0.5
FXMQ40PVE	1.4	16	0.140				1.1
FXMQ50PVE	1.6	16	0.350				1.3
FXMQ63PVE	1.8	16	0.350				1.4
FXMQ80PVE	2.3	16	0.350				1.8
FXMQ100PVE	2.9	16	0.350				2.3
FXMQ125PVE	3.4	16	0.350				2.7

MCA: Min. Circuit Amps (A); MFA: Max. Fuse Amps (A)
kW: Fan Motor Rated Output (kW); FLA: Full Load Amps (A)

9-3 SPECIFICATIONS FOR FIELD SUPPLIED FUSES AND WIRE

Model	Power supply wiring			Remote controller wiring Transmission wiring	
	Field fuses 	Wire	Size	Wire	Size
FXMQ20PVE	16A	H05VV-U3G	Size must comply with local codes.	Sheathed wire (2 wire)	0.75 - 1.25 mm ²
FXMQ25PVE					
FXMQ32PVE					
FXMQ40PVE					
FXMQ50PVE					
FXMQ63PVE					
FXMQ80PVE					
FXMQ100PVE					
FXMQ125PVE					

Allowable length of transmission wirings and remote controller wiring are as follows.

- (1) Outdoor unit – Indoor unit:
Max. 1000 m (Total wiring length: 2000 m)
- (2) Indoor unit – Remote controller:
Max. 500 m

NOTE

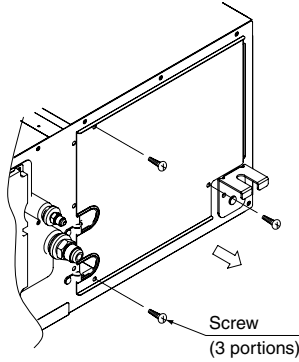
1. Shows only in case of protected pipes. Use H07RN-F in case of no protection.
2. Vinyl cord with sheath or cable (Insulated thickness : 1mm or more)

10. WIRING EXAMPLE AND HOW TO SET THE REMOTE CONTROLLER

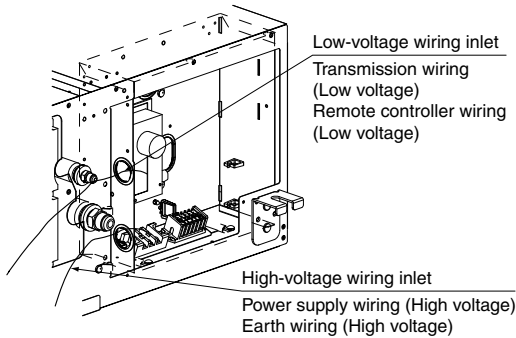
10-1 CONNECTING POWER SUPPLY, GROUND, REMOTE CONTROLLER, AND TRANSMISSION WIRING

(Remove the control box lid as shown below and connect each wire.)

(1) Remove the control box lid.



(2) Lay the wires in the control box through the wire inlet on the side of the control box.



CAUTION

- Do not lay the remote controller wiring or transmission wiring along with the power supply wiring or other electric wiring in the same route. Separate the remote controller wiring and transmission wiring at least 50 mm from the power supply wiring or other electric wiring, or otherwise malfunctions or failures may be caused by external electric noise that may interfere with the remote controller wiring and transmission wiring.
- For the installation and wiring of the remote controller, refer to the remote controller installation manual provided with the remote controller.
- For power supply wiring, refer to the wiring diagram as well.
- Be sure to connect the remote controller wiring and transmission wiring correctly to the right terminal block.

(3) Follow the instructions below, and lay the wires in the control box.

Fix the wires with clamp (8) to the wire fixing bracket provided to the control box.

Transmission wiring (Low voltage)
Remote controller wiring (Low voltage)

Insert the cord into the wire clips provided with the control box.

Power supply wiring (High voltage)
Earth wiring (High voltage)

Ground L N
Connection method of power supply terminals (X1M)

Twist and fix the upper part so that the wires will not drop out.
Fix the cord with the clamp (8) to the wire fixing bracket provided to the control box.

PROHIBITED
Never connect the power supply wiring.

Transmission wiring (No polarity)
Remote controller wiring (No polarity)

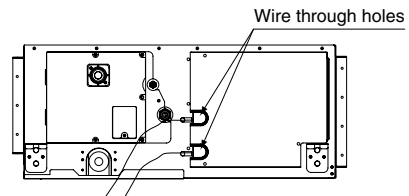
Connection method of remote controller terminals (X2M)
• If stranded wires are used, do not solder the front end of the wires.

WARNING

Trim and lay the wiring neatly and attach the control box lid securely.

An electric shock or fire may result if the control box lid catches any wiring or the wires push the lid.

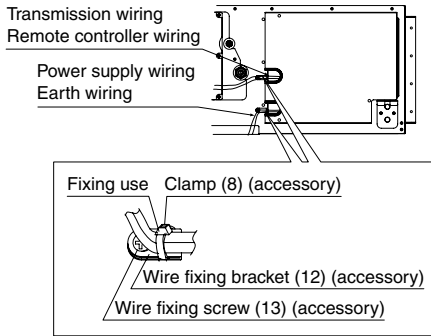
(4) Put the control box lid, and wrap the wire sealing material (Small) (10) around the wires so as to block the wire through holes.



CAUTION

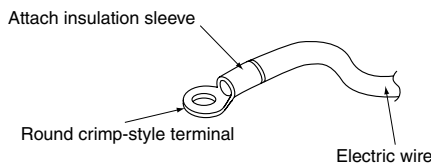
- After all the wiring connections are done, fill in any gaps in the through holes with putty or insulation (procured locally) to prevent small animals and insects from entering the unit from outside. (If any do get in, they could cause short circuits in the control box.)

- (5) Mount the provided wire fixing bracket (12) with the wire fixing screw (13). Fix each wire with the provided clamp (8).

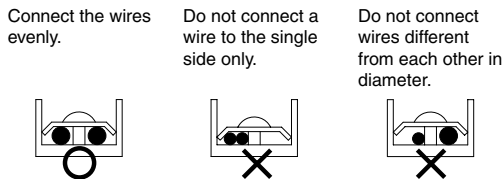


[Precautions for Power Supply Wiring]

- Connect round crimp-style terminals provided with insulation sleeves to the terminal block for power supply.



Be sure to follow the instructions provided below if the specified terminals cannot be used. **Otherwise, abnormal heat may be generated as a result of the loosening of the wires.**



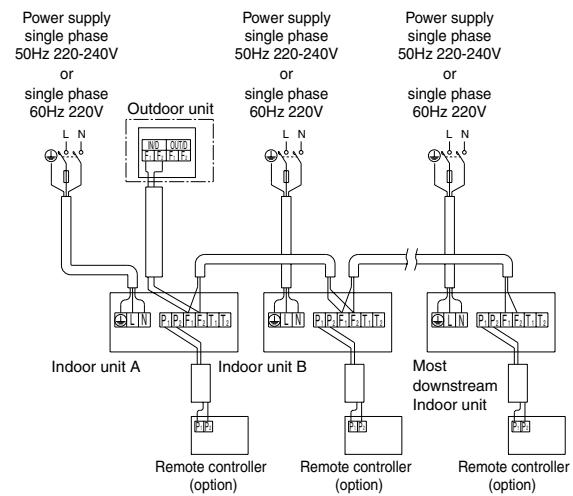
- If stranded wires are used, do not solder the front end of the wires.
- Connect proper wires securely and fix the wires so that external force will not be imposed on the terminals.
- Use an appropriate screwdriver to tighten the terminal screws. The screw heads may be damaged if the screwdriver is too small and the terminal screws will not be tightened properly.
- Do not tighten the terminal screws excessively, or otherwise the screw heads may be damaged.
- Refer to the table below for the required tightening torque values of the terminal screws.

	Tightening torque (N·m)
Terminal block for remote controller and transmission wires	0.80 - 0.96
Terminal block for power supply	1.18 - 1.44

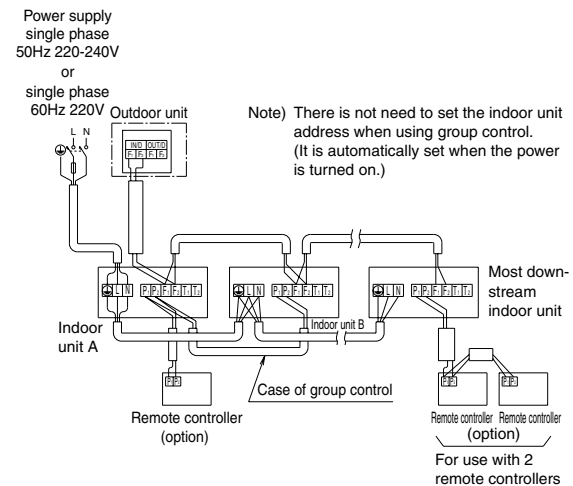
10-2 WIRING EXAMPLE

⚠ WARNING
Install an earth leakage breaker.
The installation of an earth leakage breaker is imperative for the prevention of electric shocks and fire accidents.

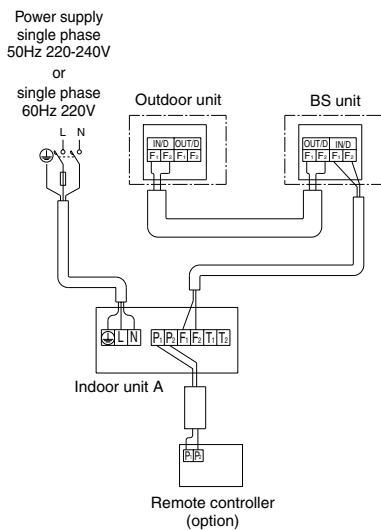
No. 1 system: When using 1 remote controller for 1 indoor unit



No. 2 system: For group control or use with 2 remote controllers



No. 3 system: When including BS unit



[PRECAUTIONS]

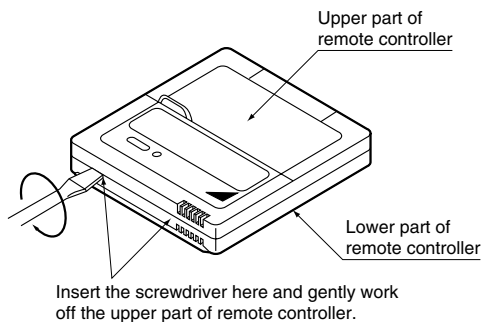
1. If no earth leakage breaker is required, install a breaker or load switch with a fuse for the wiring. If an earth leakage breaker is required, make sure that the earth leakage breaker is designed to protect the air conditioner from ground faults, overloads, and short-circuiting.
2. The remote controller wiring (P1 and P2) and transmission wiring (F1 and F2) have no polarity.

10-3 CONTROL BY 2 REMOTE CONTROLLERS (Controlling 1 indoor unit by 2 remote controllers)

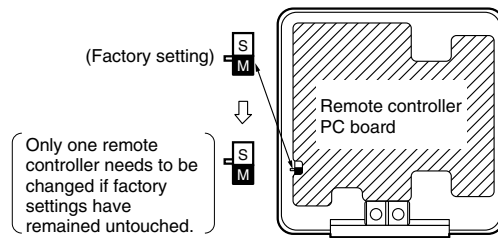
- Set one of the remote controllers to main and the other to sub in the case of remote control with two remote controllers.

Switching Main/Sub

- (1) Insert a ⊖ screwdriver into the clearance between the grooves of the lower casing and the upper casing to remove the upper casing. (2 grooves) (The remote controller PCB is attached to the upper casing.)

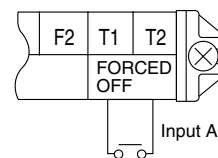


- (2) Set the main/sub switch on one of the remote controller PCBs to sub. (Keep the switch of the other remote controller PCB set to main.)



10-4 COMPUTERISED CONTROL (FORCED OFF AND ON/OFF OPERATION)

- (1) Wire specifications and how to perform wiring
 - Connect the input from outside to terminals T1 and T2 of the terminal block for remote controller.



Wire specification	Sheathed vinyl cord or cable (2 wire)
Gauge	0.75 - 1.25 mm ²
Length	Max. 100 m
External terminal	Contact that can ensure the minimum applicable load of 15 V DC, 10 mA.

- (2) Actuation
 - The following table explains FORCED OFF and ON/OFF OPERATIONS in response to Input A.

FORCED OFF	ON/OFF OPERATION
Input "ON" stops operation (impossible by remote controllers.)	Input OFF → ON turns ON unit.
Input OFF enables control by remote controller.	Input ON → OFF turns OFF unit.

- (3) How to select FORCED OFF and ON/OFF OPERATION
 - Turn the power on and then use the remote controller to select operation.

10-5 CENTRALIZED CONTROL

- For centralized control, it is necessary to designate the group No. For details, refer to the manual of each optional controllers for centralized control.

11. FIELD SETTING

NOTE

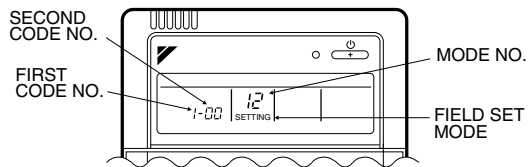
- Before the test operation of the outdoor unit as explained in **12. TEST OPERATION**, be sure to make the following field settings as explained in **11. FIELD SETTING**.

Make sure the control box lids are closed on the indoor and outdoor units.

Field setting must be made from the remote controller in accordance with the installation condition.

- Setting can be made by changing the "MODE NO.", "FIRST CODE NO.", and "SECOND CODE NO.".

- For setting and operation, refer to the "FIELD SETTING" in the installation manual of the remote controller.



- Set the remote controller to the "FIELD SET MODE". For details, refer to the "HOW TO SET IN THE FIELD", in the remote controller manual.
- When in the "FIELD SET MODE", select "MODE NO. 12", then set the "FIRST CODE NO." to "1". Then set "SECOND CODE NO." to "01" for FORCED OFF and "02" for ON/OFF OPERATION. (FORCED OFF at factory set)

With Wireless Remote Controller Used

Set the wireless remote controller address before using the wireless remote controller.

For the setting method of the address, refer to the operation manual provided with the wireless remote controller.

NOTE

- A "MODE NO." is set on a group basis. To make a mode setting on a room unit basis or check the setting made, however, set the corresponding mode number in the parentheses.

1. Settings for Optional Accessories

- In the case of connecting optional accessories, refer to the operation manuals provided with the optional accessories and make necessary settings.

2. External Static Pressure Settings

Make settings in either method (a) or method (b) as explained below.

- (a) Use the airflow auto adjustment function to make settings.

Airflow auto adjustment: The volume of blow-off air is automatically adjusted to the rated quantity.

- (1) Check that power supply wiring to the air conditioner is completed along with duct installation. If a closing damper is installed in the air-conditioning system, make sure that the closing damper is opened. Furthermore, check that the air filter as a field supply is attached to the air passage on the suction side.

- (2) If there are a number of air outlets and inlets, adjust the throttles so that the airflow rate of each air outlet and inlet will coincide with the designed airflow rate. At that time, operate the air conditioner in "fan operation mode". To change the airflow rate, press and set the airflow adjustment button of the remote controller to HH, H, or L.

- (3) Make settings for airflow automatic adjustment. After setting the air conditioner to "fan operation mode", stop the air conditioner, go to "FIELD SET MODE", select "MODE NO. 21" (11 in the case of group settings), set the setting "FIRST CODE NO." to 7, and set the setting "SECOND CODE NO." to 03.

Return to normal mode after these settings, and press the ON/OFF OPERATION button. Then the operation lamp will be lit and the air conditioner will go into fan operation for airflow automatic adjustment. Do not adjust the throttles of the air outlets or inlets during automatic adjustment of the air conditioner. After the air conditioner runs approximately one to eight minutes, the air conditioner will finish airflow adjustment automatically, the operation lamp will be turned OFF, and the air conditioner will come to a stop.

Table 4

MODE NO.	FIRST CODE NO.	Setting contents
11 (21)	7	Airflow adjustment
SECOND CODE NO.		
01	02	03
OFF	Completion of airflow adjustment	Start of airflow adjustment

- (4) After the air conditioner stops operating, check with "MODE NO. 21" on an indoor unit basis that 02 is set for the "SECOND CODE NO." in Table 4. If the air conditioner does not stop operating automatically or the "SECOND CODE NO." is not 02, repeat steps from (3). If the outdoor unit is not turned ON, U4 or UH as explained in Table 8 will be displayed. This display is not problematic, because this function is set for the indoor unit. Continue setting the function. After setting this function, be sure to turn ON the outdoor unit before the test operation of the outdoor unit. If any other error is displayed, refer to Table 8 and the operation manual provided with the outdoor unit and check the defective point.

CAUTION

- If there is any change after airflow adjustment in the ventilation paths (e.g., the duct and air outlet), be sure to make airflow auto adjustment again.
- Consult your Daikin representative if there is any change in the ventilation paths (e.g., the duct and air outlet) after the test operation of the outdoor unit is finished or the air conditioner is moved to another place.

- (b) Select External Static Pressure with Remote Controller Check that 01 (OFF) is set for the "SECOND CODE NO." in "MODE NO. 21" for airflow adjustment on an indoor unit basis in Table 4. The "SECOND CODE NO." is set to 01 (OFF) at factory set. Change the "SECOND CODE NO." as shown in Table 5 according to the external static pressure of the duct to be connected.

- (1) The "SECOND CODE NO." is set to 07 (an external static pressure of 100 Pa) at factory set. (FXMQ40 · 50 · 63 · 80 · 100 · 125PVE)
The "SECOND CODE NO." is set to 02 (an external static pressure of 50 Pa) at factory set. (FXMQ20 · 25 · 32PVE)
*1 The FXMQ50 · 63 · 80 · 100 · 125PVE cannot be set to 30 Pa.
*2 The FXMQ40PVE cannot be set to 180 or 200 Pa.
*3 The FXMQ20 · 25 · 32PVE cannot be set to 110-200 Pa.

Table 5

External Static Pressure	MODE NO.	FIRST CODE NO.	SECOND CODE NO.
30Pa (*1)	13 (23)	06	01
50Pa			02
60Pa			03
70Pa			04
80Pa			05
90Pa			06
100Pa			07
110Pa (*3)			08
120Pa (*3)			09
130Pa (*3)			10
140Pa (*3)			11
150Pa (*3)			12
160Pa (*3)			13
180Pa (*2)(*3)			14
200Pa (*2)(*3)			15

⚠ CAUTION

Keep in mind that a shortage of airflow quantity or water leakage will result because the air conditioner will be operated outside the rated range of airflow quantity if the external static pressure is wrongly set.

3. Filter Sign Settings

- The remote controller is provided with an LCD that tells the time of air filter cleaning.
- If the air conditioner is used in places with excessive dust, change the "SECOND CODE NO." as shown in Table 6. The "SECOND CODE NO." is set to 01 (standard) at factory set.

Table 6

Dirt	Time for display	MODE NO.	FIRST CODE NO.	SECOND CODE NO.
Standard	Approximately 2500 hours	10 (20)	0	01
Excessive dust	Approximately 1250 hours			02
No display (*)			3	

* Select "No display" under conditions in which the cleaning display is not required, such as the time of regular maintenance.

12. TEST OPERATION


Refer to the installation manual of the outdoor unit.

- The operation lamp of the remote controller will flash when an malfunction occurs. Check the malfunction code on the liquid crystal display to identify the point of trouble. An explanation of malfunction codes and the corresponding trouble is provided in "CAUTION FOR SERVICING" of the outdoor unit. If any of the items in Table 8 are displayed, there may be a problem with the wiring or power, so check the wiring again.

Table 7

Remote controller display	Contents
"A8" lit	Error in power supply voltage to indoor unit.
"C1" lit	Fan driver PCB of indoor unit ↔ indoor control PCB transmission error.
"C6" lit	Improper combination of fan driver PCB of indoor unit or setting failure in control PCB type.
"U3" lit	Test operation of outdoor unit has not been finished.

Table 8

Remote control display	Content
"  is lit up	<ul style="list-style-type: none"> • There is a short circuit at the FORCED OFF terminals (T1, T2)
"U4" is lit up "UH" is lit up	<ul style="list-style-type: none"> • The power on the outdoor unit is off. • The outdoor unit has not been wired for power supply. • Incorrect wiring for the transmission wiring and / or FORCED OFF wiring.
No display	<ul style="list-style-type: none"> • The power on the indoor unit is off. • The indoor unit has not been wired for power supply. • Incorrect wiring for the remote controller wiring, the transmission wiring and / or the FORCED OFF wiring.

⚠ CAUTION

If interior finish work is continuing on completion of the test operation of the air conditioner, explain the customer not to operate the air conditioner until the interior finish work is completed for the protection of the air conditioner. Otherwise, substances that will be generated from interior finish work materials, such as paint and adhesive agents, may contaminate the air conditioner.

12. Accessories

Standard Accessories FXMQ20~125P

Name	Metal clamp (1)	Drain hose (2)	Screws for duct flanges (3)	Insulation for fitting	Sealing pad	Clamp (8)	Washer fixing plate (9)	Wire sealing material (10)								
Quantity	1 pc.	1 pc.	As described in table below	1 each	—	9 pcs.	4 pcs.	2 pcs.								
Shape			M5x16 <table border="1"> <tr> <td>20 • 25 • 32 type</td> <td>6</td> </tr> <tr> <td>40 type</td> <td>10</td> </tr> <tr> <td>50 • 63 • 80 type</td> <td>18</td> </tr> <tr> <td>100 • 125 type</td> <td>26</td> </tr> </table>	20 • 25 • 32 type	6	40 type	10	50 • 63 • 80 type	18	100 • 125 type	26	Thin for liquid pipe (4) Thick for gas pipe (5)	1 pc. Large (Dark gray) (6) 2 pcs. Middle (Dark gray) (7)			Small (Gray)
20 • 25 • 32 type	6															
40 type	10															
50 • 63 • 80 type	18															
100 • 125 type	26															

Name	Washer (11)	Wire fixing bracket (12)	Wire fixing screw (13)	(Other) • Operation manual • Installation manual
Quantity	8 pcs.	2 pcs.	2 pcs.	
Shape			M4x8 	

3PN06583-7L

Optional Accessories (For Unit)

Item	Type	FXMQ20PVE	FXMQ25PVE	FXMQ32PVE	FXMQ40P	FXMQ50P	FXMQ63P	FXMQ80P	FXMQ100P	FXMQ125P
	High efficiency filter	65%		KAF372AA36		KAF372AA56		KAF372AA80		KAF372AA160
90%			KAF373AA36		KAF373AA56		KAF373AA80		KAF373AA160	
Filter chamber			KDDF37AA36		KDDF37AA56		KDDF37AA80		KDDF37AA160	
Long life replacement filter			KAF371AA36		KAF371AA56		KAF371AA80		KAF371AA160	
Service panel			KTBJ25K36W		KTBJ25K56W		KTBJ25K80W		KTBJ25K160W	
			KTBJ25K36F		KTBJ25K56F		KTBJ25K80F		KTBJ25K160F	
			KTBJ25K36T		KTBJ25K56T		KTBJ25K80T		KTBJ25K160T	
Air discharge adapter			KDAJ25K36A		KDAJ25K56A		KDAJ25K71A		KDAJ25K140A	

3D060443B

Optional Accessories (For Controls) : Refer to P.645

KTBJ25K36-56-80-160W — Service Access Panel

KTBJ25K80W



Dimensions		Unit:mm	

Model	A	Ceiling opening
KTBJ25K36W(T)(F)	626	606 × 680
KTBJ25K56W(T)(F)	776	756 × 680
KTBJ25K80W(T)(F)	1,076	1,056 × 680
KTBJ25K160W(T)(F)	1,476	1,456 × 680

- The inspection hatch can be made to look nice with the service access panel.
- Thin 10 mm design for the exposed part.

Item	Model	KTBJ25K36W(T)(F)	KTBJ25K56W(T)(F)	KTBJ25K80W(T)(F)	KTBJ25K160W(T)(F)
Main applicable models		20~32 Class	40 · 50 Class	63 · 80 Class	100 · 125 Class
Color	W : White, T : Brown, F : Fresh white				
Accessories	Installation manual				
Mass (weight)	kg	6.0	6.5	9.0	10.7

Caution

- Ceiling joist and ceiling joist support required. (Locally procured.)

Installation

DAIKIN

AIR CONDITIONER

Directions for Mounting Access Panels

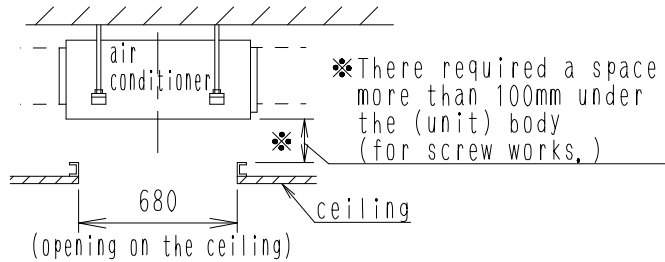
READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION.

- KEEP THIS MANUAL IN A HANDY PLACE FOR FUTURE REFERENCE.

Before Mounting the Panel

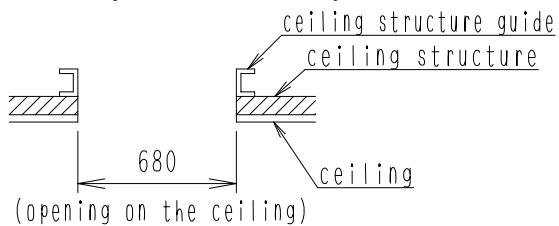
1. Prepare an opening on the ceiling.

Duct Type



kit No.	△
KTBJ25K36	606
KTBJ25K56 KTB25KA56	756
KTBJ25K80 KTB25KA80	1056
KTBJ25K160 KTB25KA160	1456

2. Mount the ceiling structure guide on the edge of the ceiling structure.



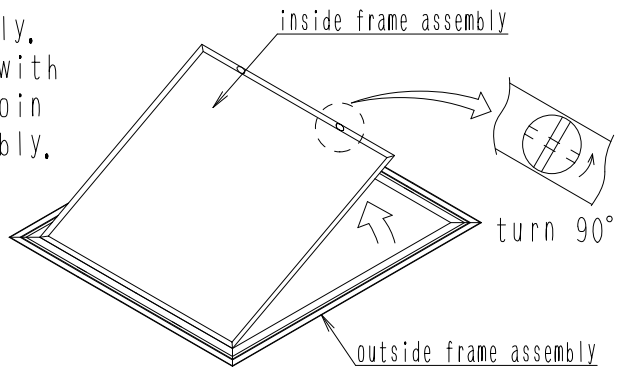
Service Works for Duct Type Models

Service works for maintenance shall be done (accessed) from the * space (the above).
Please prepare short-length screw drivers (100mm or less.)

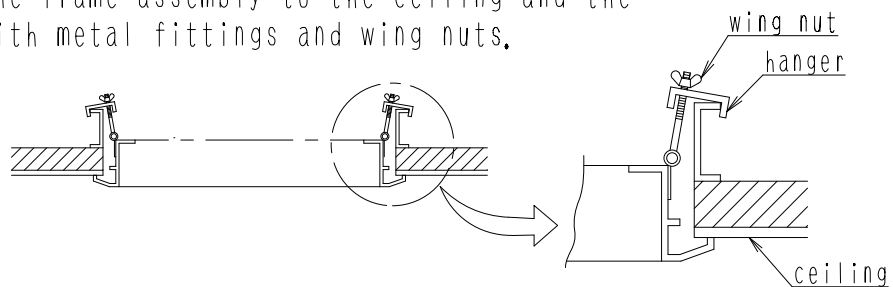
C : 3P225173A

Mounting the Panel

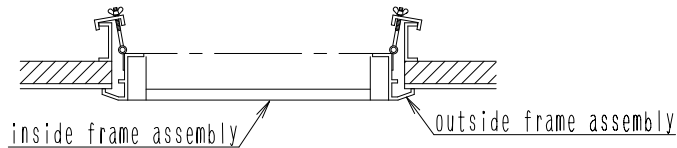
1. Remove the inside frame assembly.
 - Turn the lock 90° to the left with a flat-top screw driver or a coin to open the inside frame assembly.



2. Mount the outside frame assembly on the ceiling.
 - Fasten the frame assembly to the ceiling and the guide with metal fittings and wing nuts.



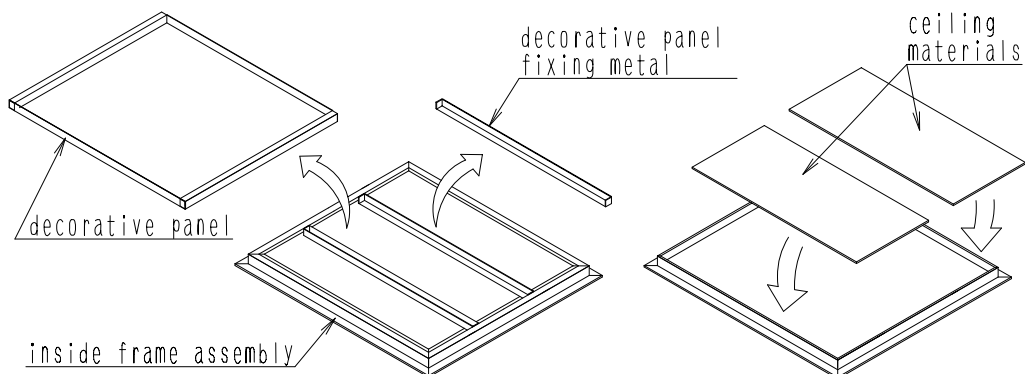
3. Mount the inside frame assembly to the fixed outside frame assembly.



Mounting of Ceiling Materials

Ceiling materials can be optionally mounted to the inside frame assembly. Mounting methods are as follows:-

- ① Remove the decorative panel fixing metal of the inside frame assembly.
 - ② Take out the decorative panel and mount the ceiling materials instead.
 - ③ Put back the fixing metal (①) to hold the ceiling materials.
- (Note) Decorative panel is not required when mounting ceiling materials.



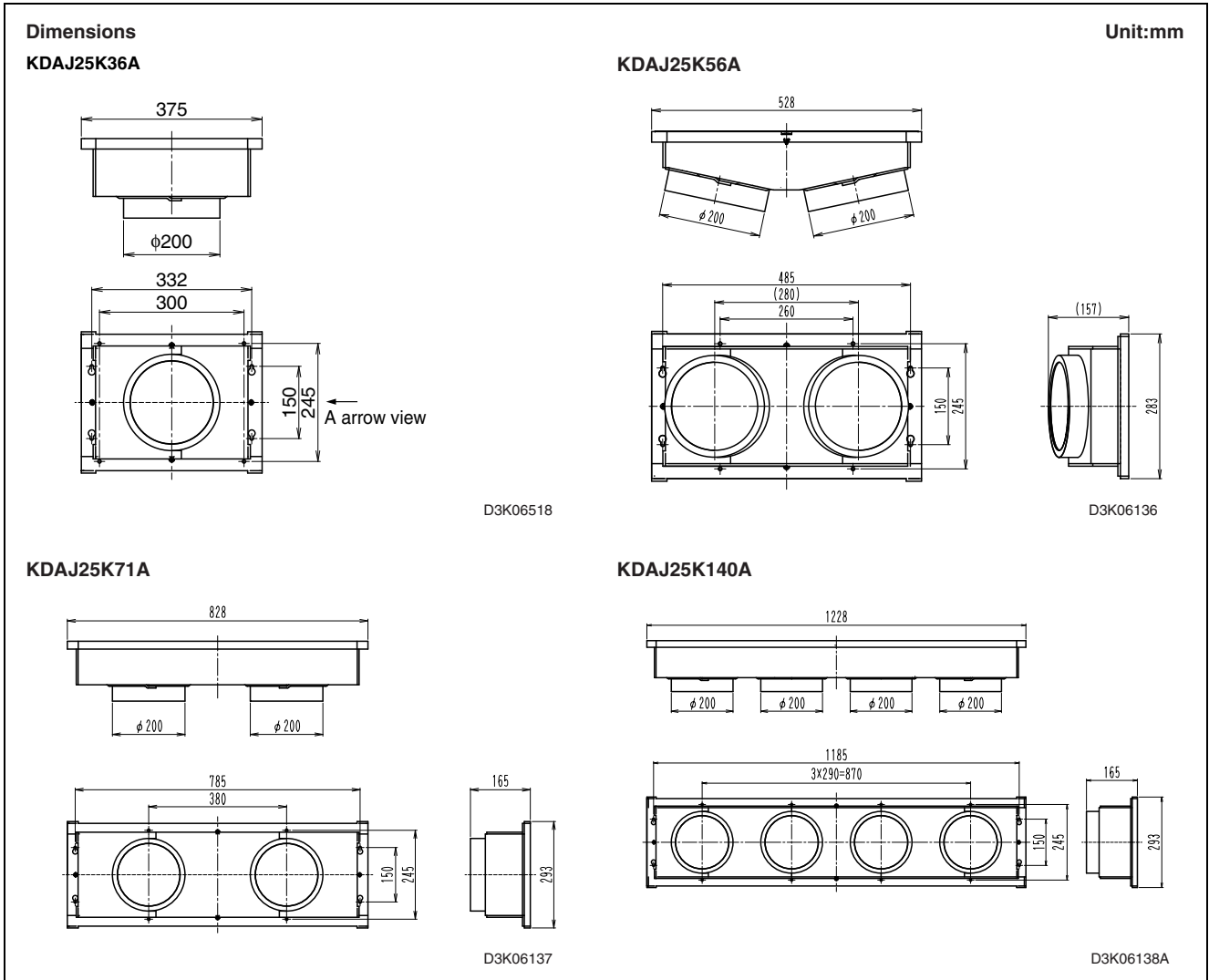
3P225173A

KDAJ25K36-56-71-140A — Air Discharge Adaptor

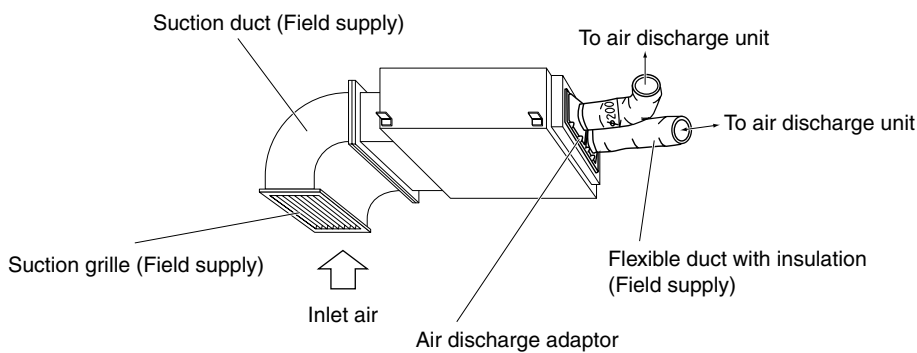
KDAJ25K71A



Model		KDAJ25K36A	KDAJ25K56A	KDAJ25K71A	KDAJ25K140A
Item					
Duct connection diameter		φ200×1 port	φ200×2 port		φ200×4 port
Material		Steel plate	Hot-dip zinc coated steel sheets, EPS, and insulation		
Accessories			Screws, Installation manual		
Mass (weight)	kg	1.1	1.5	2.5	3.5
Component parts		Air discharge adaptor. Screws (except KDAJ25K36A). Installation manual.			



Installation



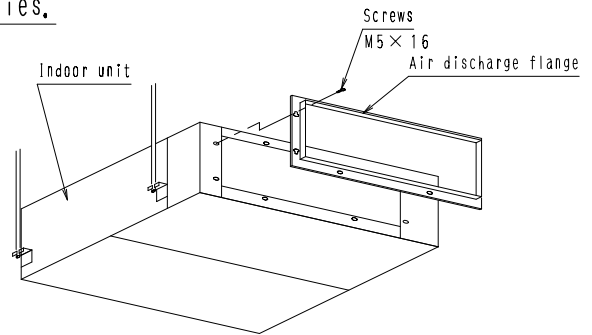
7

Installation

Air discharge adapter installation manual

1. This kit contains the following parts and accessories.

Name	Quantity			
	KDAJ25K36A	KDAJ25K56A	KDAJ25K71A	KDAJ25K140A
	KDAJ25KA36	KDAJ25KA56	KDAJ25KA71	KDAJ25KA140
	KDA25D32	KDA25D45	KDA25D63	KDA25D125
Air discharge adapter	1	1	1	1
Installation manual	1	1	1	1
Screws	8	8	8	12

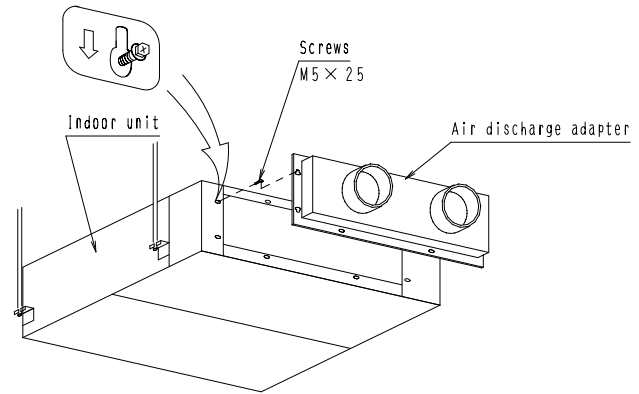


2. Required tools

Screwdriver ⊕

3. Operating procedures

1. Remove the air discharge flange from indoor unit.
2. Attach the air discharge adapter to the indoor unit.
 - ① Tighten two installation screws to the indoor unit. (Leave about 20mm of the thread exposed.)
 - ② Hang the air discharge adapter on the screws and then tighten all screws definitively.



4. Cautions for the installation

Fasten the screws tightly so as no gap between the indoor unit and the air discharge adapter.

3P012475C

KAF372AA36-56-80-160, KAF373AA36-56-80-160 — High efficiency filter

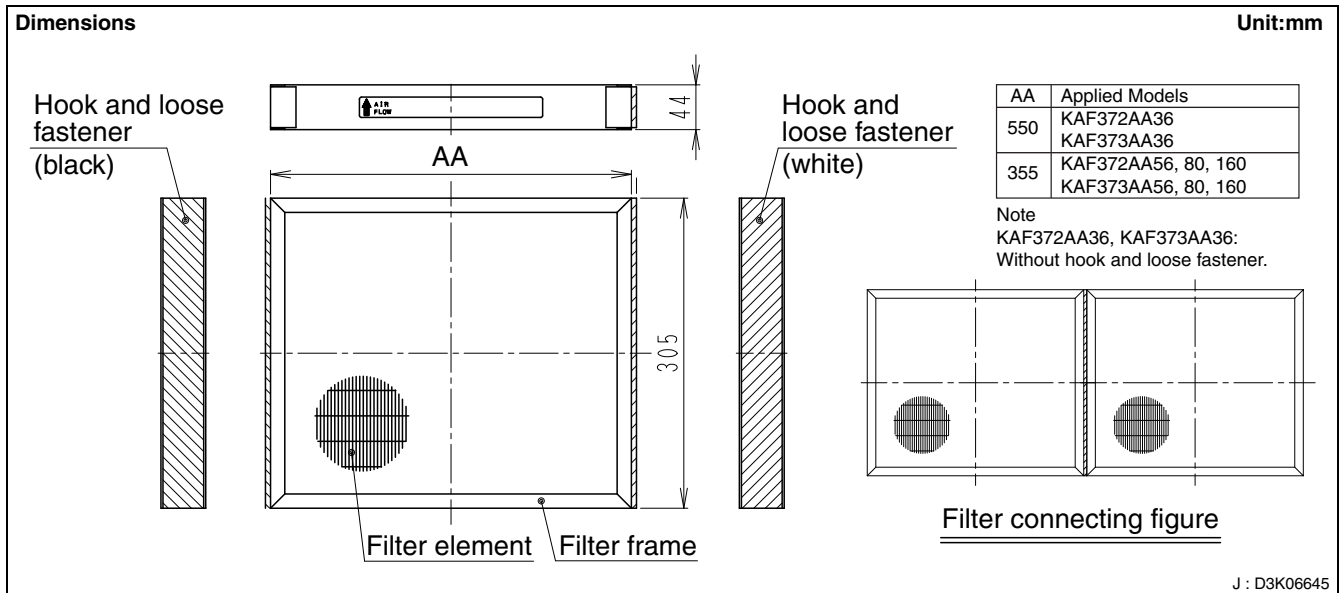


Item	Model	Model							
		KAF372 AA36	KAF373 AA36	KAF372 AA56	KAF373 AA56	KAF372 AA80	KAF373 AA80	KAF372 AA160	KAF373 AA160
Initial pressure loss	Pa	15 or less	21 or less	35 or less	54 or less	35 or less	54 or less	38 or less	56 or less
Final pressure loss	Pa	98 or less							
Average efficiency (colorimetric method)	%	65	90	65	90	65	90	65	90
Life *1	h	2,500	1,800	2,500	1,800	2,500	1,800	2,500	1,800
Filter element		Non-woven fabric of synthetic fiber							
Number of sheets included		1	1	2	2	3	3	4	4

Note:

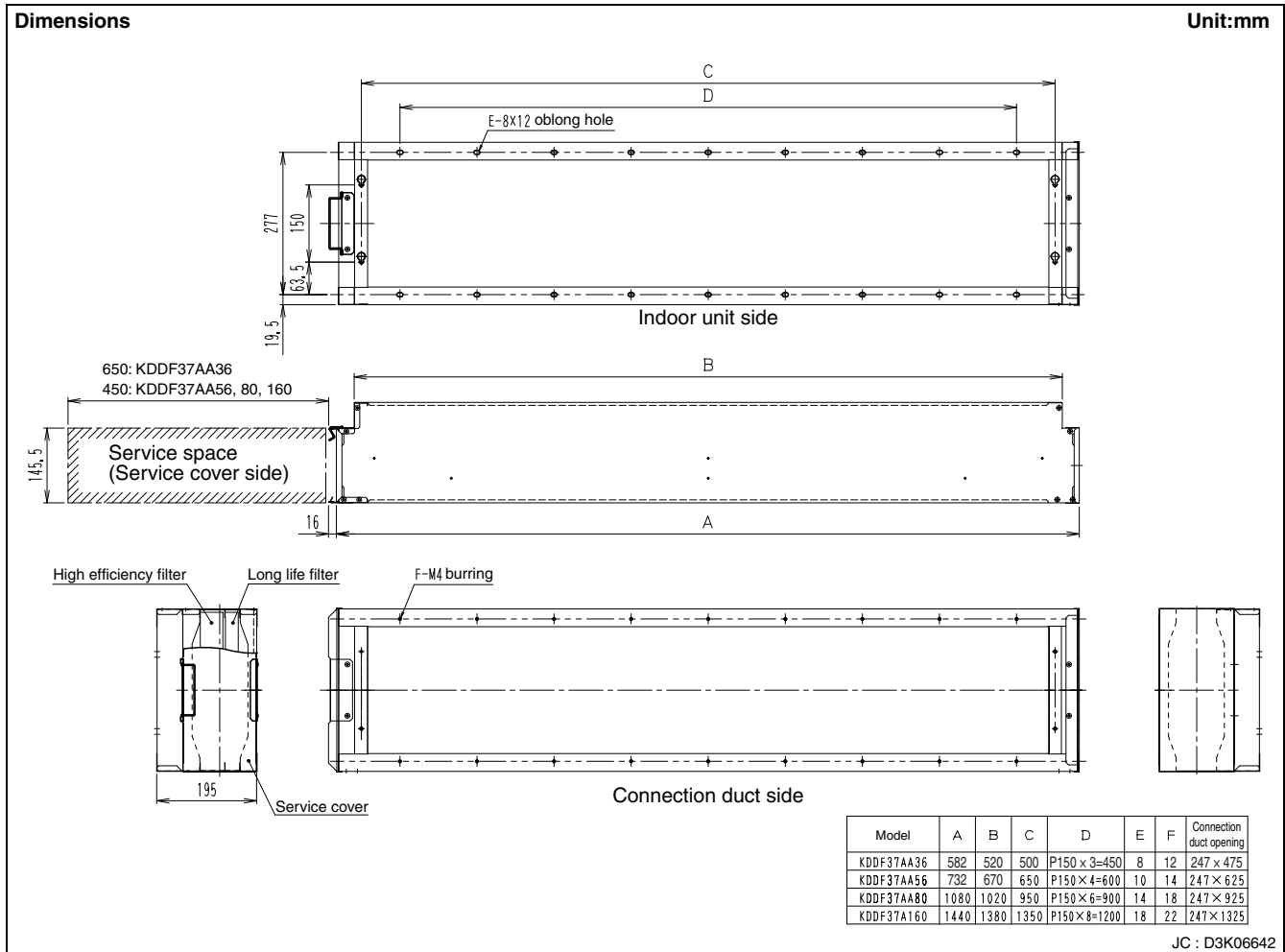
*1. Dust concentration 0.15 mg/m³

- Cannot be water-washed for reuse.
- The Filter Chamber (for high efficiency filter) (KDDF37AA36 · 56 · 80 · 160) is required when the high efficiency filter will be installed.

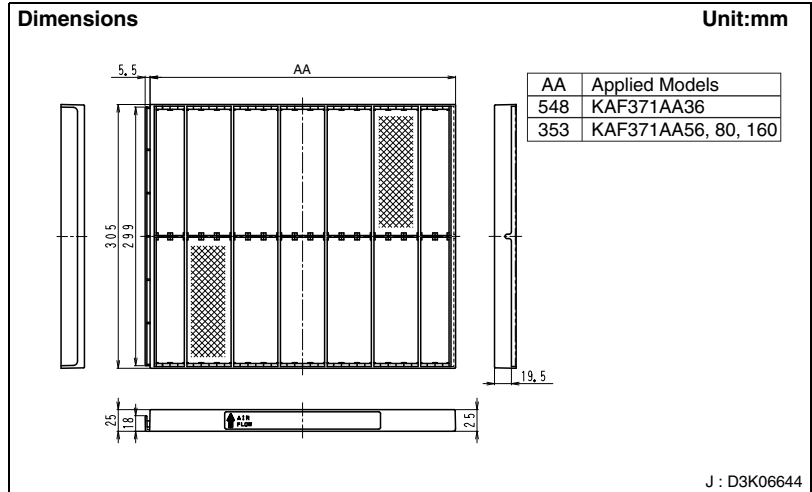


KDDF37AA36-56-80-160 — High efficiency filter chamber

Item		Model				
		KDDF37AA36	KDDF37AA56	KDDF37AA80	KDDF37AA160	
Inserted filter	High efficiency filter	65% (colorimetric method)	KAF372AA36	KAF372AA56	KAF372AA80	KAF372AA160
		90% (colorimetric method)	KAF373AA36	KAF373AA56	KAF373AA80	KAF373AA160
	Long life filter	KAF371AA36	KAF371AA56	KAF371AA80	KAF371AA160	
Accessories		Mounting screws, Installation manual				
Mass (weight)		kg	4.4	4.5	5.5	7.5



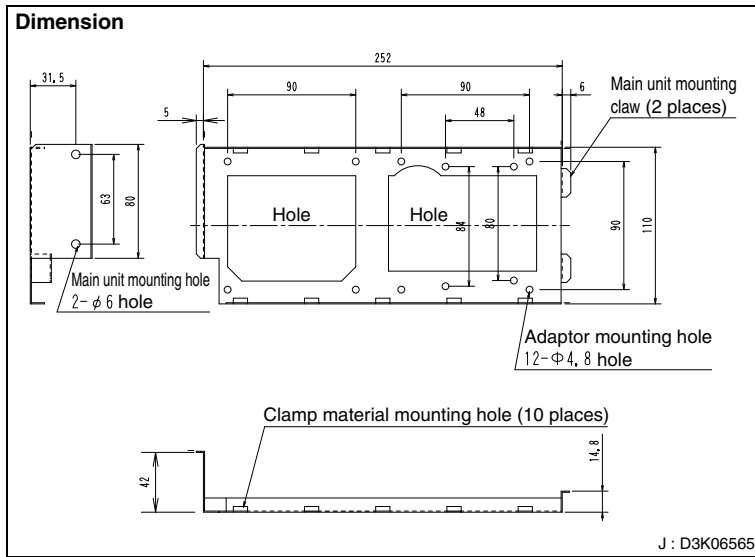
KAF371AA36·56·80·160 — Long life filter



- Can be water-washed. Can be reused.
- The Filter chamber (KDDF37AA36 · 56 · 80 · 160) is required when the long life filter will be installed.

Model		KAF371AA36	KAF371AA56	KAF371AA80	KAF371AA160
Initial pressure loss	Pa	3 or less	7 or less		8 or less
Final pressure loss	Pa	49 or less			
Average efficiency	%	50 (gravity method)			
Air flow rate / 1 sheet	m ³ /min	9.8			
Life	h	2,500 (dust concentration 0.15 mg/m ³)			
Filter element		Mildew-proof resin net (Polypropylene)			
Filter frame		Polystyrene			
Number of sheets included		1	2	3	4

KRP4A96 — Mounting plate for adaptor PC board



Item	Model	KRP4A96
Material		Steel sheet (t=0.8 coating)
Adaptor for wiring		KRP1C64 KRP4AA51
Accessories		Mounting screws (M4×8) : 2, Sealing material : 2, Clamp : 8, Installation manual



AIR CONDITIONER Mounting plate for adaptor PCB, Installation manual

READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION.
KEEP THIS MANUAL IN A HANDY PLACE FOR FUTURE REFERENCE.

2P226887-1

Caution

- This plate is mountable on the ceiling mounted duct type unit. After confirming the indoor unit model name, mount this plate on the unit listed in the table shown bottom.
- When mounting the plate, see also the indoor unit installation manual and the adaptor PCB (Printed Circuit Board) mounting instruction.
- Fixing method is not on the installation manual attached to the adapter PCB. Please follow directions on this sheet.

Kit name	Indoor unit model that party crowded is possible
KRP4A96	SPLIT FHP~ FBQ~
	VRV FXYP~ FXMQ~

*See the DAIKIN catalog for the details

Accessories

- Check if the following accessories are included with your kit,

<Precaution>

The accessories are required for the installation of the air conditioner. Be sure to keep them until the installation work is completed.

Name	Adaptor plate	Screw	Sealing material	Clamp	Installation manual
Quantity	1PC.	2PCS.	2PC.	8PCS.	1PC.
Shape					

<Caution>

- All 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" attached to the control box lid.
- All wiring must be performed by an authorized electrician.
- A circuit breaker capable of shutting down power supply to the entire system must be installed.

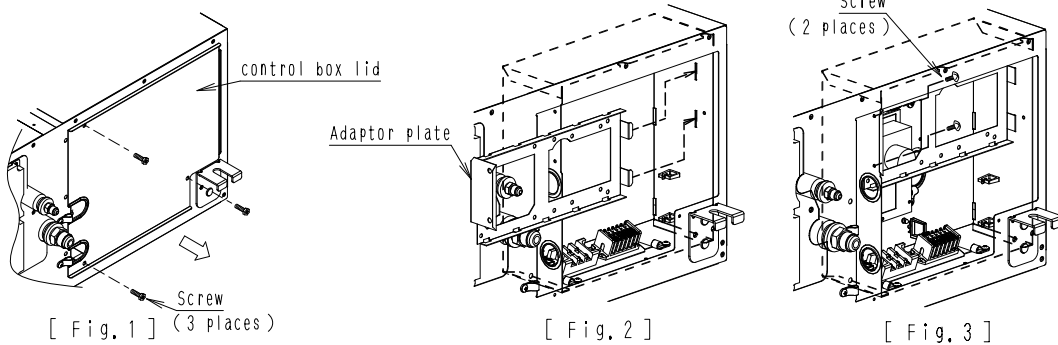
1 Mounting the adaptor plate

<Wiring to the indoor unit>

- 1 Remove the control box lid. [Fig.1]
- 2 Connect the wiring to the indoor unit. (The work is easier if the wiring is connected first.)
 - See the instruction attached to the adaptor PCB for the place where to connect the wires on the indoor unit.
 - Please see the connector location on (figure 1) on the **2 How to mount the adaptor PCB and handle the wiring**.

<Mounting the adaptor plate>

- 1 Putting the claw of the adaptor plate into the hole of the box. [Fig.2]
- 2 Fix the box with the attached fixing screws at two places. [Fig.3]



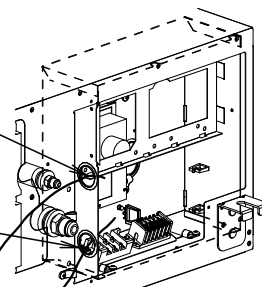
2 How to mount the adaptor PCB and handle the wiring

<How To Lead-in External Wires >

Lay the wires in the control box through the wire inlet on the side of the control box.

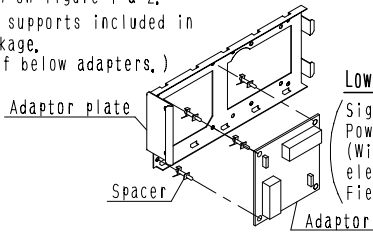
Low-voltage wiring inlet
Signal wiring,
Field wiring(low voltage)

High-voltage wiring inlet
Power supply wire,
Field wiring(high voltage)



<How to mount the adaptor PCB>

- ① Connect the wiring to the adaptor PCB.
(The work is easier if the wiring is connected to the PCB first.)
 - See the instruction attached to the adaptor PCB for where to connect the wiring.
- ② Mount adapter PCB onto the mounting plate (in the direction) as shown on figure 1 & 2.
 - Use PCB supports included in the package, (for any of below adapters.)



<Caution> If (adapter PCB is) mounted in a wrong direction, electric noise may cause malfunction of the system, or may influence upon other devices.

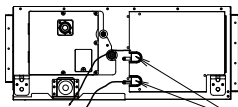
Adaptor PCB		Place where to mount
Adaptor for wiring	KRP1C13 KRP1C64	(Fig. 1)
Wiring adaptor for electrical appendices (*1)	KRP4A1 KRP4AA51 KRP2A1 KRP2A61	(Fig. 1)
External control adaptor for outdoor unit (*1)	DTA104A1 DTA104A61	(Fig. 2)

(*1) adapter cannot be mounted 2 or more together.

<How to handle the wiring>

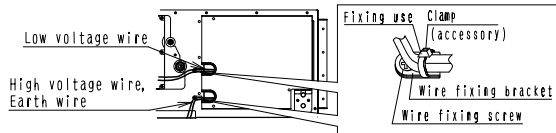
<Caution> Do not make high-voltage and low-voltage wires run in parallel. Electric noise may cause malfunction of the system, or may influence upon other devices.

- ① Fix the internal wirings.
Bind the wiring from the adaptor plate to the indoor unit control box according to the drawing shown on the right with the attached clamp. (Put the clamping materials through the corner holes to fix wires.)
 - Bind the the surplus wires and the other wiring together with the clamp.
- ② Put the control box lid, and wrap the wire sealing material around the wires so as to block the wire through holes.
 - Take precautions to prevent the wires from getting caught.
 - After all the wiring connections are done, fill in any gaps in the through holes with putty or insulation (procured locally) to prevent small animals and insects from entering the unit from outside. (If any do get in, they could cause short circuits in the control box.)



Warning
Trim and lay the wiring neatly and attach the control box lid securely. An electric shock or fire may result if the control box lid catches any wiring or the wires push up the lid.

- ③ Connect round crimp-style terminals provided with insulation sleeves to the terminal block for power supply.
 - See the instruction attached to the indoor unit.

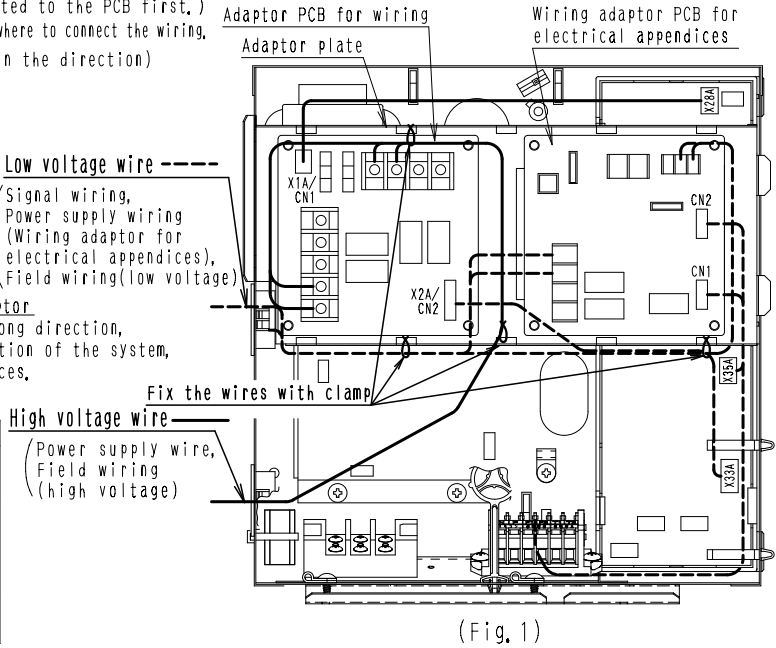


<Caution>

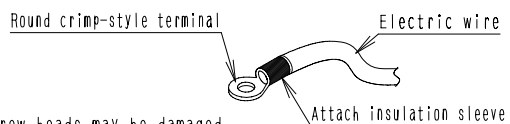
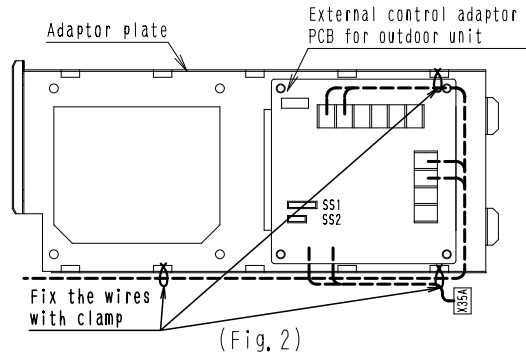
- Connect proper wires securely and fix the wires so that external force will not be imposed on the terminals.
- Use an appropriate screwdriver to tighten the terminal screws. The screw heads may be damaged if the screwdriver is too small and the terminal screws will not be tightened properly.
- Do not tighten the terminal screws excessively, or otherwise the screw heads may be damaged.
- Refer to the table below for the required tightening torque values of the terminal screws.

	Tightening torque (N·m)
Terminal block for remote controller and transmission wires	1.18 - 1.44
Terminal block for power supply, and wiring the units	1.18 - 1.44

<Adaptor for wiring, Wiring adaptor for electrical appendices>



<External control adaptor for outdoor unit>



FXMQ-MA

Ceiling Mounted Duct Type

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1. Features

Ceiling mounted duct type is newly added to the line-up of the indoor unit for VRV series, which gives you much more flexibility in designing of the air conditioning system to satisfy the needs of individual air-conditioning even in the broad area.

- High external static pressure allows extensive duct work for flexible applications.

Ceiling mounted duct type
FXMQ200MA FXMQ250MA



200 · 250 type

2. Specifications

Ceiling Mounted Duct Type

Model			FXMQ200MAVE	FXMQ250MAVE
*1 Cooling Capacity (19.5°CWB)		kcal/h	19,800	24,800
		Btu/h	78,500	98,300
		kW	23.0	28.8
*2 Cooling Capacity (19.0°CWB)		kW	22.4	28.0
Casing			Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (HxWxD)		mm	470x1,380x1,100	470x1,380x1,100
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm	3x26x2.0	3x26x2.0
	Face Area	m ²	0.68	0.68
Fan	Model		D13/4G2DA1x2	D13/4G2DA1x2
	Type		Sirocco Fan	Sirocco Fan
	Motor Output x Number of Units	W	380x2	380x2
	Air Flow Rate (H/L)	m ³ /min	58/50	72/62
		cfm	2,047/1,765	2,542/2,189
	External Static Pressure 50Hz	Pa	221-132 *3	270-191 *3
Drive		Direct Drive	Direct Drive	
Temperature Control			Microprocessor Thermostat for Cooling and Heating	Microprocessor Thermostat for Cooling and Heating
Sound Absorbing Thermal Insulation Material			Glass Fiber	Glass Fiber
Air Filter			*4	*4
Piping Connections	Liquid Pipes	mm	φ9.5 (Flare Connection)	φ9.5 (Flare Connection)
	Gas Pipes	mm	φ19.1(Brazing Connection)	φ22.2 (Brazing Connection)
	Drain Pipe	mm	PS1B	PS1B
Machine Weight (Mass)		kg	137	137
*6 Sound Level (H/L) (220V)		dBA	48/45	48/45
Safety Devices			Fuse. Thermal Protector for Fan Motor.	Fuse. Thermal Protector for Fan Motor.
Refrigerant Control			Electronic Expansion Valve	Electronic Expansion Valve
Connectable Outdoor Unit			R-410A PA Series	R-410A PA Series
Standard Accessories			Operation Manual. Installation Manual. Sealing Pads. Connection Pipes. Screws. Clamps.	Operation Manual. Installation Manual. Sealing Pads. Connection Pipes. Screws. Clamps.
Drawing No.			C : 3D038814A	

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
 *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
 *3 External static pressure is changeable to change over the connectors inside electrical box, this pressure means "High static pressure-Standard".
 *4 Air filter is not standard accessory, but please mount it in the duct system of the suction side. Select its colorimetric method (gravity method) 50% or more.
 5 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
 *6 Anechoic chamber conversion value, measured at a point 1.5 m downward from the unit center. These values are normally somewhat higher during actual operation as a result of ambient conditions.
 7 Refer to page 301 for Fan Motor Input.

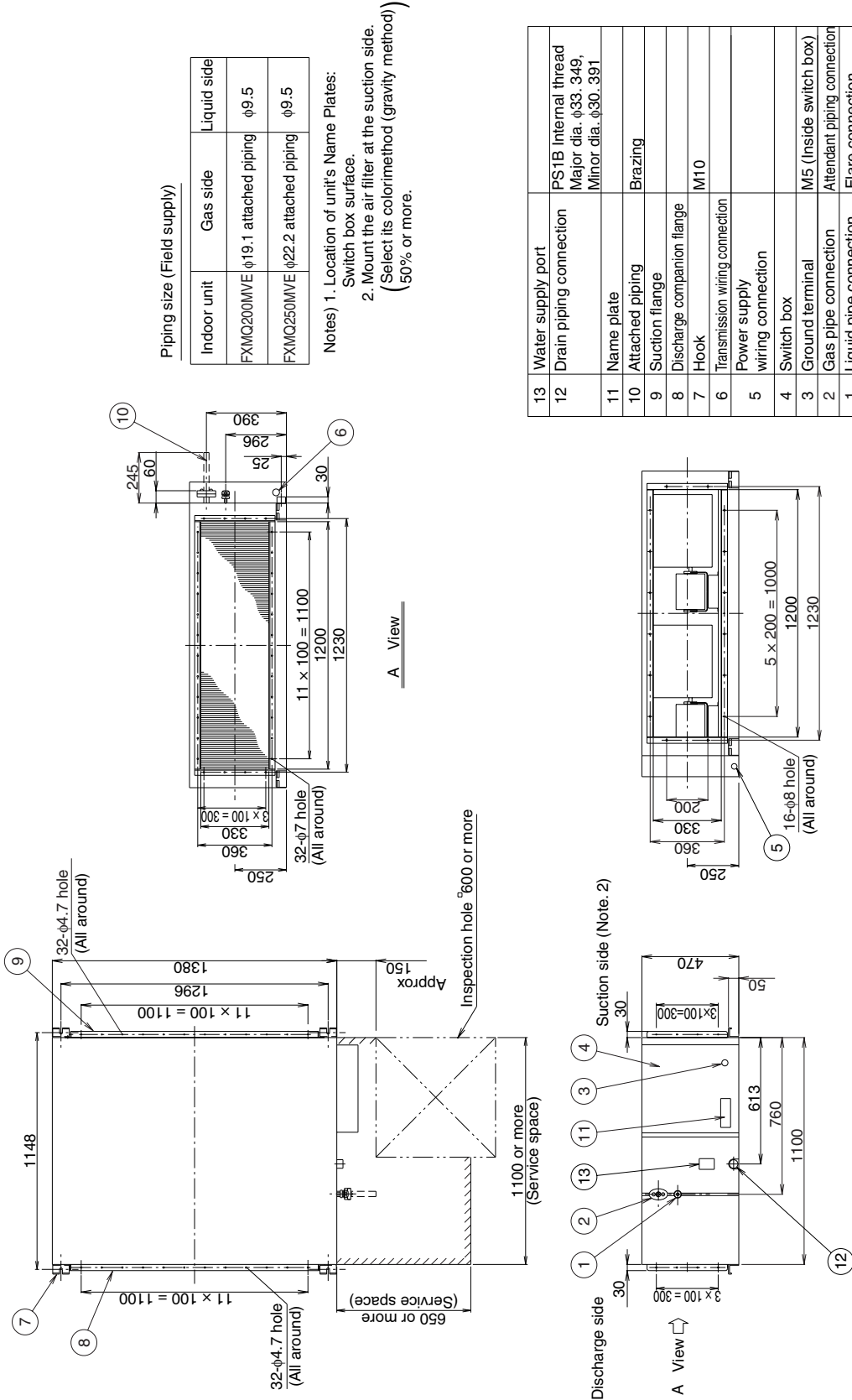
Conversion Formulae

kcal/h=kWx860
 Btu/h=kWx3412
 cfm=m³/minx35.3

3. Dimensions

FXMQ200MA
FXMQ250MA

Unit (mm)



Piping size (Field supply)

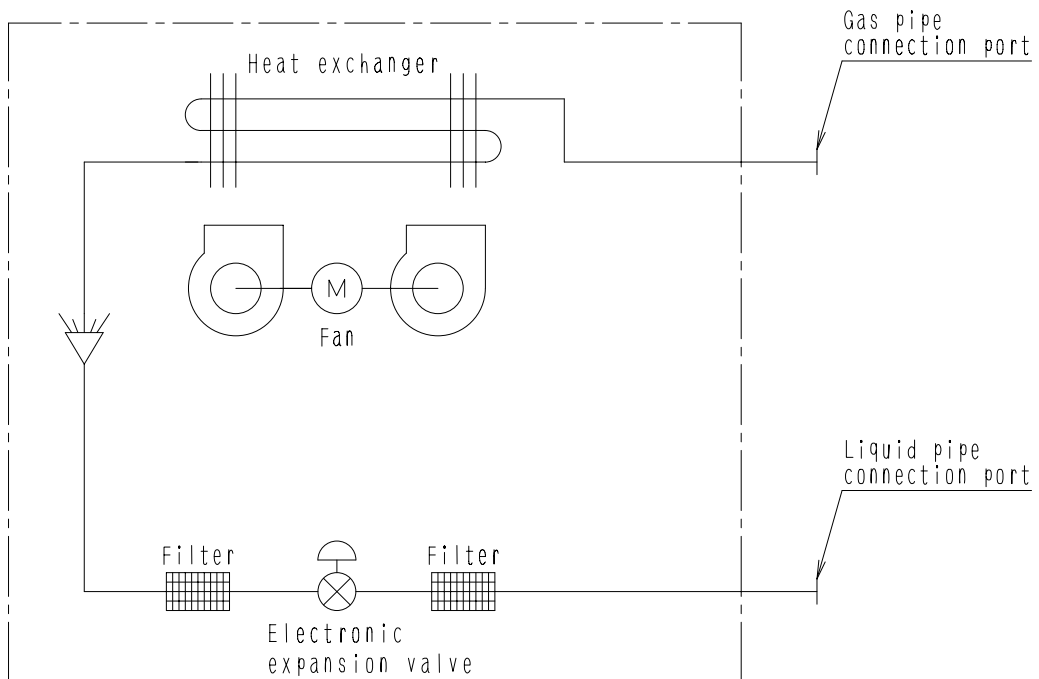
Indoor unit	Gas side	Liquid side
FXMQ200MVE	φ19.1 attached piping	φ9.5
FXMQ250MVE	φ22.2 attached piping	φ9.5

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

Number	Name	Description
13	Water supply port	PS1B Internal thread
12	Drain piping connection	Major dia. φ33.349, Minor dia. φ30.391
11	Name plate	Brazing
10	Attached piping	Brazing
9	Suction flange	
8	Discharge companion flange	
7	Hook	M10
6	Transmission wiring connection	
5	Power supply wiring connection	
4	Switch box	
3	Ground terminal	M5 (Inside switch box)
2	Gas pipe connection	Attendant piping connection
1	Liquid pipe connection	Flare connection

3D038851

4. Piping Diagrams



4D034245B

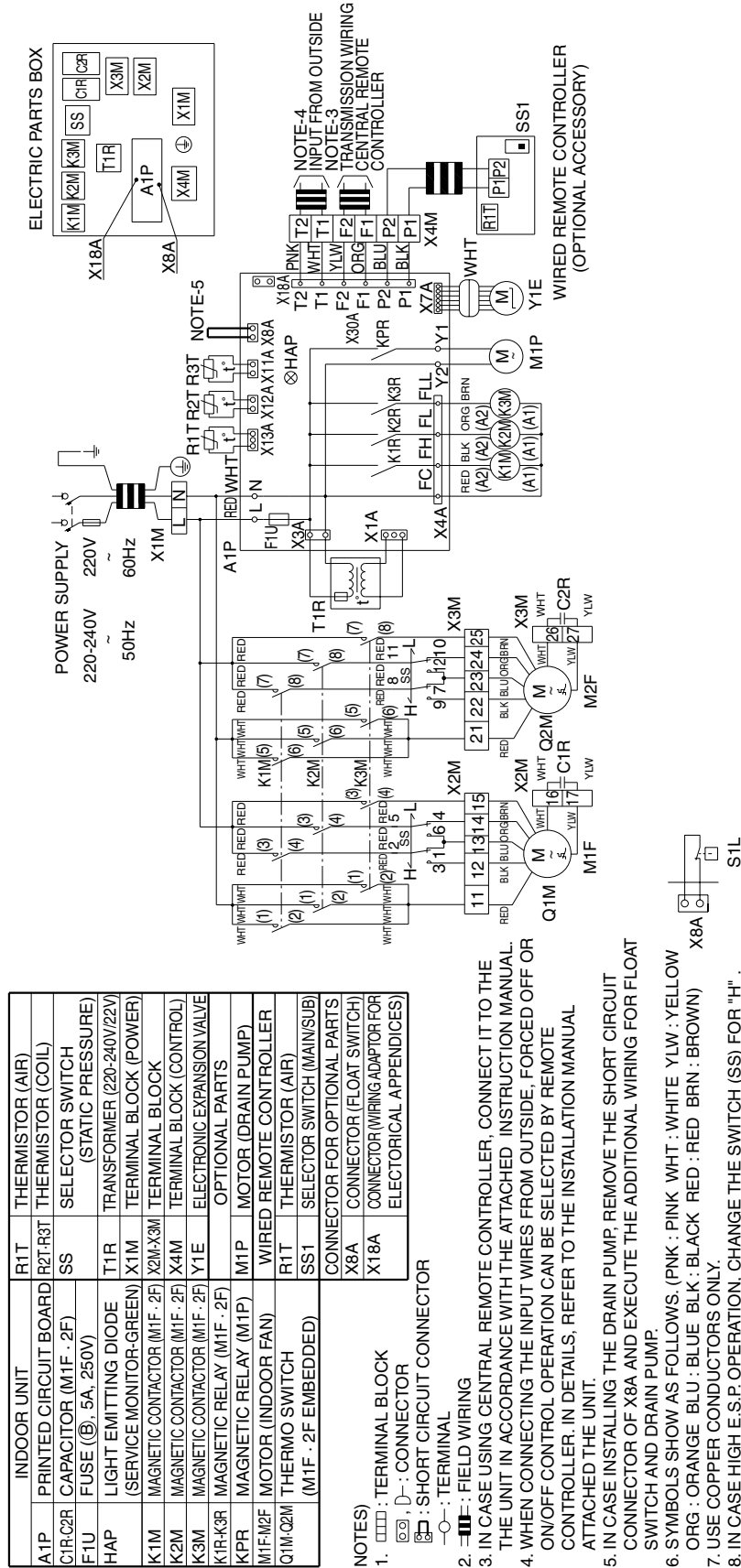
■ Refrigerant pipe connection port diameters

(mm)

Model	Gas	Liquid
FXMQ200MA	φ19.1	φ9.5
FXMQ250MA	φ22.2	

5. Wiring Diagrams

FXMQ200 · 250MAVE



3D039621B

6. Electric Characteristics

Units					Power supply		IFM		Input(W)	
Model	Type	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
FXMQ200MA	VE	50	220-240	MAX. 264	8.1	15	0.380×2	6.5	1294	1294
FXMQ250MA				Min. 198	9.0	15	0.380×2	7.2	1465	1465

Symbols :

- MCA : Min. Circuit Amps (A)
 MFA : Max. Fuse Amps (See note 5)
 KW : Fan Motor Rated Output(KW)
 FLA : Full Load Amps(A)
 IFM : Indoor Fan Motor

Note :

- Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits,
- Maximum allowable voltage unbalance between phases is 2%.
- MCA/MFA
 $MCA = 1.25 \times FLA$
 $MFA \leq 4 \times FLA$
 (Next lower standard fuse rating. Min. 15A)
- Select wire size based on the MCA.
- Instead of fuse, use Circuit Breaker.

C : 4D040330A

7. Capacity Tables

7.1 Cooling Capacity

FXMQ-MA

[50Hz]

Unit Size	Outdoor air temp.		Indoor air temp.											
	14.0°CWB / 20°CDB		16.0°CWB / 23°CDB		18.0°CWB / 26°CDB		19.0°CWB / 27°CDB		20.0°CWB / 28°CDB		22.0°CWB / 30°CDB		24.0°CWB / 32°CDB	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
200	10.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4
	12.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4
	14.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4
	16.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4
	18.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4
	20.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4
	21.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4
	23.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4
	25.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4
	27.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4
31.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4	
35.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4	
37.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4	
39.0	15.1	13.4	18.0	14.9	21.0	16.3	22.4	16.8	23.8	17.0	26.8	17.6	28.4	
250	10.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8
	12.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8
	14.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8
	16.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8
	18.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8
	20.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8
	21.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8
	23.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8
	25.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8
	27.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8
31.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8	
35.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8	
37.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8	
39.0	18.9	16.9	22.5	18.5	26.2	20.4	28.0	20.9	29.8	21.2	33.7	22.1	36.8	

TC Total capacity : kW
SHC Sensible heat capacity : kW

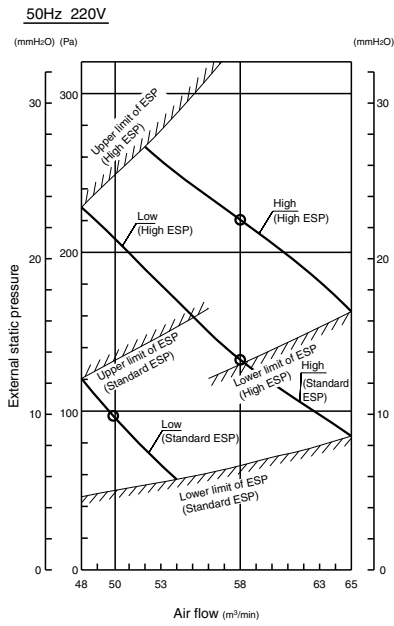


Refer to Outdoor Unit Capacity Tables : on page 491~, 552~, for the actual performance data of each indoor and outdoor unit combination.

8. Fan Performances

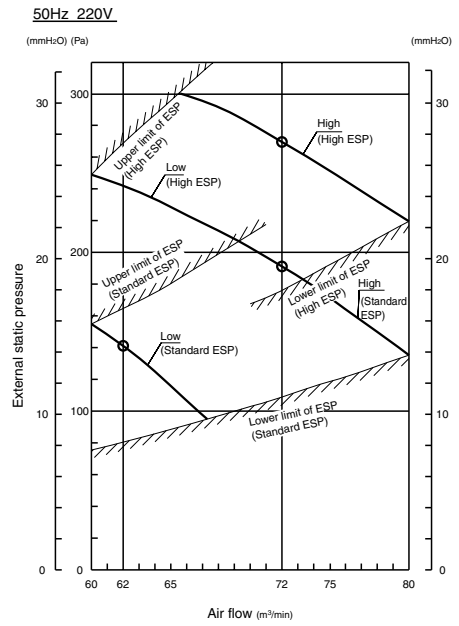
8.1 50Hz

FXMQ200MA



3D035172-5

FXMQ250MA



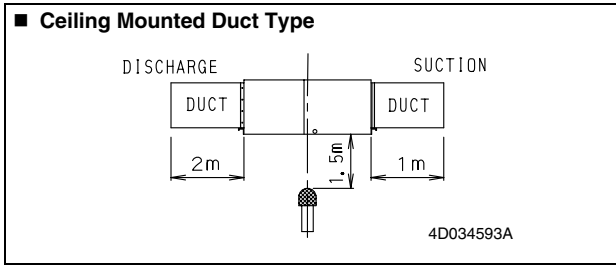
3D035173-5

Note:

1. The remote controller can be used to switch between “high” and “low”.
2. The air flow is set to “standard” before leaving the factory. It is possible to switch between “standard ESP” and “high ESP” by changing the switch in the indoor unit electrical box.

9. Sound Levels

Overall



Note:

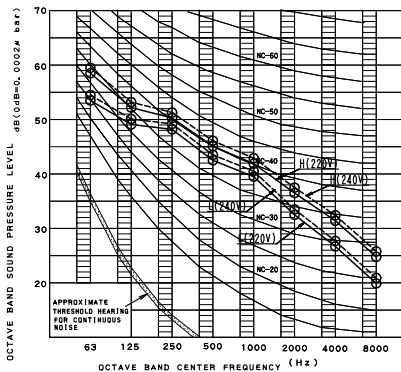
1. The operating conditions are assumed to be standard (JIS conditions).
2. These operating values were obtained in a dead room (conversion values).
Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

Model	220V 50Hz		240V 50Hz	
	H	L	H	L
FXMQ200MA	48	45	49	46
FXMQ250MA				

Octave Band Level

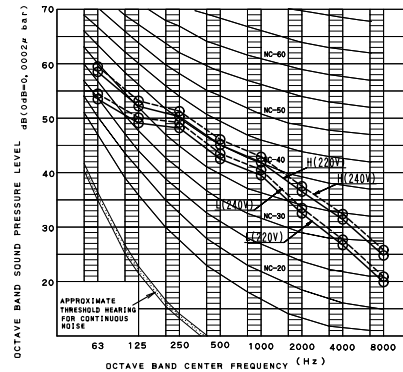
- — ○ 220V 50Hz
- - - - ○ 240V 50Hz

FXMQ200MAVE



C : 4D035168

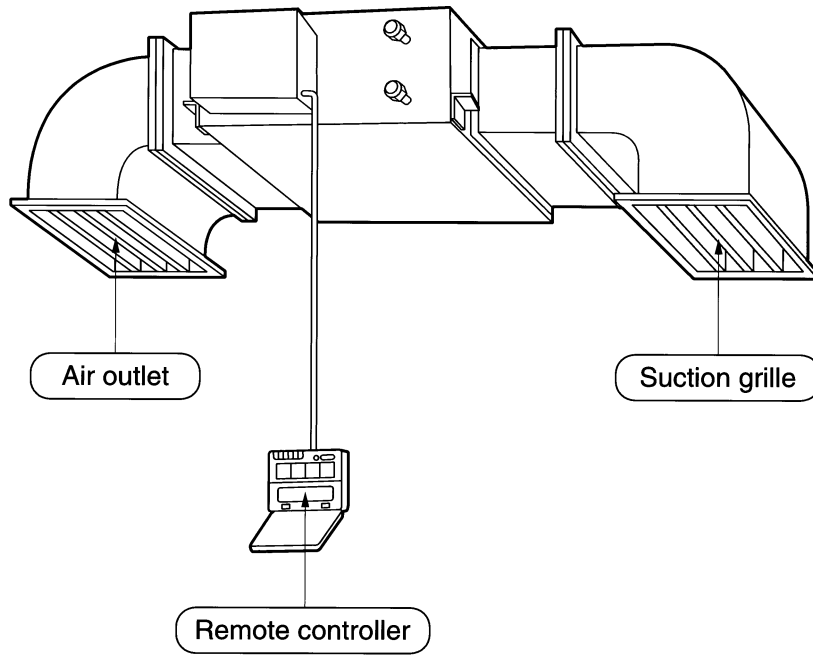
FXMQ250MAVE



C : 4D035169

10. Installation

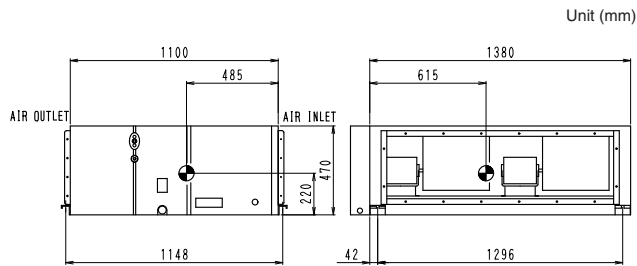
Installation Example



3P086155-2B

8

Center of Gravity FXMQ200 · 250MA



C : 4D035171

Service Space

Please attach additional thermal insulation material to the unit body when it is believed that the relative humidity in the ceiling exceeds 80%. Use glass wool, polyethylene foam, or similar with a thickness of 10 mm or more as thermal insulation material.

- (1) Select an installation site where the following conditions are fulfilled and that meets with your customer's approval.
 - In the upper space (including the back of the ceiling) of the indoor 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 flammable gas leakage.
 - Where sufficient clearance for maintenance and service can be ensured. **(Refer to Fig. 1)**
 - Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual of the outdoor unit.)



CAUTION

- Install the indoor and outdoor units, power supply wiring and connecting wires at least 1 meter away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 1 meter 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.**

<FXMQ200 · 250MAVE>

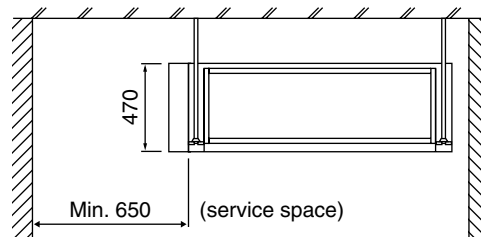


Fig. 1 (length : mm)

Note:

Above figure means minimum value. Please keep these value at least.

C : 3P086156-6U

Bolt Pitch

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

〈 FXMQ200 · 250MAVE 〉

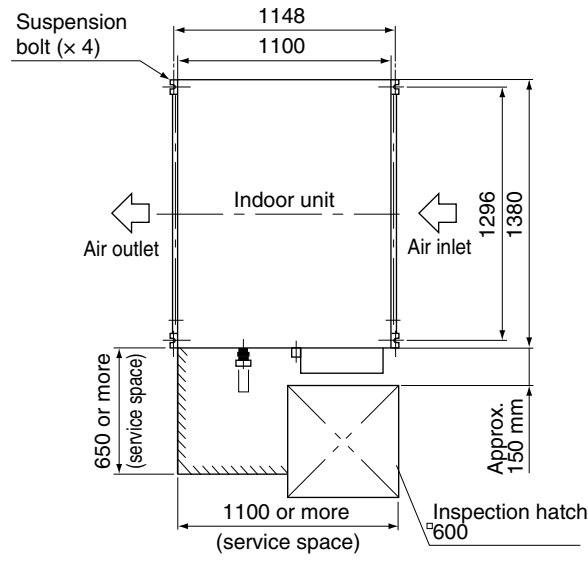
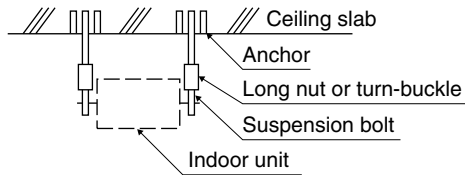


Fig. 2 (length : mm)

- (2) Install a canvass duct to the air discharge outlet and air inlet so that vibration from the machine body 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) Install suspension bolts. (Use bolts of 10 mm diameter.)
 - Install the equipment where supporting structures are strong enough to bear the equipment's weight. Use embedded inserts or anchor bolts with new buildings and hole-in-anchors with old buildings.

〈 Installation example 〉



Note) All the above parts are field supplied.

C : 3P086156-6U

Drain Piping Work

⟨⟨Rig the drain pipe as shown below and take measures against condensation. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.⟩⟩

⟨⟨Insulate the drain hose inside the building.⟩⟩

(1) Carry out the drain piping.

FXMQ200 · 250MAVE

- A drain trap need not be installed.
- The diameter of the piping is the same as that of the connecting pipe (PS1B), and should be kept equal to or greater than that of the connecting pipe.

(2) After piping work is finished, check drainage flows smoothly.

FXMQ200 · 250MAVE

- Open the water supply port, add approximately 1 liter of water slowly into the drain pan and check drainage flow.



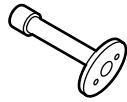
CAUTION

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

C : 3P086156-6U

11. Accessories

Standard Accessories

Name	Attached piping (1)	(Other) • Operation manual • Installation manual • Screws for flange connection (M5) (48 pcs.) • Insulation material (for hanger)(2 pcs.) • Washers (8 pcs.) • Clamps (2 pcs.) • Hexagon head bolt for pipe flange (M10) (2 pcs.) • Spring washer for pipe flange (M10) (2 pcs.)
Quantity	1 set	
Shape		

C : 3P086156-6U

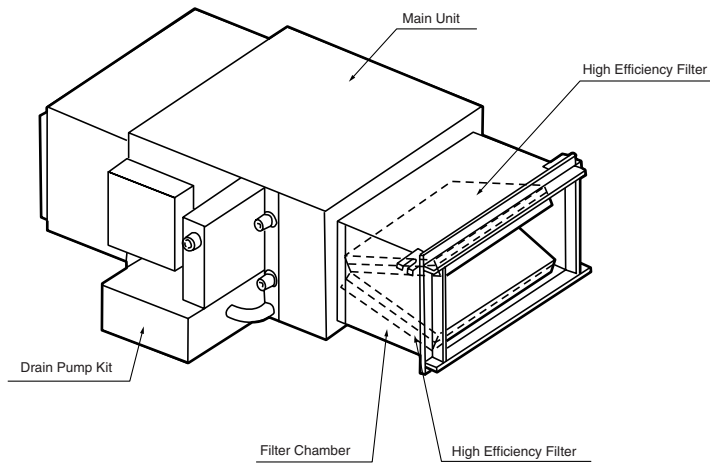
Optional Accessories (For Unit)

Item	Type	FXMQ200MA	FXMQ250MA
Drain pump kit			KDU30L250VE
High efficiency filter	65%		KAFJ372L280
	90%		KAFJ373L280
Filter chamber			KDJ3705L280
Long life replacement filter			KAFJ371L280

3D040334B

8

Optional Accessories (For Controls) : Refer to P.645



High Efficiency Filter

Specification

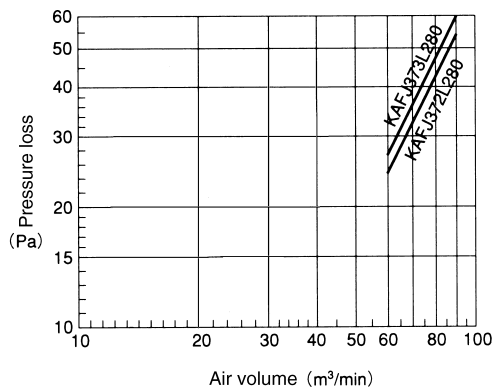
Model	65% type	90% type
Items	KAFJ372L280	KAFJ373L280
Filter Chamber	KDJ3705L280	KDJ3705L280
Dimension (WxD×T) (mm)	684×445×60	684×445×60
Average Dust Collection Efficiency (%)	Colorimetric method 65%	
Initial Pressure Loss (Pa)	27	42
Final Pressure Loss (Pa)	98	
Filter	Non-woven fabric of synthetic fiber	
Life Time (h)	2500 hours (dust density 0.15mg/m ³)	
Seats Structured	2	
Applicable Models	200-250 Class	

Note:

The filter chamber is separately required when the high efficiency filter will be installed.

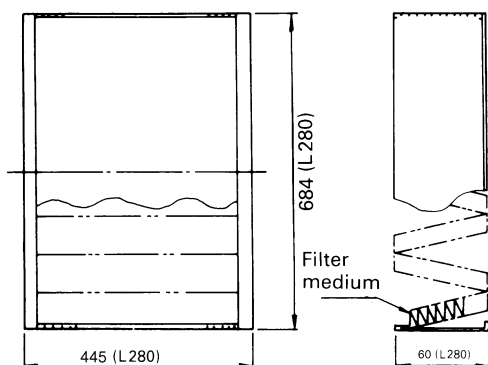
Characteristics of filter

■ KAFJ372L280, KAFJ373L280

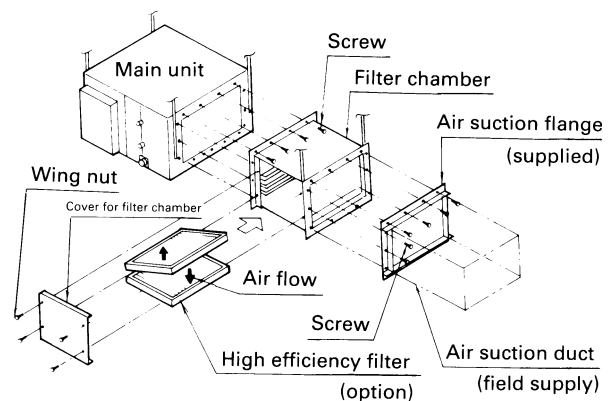


Dimensions of filter

■ KAFJ372L280, KAFJ373L280



Installation



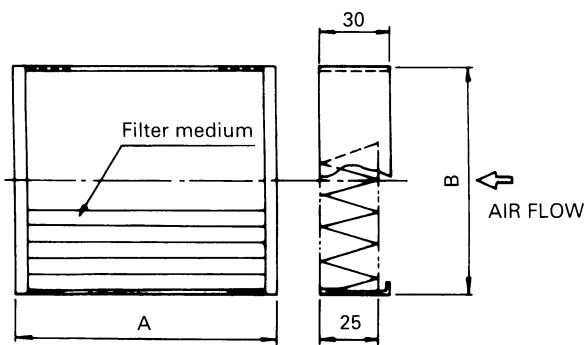
- Meet the airflow direction and arrow mark putting on the High efficiency filter.
- It is impossible to be built in with the air cleaning unit together.

Long Life Replacement Filter

Specifications

Item	Model	KAFJ371L280
Filter Chamber for Bottom Suction		KDJ3705L280
Dimensions (WxDxT) mm		684x445x30
Average Efficiency (%)		50% (Gravity method)
Pressure Loss (Pa)	Initial	9.8 (1mmH ₂ O)
	Final	49 (5mmH ₂ O)
Material		Mildew Proof Resin Net
Number Required per Unit		2
Life Time (h)		2,500 h (dust particle concentration at 0.15mg/m ³)
Applicable Model		200-250 Class

Dimensions



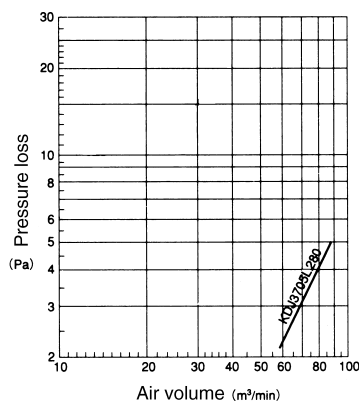
Model	AxB	Quantity
KAFJ371L280	684x445	2

Note:

The filter chamber is required when the long life filter will be installed.

Characteristics of filter

■ KDJ3705L280



Drain Pump Kit

Specification

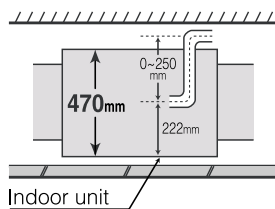
Items	Model	KDU30L250VE
Power Supply		Single phase 220V 50/60Hz
Power Consumption (W)		19/17 (50/60Hz)
Drain-up Lift (mm)		Standard drain outlet of the unit + 222 + 250
Drain Outlet		VP25 (Internal diameter ϕ 25, external diameter ϕ 32)
Safety Device		Float switch
Weight (kg)		10
Applied Models		200 · 250 Class

Precaution at use

1. When this kit will be used with the natural evaporation pan type humidifier together, the piping of unit's drain and humidifier's drain can be used in common.
2. Be sure to do test run (cooling) to make sure the drain flows out.
3. Prohibit providing a drain trap when the drain pump kit will be mounted.

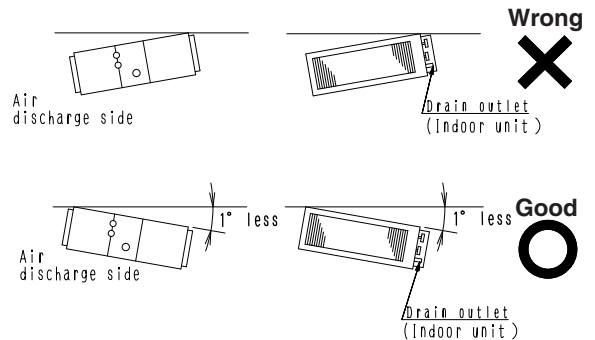
Installation Space

KDU30L250VE



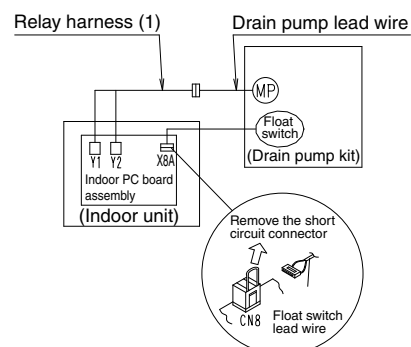
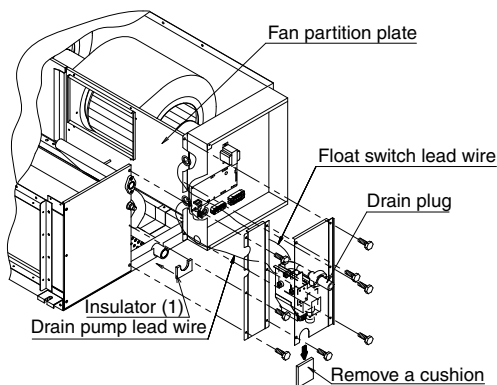
If the drain pump kit has already been installed, note the following when installing the indoor unit.

- Do not install the indoor unit on an incline against drainage flow (away from the drain outlet). This can lead to water leaks.

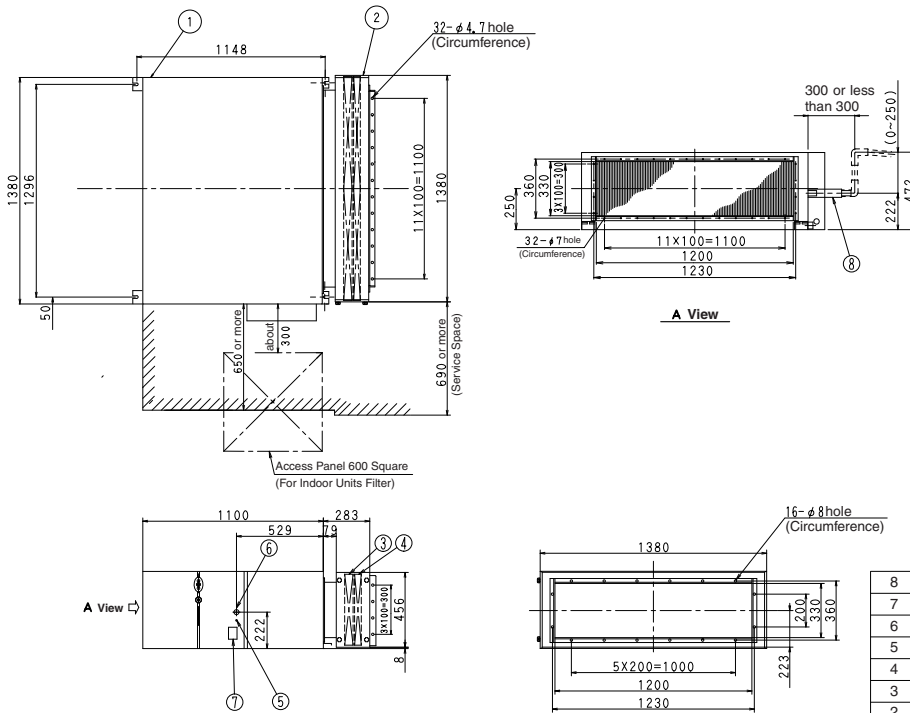


Internal Wiring Method

■ KDU30L250VE



Dimensions with the Optional Accessories
Drain pump kit, High efficiency filter, Long life filter



8	Drain hose	Attached to Drain pump kit
7	Water inlet	
6	Drain piping connection	VP25(O.D.φ32,I.D.φ25)
5	Drain pump kit	Built in a body
4	Long life filter	
3	High efficiency filter	
2	Filter chamber	
1	Ceiling mounted duct type's body	
Number	Name	Description

JC : 3D011124G

FXHQ-MA

Ceiling Suspended Type

1. Features	316
2. Specifications	317
3. Dimensions	318
4. Piping Diagrams	321
5. Wiring Diagrams	322
6. Electric Characteristics	323
7. Capacity Tables	324
7.1 Cooling Capacity	324
8. Sound Levels	325
9. Installation	326
10. Accessories	329

1. Features

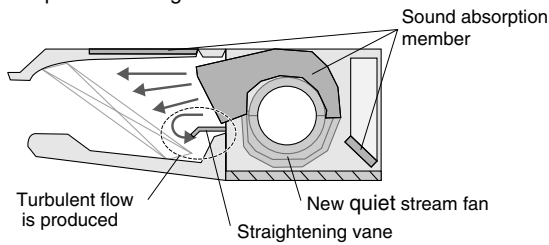
External Appearance



Slim body with quieter and wider air flow

- Adoption of newly designed QUIET STREAM FAN

Uses the new quiet stream fan and many more quiet technologies.

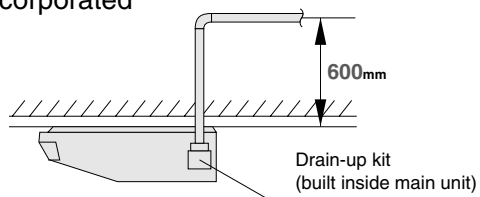


- Low operating sound (dB(A))

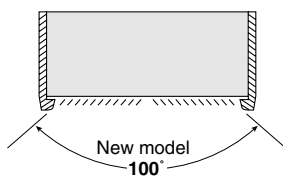
Class	32	63	100
Operating sound (H/L)	36/31	39/34	45/37

- Installation is easy

- Drain-up kit (optional) can be easily incorporated

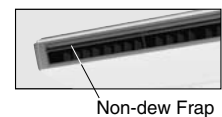


- Wide air discharge openings produce a spreading 100° air flow



- Maintenance is easy

- New Non-dew Frap with no implanted Bristle-free Frap minimizes contamination and makes cleaning simpler.



- Easy to clean flat design
- Maintenance is easier because everything can be performed from below the unit
- A long-life filter (maintenance free up to one year) is equipped as standard

2. Specifications

Ceiling Suspended Type

Model		FXHQ32MAVE	FXHQ63MAVE	FXHQ100MAVE	
*1 Cooling Capacity (19.5°CWB)	kcal/h	3,200	6,300	10,000	
	Btu/h	12,600	24,900	39,600	
	kW	3.7	7.3	11.6	
*2 Cooling Capacity (19.0°CWB)	kW	3.6	7.1	11.2	
Casing Color		White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)	
Dimensions: (HxWxD)		mm 195x960x680	mm 195x1,160x680	mm 195x1,400x680	
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm 2x12x1.75	mm 3x12x1.75	mm 3x12x1.75	
	Face Area	m ² 0.182	0.233	0.293	
Fan	Model	3D12K1AA1	4D12K1AA1	3D12K2AA1	
	Type	Sirocco Fan	Sirocco Fan	Sirocco Fan	
	Motor Output x Number of Units	W 62x1	62x1	130x1	
	Air Flow Rate (H/L)	m ³ /min	12/10	17.5/14	25/19.5
		cfm	424/353	618/494	883/688
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 Wool	Glass Wool	Glass Wool	
Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	
Piping Connections	Liquid Pipes	mm φ6.4 (Flare Connection)	mm φ9.5 (Flare Connection)	mm φ9.5 (Flare Connection)	
	Gas Pipes	mm φ12.7 (Flare Connection)	mm φ15.9 (Flare Connection)	mm φ15.9 (Flare Connection)	
	Drain Pipe	mm VP20 (External Dia. 26 Internal Dia. 20)	mm VP20 (External Dia. 26 Internal Dia. 20)	mm VP20 (External Dia. 26 Internal Dia. 20)	
Machine Weight (Mass)		kg 24	28	33	
*4 Sound Level (H/L) (220-240V)		dBA 36/31	39/34	45/37	
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	
Connectable Outdoor Unit		R-410A PA Series	R-410A PA Series	R-410A PA Series	
Standard Accessories		Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Insulation for Fitting. Clamps. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Insulation for Fitting. Clamps. Washers.	Operation Manual. Installation Manual. Paper Pattern for Installation. Drain Hose. Clamp Metal. Insulation for Fitting. Clamps. Washers.	
Drawing No.		C : 3D038815A			

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- *4 Anechoic chamber conversion value, measured at a point 1 m in front of the unit and 1 m downward. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- 5 Refer to page 323 for Fan Motor Input.

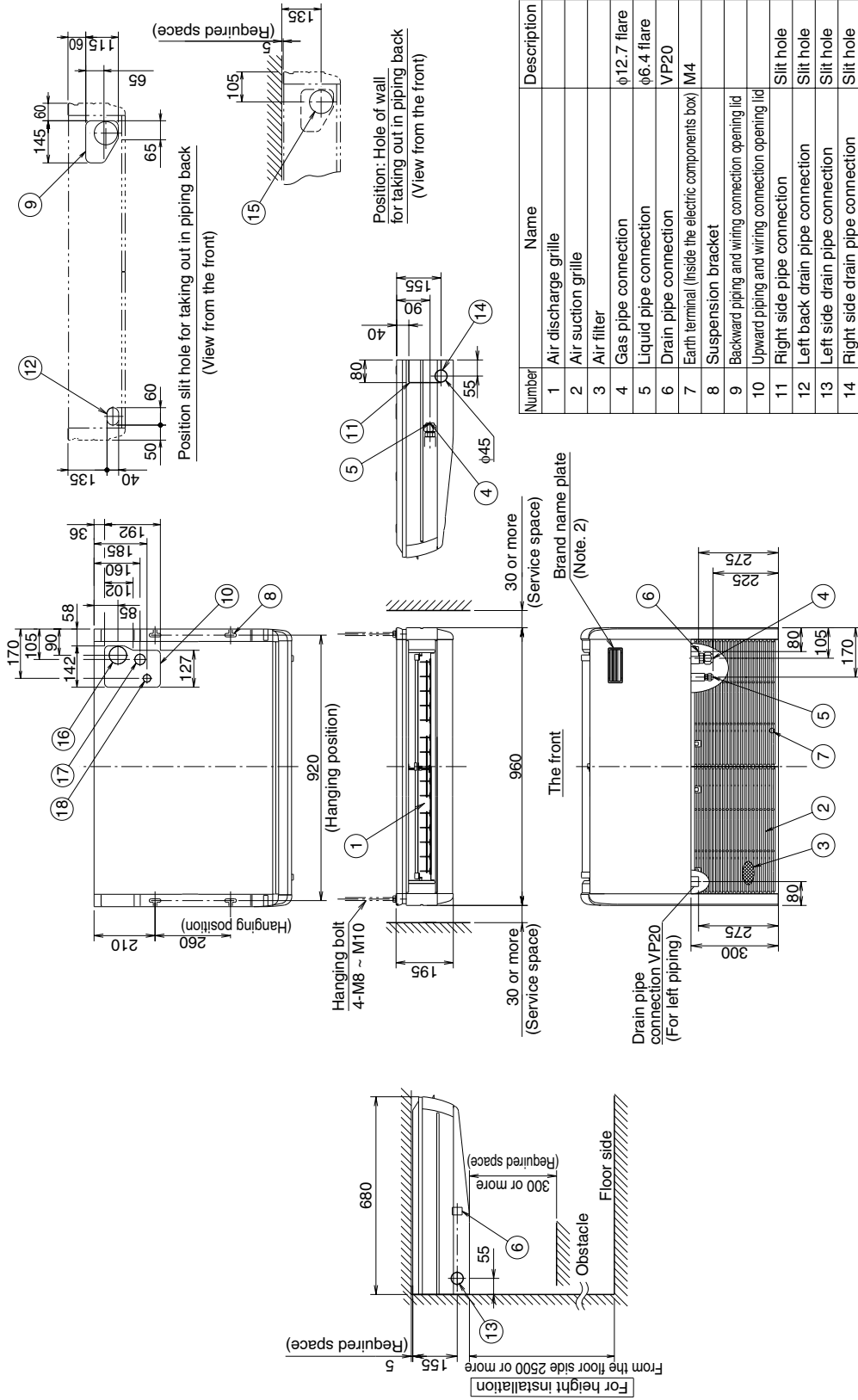
Conversion Formulae
kcal/h=kWx860
Btu/h=kWx3412
cfm=m ³ /minx35.3



3. Dimensions

FXHQ32MA

Unit (mm)



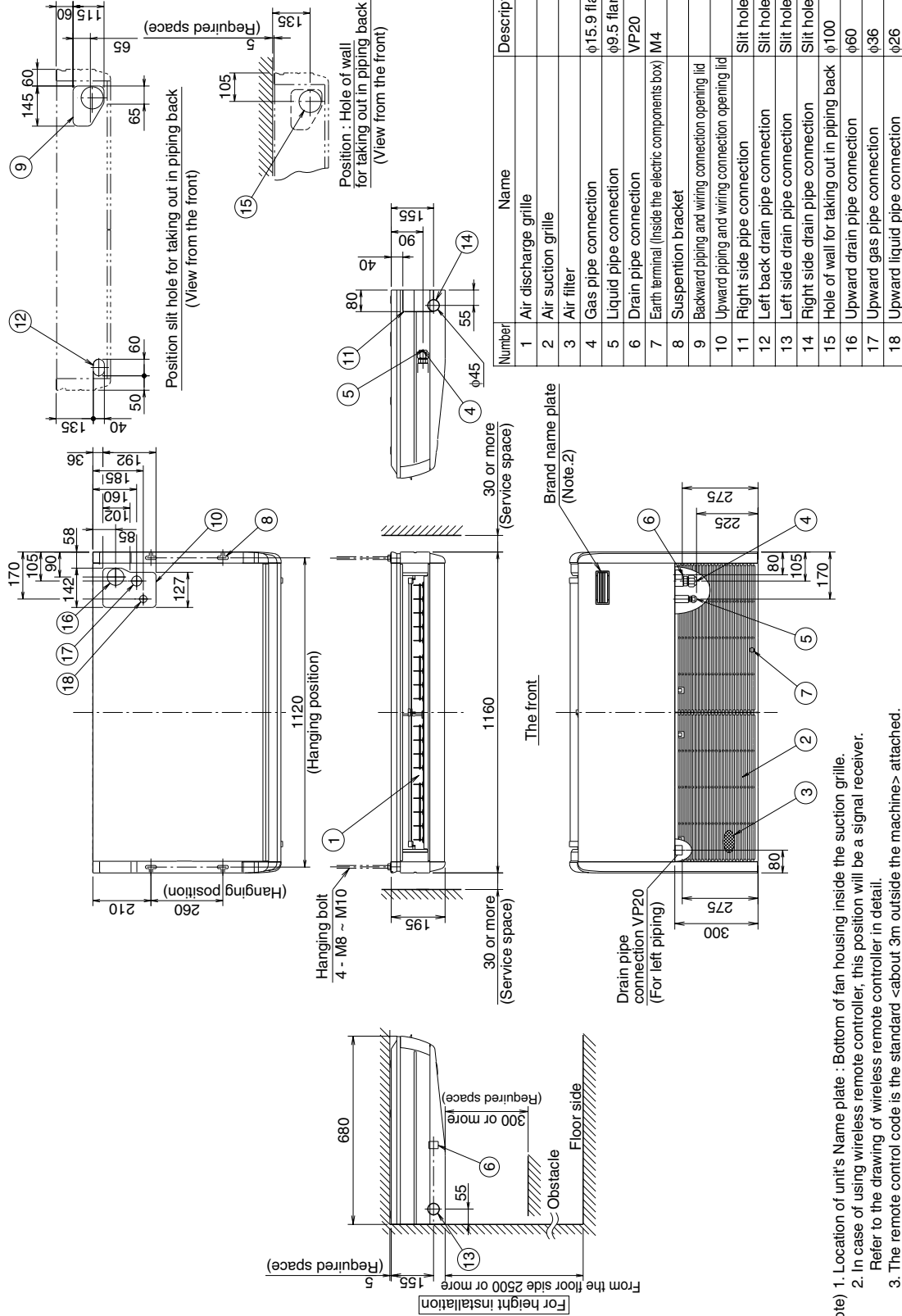
Number	Name	Description
1	Air discharge grille	
2	Air suction grille	
3	Air filter	
4	Gas pipe connection	φ12.7 flare
5	Liquid pipe connection	φ6.4 flare
6	Drain pipe connection	VP20
7	Earth terminal (Inside the electric components box)	M4
8	Suspension bracket	
9	Backward piping and wiring connection opening lid	
10	Upward piping and wiring connection opening lid	
11	Right side pipe connection	Slit hole
12	Left back drain pipe connection	Slit hole
13	Left side drain pipe connection	Slit hole
14	Right side drain pipe connection	Slit hole
15	Hole of wall for taking out in piping back	φ100
16	Upward drain pipe connection	φ60
17	Upward gas pipe connection	φ36
18	Upward liquid pipe connection	φ26

3D038855

- Note) 1. Location of unit's Name plate : Bottom of fan housing inside the suction grille.
 2. In case of using wireless remote controller, this position will be a signal receiver. Refer to the drawing of wireless remote controller in detail.
 3. The remote control code is the standard <about 3m outside the machine>- attached. (0.5mm² x 2wicks x O.D.φ5.4) (It is not attached to VRV.)

FXHQ63MA

Unit (mm)



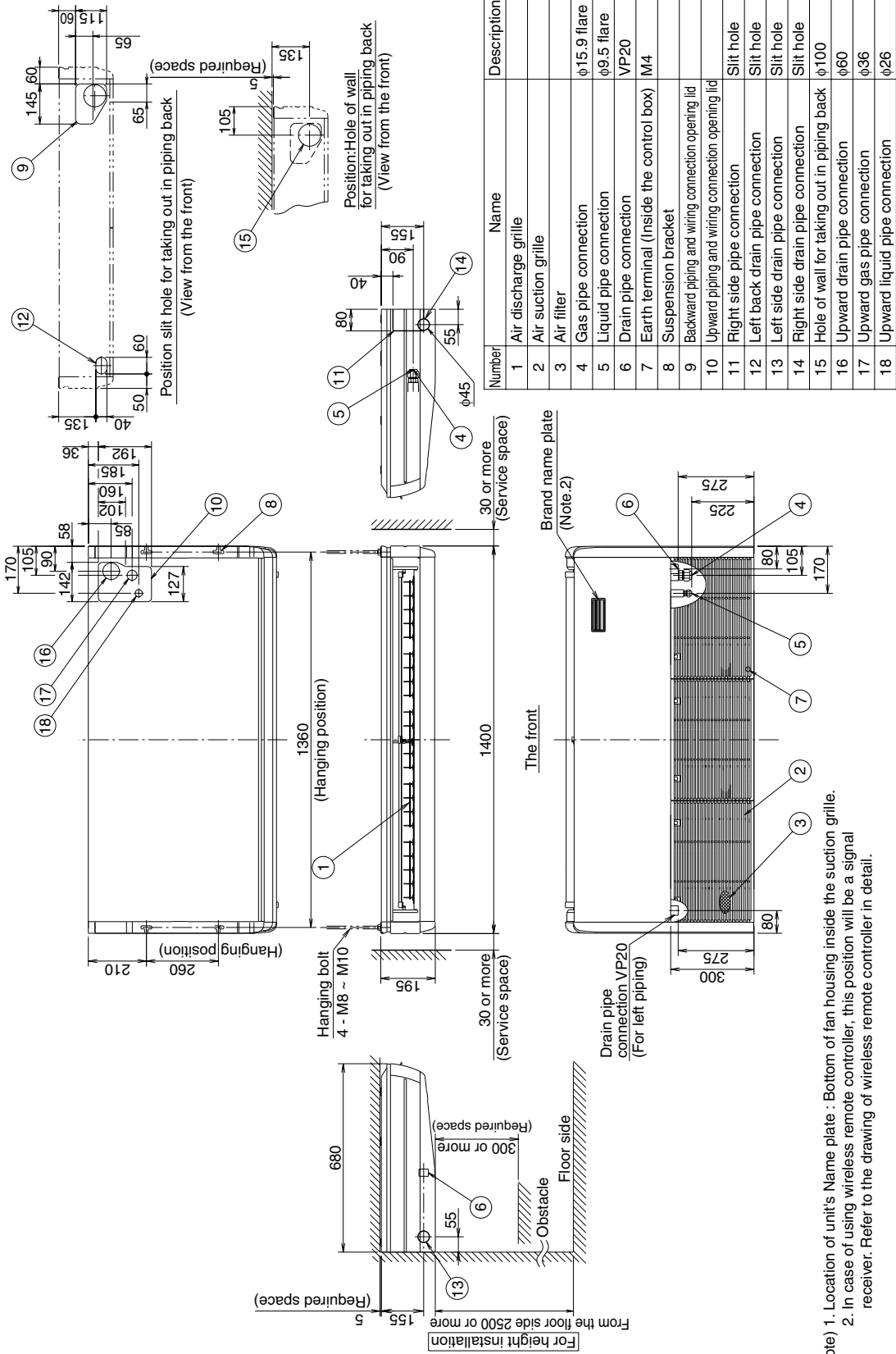
Number	Name	Description
1	Air discharge grille	
2	Air suction grille	
3	Air filter	
4	Gas pipe connection	φ15.9 flare
5	Liquid pipe connection	φ9.5 flare
6	Drain pipe connection	VP20
7	Earth terminal (inside the electric components box)	M4
8	Suspension bracket	
9	Backward piping and wiring connection opening lid	
10	Upward piping and wiring connection opening lid	
11	Right side pipe connection	Slit hole
12	Left back drain pipe connection	Slit hole
13	Left side drain pipe connection	Slit hole
14	Right side drain pipe connection	Slit hole
15	Hole of wall for taking out in piping back	φ100
16	Upward drain pipe connection	φ60
17	Upward gas pipe connection	φ36
18	Upward liquid pipe connection	φ26

3D038856

- Note) 1. Location of unit's Name plate : Bottom of fan housing inside the suction grille.
 2. In case of using wireless remote controller, this position will be a signal receiver. Refer to the drawing of wireless remote controller in detail.
 3. The remote control code is the standard <about 3m outside the machine> attached. (0.5mm²×2wicks×O.D.φ5.4) (It is not attached to VRV.)

FXHQ100MA

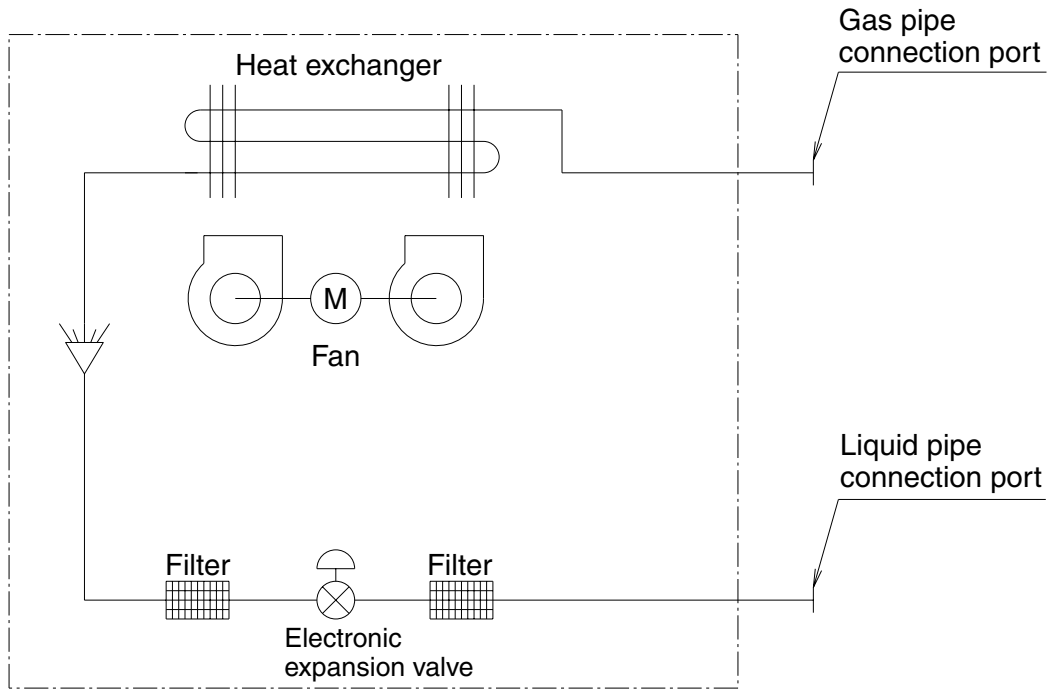
Unit (mm)



3D038857B

Note) 1. Location of unit's Name plate : Bottom of fan housing inside the suction grille.
 2. In case of using wireless remote controller, this position will be a signal receiver. Refer to the drawing of wireless remote controller in detail.

4. Piping Diagrams



4D034245C

■ Refrigerant pipe connection port diameters

Model	(mm)	
	Gas	Liquid
FXHQ32MA	φ12.7	φ6.4
FXHQ63 · 100MA	φ15.9	φ9.5

6. Electric Characteristics

Model	Units			Power supply		IFM		Input(W)	
	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
FXHQ32MAVE	50	220-240	MAX. 264 Min. 198	0.8	15	0.062	0.6	111	111
FXHQ63MAVE				0.8	15	0.062	0.6	115	115
FXHQ100MAVE				0.9	15	0.130	0.7	135	135

Symbols :

- MCA : Min. Circuit Amps (A)
 MFA : Max. Fuse Amps (See note 5)
 KW : Fan Motor Rated Output(KW)
 FLA : Full Load Amps(A)
 IFM : Indoor Fan Motor

Note :

- Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits,
- Maximum allowable voltage unbalance between phases is 2%.
- MCA/MFA
 $MCA = 1.25 \times FLA$
 $MFA \leq 4 \times FLA$
 (Next lower standard fuse rating. Min. 15A)
- Select wire size based on the MCA.
- Instead of fuse, use Circuit Breaker.

C : 4D035304B

7. Capacity Tables

7.1 Cooling Capacity

FXHQ-MA

[50Hz]

Cooling capacity

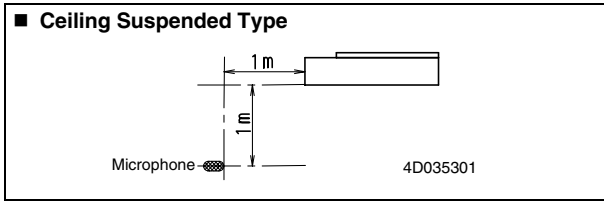
Unit Size	Indoor air temp.														
	14.0°CWB 20°CDB		16.0°CWB 23°CDB		18.0°CWB 26°CDB		19.0°CWB 27°CDB		20.0°CWB 28°CDB		22.0°CWB 30°CDB		24.0°CWB 32°CDB		
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	
32	100	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	4.3	3.0	4.7	3.1
	120	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	4.3	3.0	4.7	3.0
	140	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	4.3	3.0	4.6	3.0
	160	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	4.3	3.0	4.5	2.9
	180	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	4.3	3.0	4.4	2.9
	200	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	4.3	3.0	4.4	2.9
	210	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	4.2	3.0	4.4	2.9
	230	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	4.2	3.0	4.3	2.9
	250	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	4.2	2.9	4.3	2.8
	270	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	4.1	2.9	4.2	2.8
	290	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	4.1	2.9	4.2	2.7
	310	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	4.0	2.8	4.1	2.7
330	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	3.9	2.8	4.0	2.7	
350	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	3.9	2.8	4.0	2.7	
370	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	3.9	2.8	4.0	2.7	
390	2.4	2.3	2.9	2.6	3.4	2.8	3.6	2.9	3.8	2.9	3.8	2.7	3.8	2.6	
63	100	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.5	5.5	9.3	5.6
	120	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.5	5.5	9.2	5.5
	140	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.5	5.5	9.1	5.4
	160	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.5	5.5	9.0	5.3
	180	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.5	5.5	8.8	5.3
	200	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.5	5.5	8.7	5.2
	210	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.5	5.5	8.7	5.2
	230	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.4	5.4	8.5	5.1
	250	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.4	5.4	8.4	5.1
	270	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.4	5.4	8.3	5.0
	290	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.3	5.3	8.2	5.0
	310	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.3	5.3	8.1	4.9
330	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.2	5.2	8.1	4.9	
350	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.6	5.3	8.2	5.2	8.1	4.9	
370	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.5	5.2	8.1	5.1	8.0	4.8	
390	4.8	4.1	5.7	4.6	6.6	5.1	7.1	5.2	7.4	5.2	8.1	5.1	8.0	4.8	
100	100	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.9	8.1	13.4	8.5	14.7	8.7
	120	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.9	8.1	13.4	8.5	14.5	8.5
	140	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.9	8.1	13.4	8.5	14.4	8.4
	160	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.9	8.1	13.4	8.5	14.4	8.4
	180	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.9	8.1	13.4	8.5	14.0	8.2
	200	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.9	8.1	13.4	8.5	13.8	8.1
	210	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.9	8.1	13.4	8.5	13.7	8.0
	230	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.9	8.1	13.2	8.3	13.5	7.9
	250	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.9	8.1	13.0	8.2	13.3	7.8
	270	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.9	8.1	12.8	8.1	13.1	7.7
	290	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.9	8.1	12.6	8.0	12.9	7.6
	310	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.9	8.1	12.4	7.9	12.7	7.6
330	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.9	8.1	12.2	7.8	12.5	7.5	
350	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.8	8.0	12.0	7.7	12.3	7.4	
370	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.8	8.0	11.9	7.7	12.3	7.3	
390	7.6	6.2	9.0	6.9	10.5	7.8	11.2	8.0	11.4	7.9	11.7	7.6	12.0	7.2	

TC Total capacity ; kW
SHC Sensible heat capacity ; kW

Refer to Outdoor Unit Capacity Tables : on page 491 ~, 552~, for the actual performance data of each indoor and outdoor unit combination.

8. Sound Levels

Overall



Note:

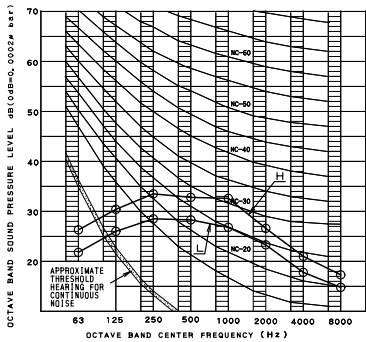
1. The operating conditions are assumed to be standard (JIS conditions).
2. These operating values were obtained in a dead room (conversion values).
Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

Model	220~240V 50Hz	
	H	L
FXHQ32MA	36	31
FXHQ63MA	39	34
FXHQ100MA	45	37

Octave Band Level

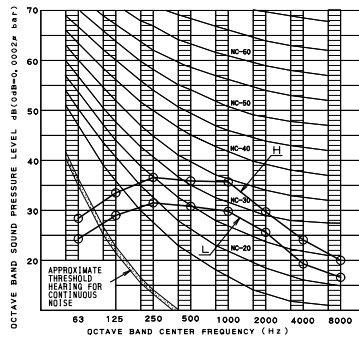
○ — ○ 220~240V 50Hz

FXHQ32MAVE



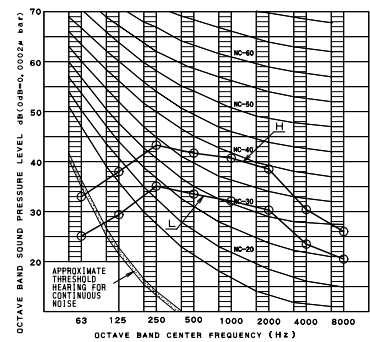
C : 4D035301

FXHQ63MAVE



C : 4D035302

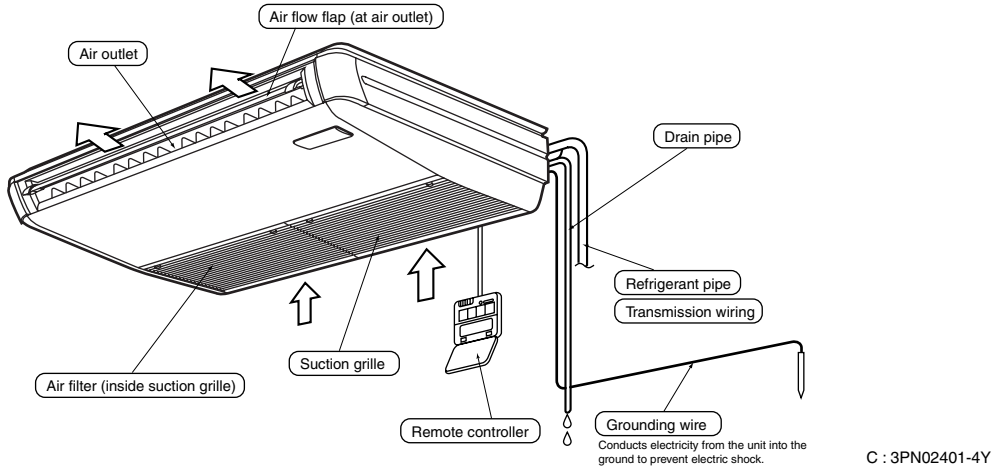
FXHQ100MAVE



C : 4D035303A

9. Installation

Installation Example



Service Space

- (1) Select an installation site where the following conditions are fulfilled and that meets your customer's approval.
- In the upper space of the indoor 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 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 flammable gas leakage.
 - Where sufficient clearance for maintenance and service can be ensured. (Refer to Fig. 1)
If sufficient clearance could be ensured at*, leave a space of 200 mm or more between the unit and its surroundings easier maintenance and service.
 - Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual for the outdoor unit.)



CAUTION

- Install the indoor and outdoor units, power supply wiring and connecting wires at least 1 meter away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.)

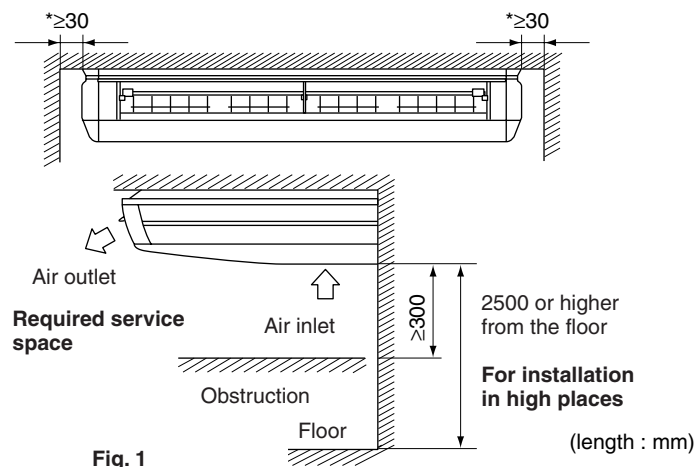


Fig. 1

- (2) This indoor unit may be installed on ceilings up to 3.5 m in height. However, if the ceiling is higher than 2.7m, the remote control will have to be set locally. (Refer to "FIELD SETTING")
- (3) 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. (Installation pitch is marked on the paper pattern for installation. Refer to it to check for points requiring reinforcing.)

C : 3PN01417-7P

Bolt Pitch

(1) Relative positions of indoor unit, suspension bolt, piping hole, drain piping hole, and electric wire hole position. (Refer to Fig. 2)

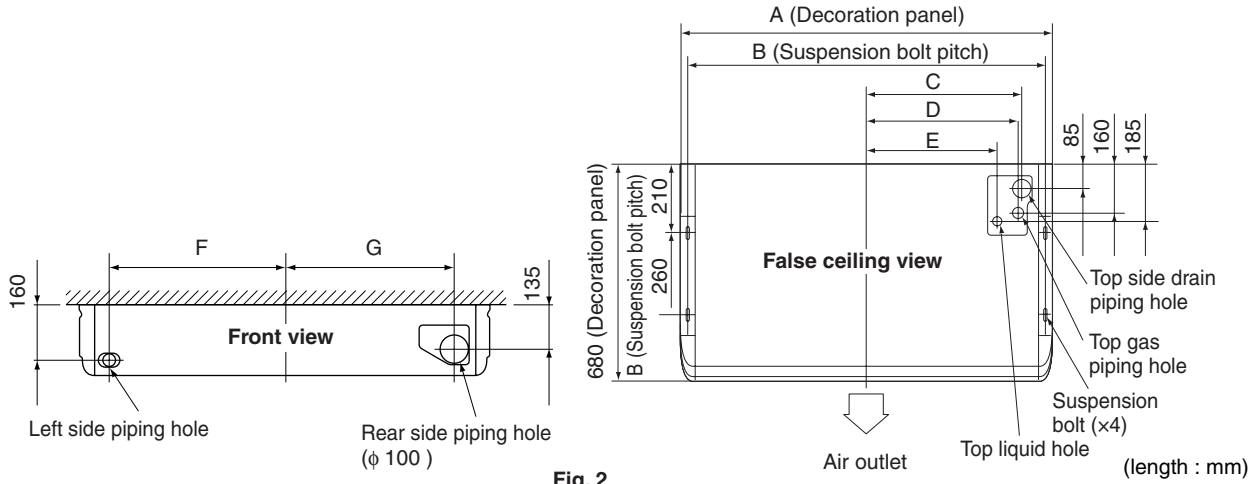


Fig. 2

Model	A	B	C	D	E	F	G
FXHQ32M(A)VE	960	920	390	375	310	400	375
FXHQ63M(A)VE	1160	1120	490	475	410	500	475
FXHQ100M(A)VE	1400	1360	610	595	530	620	595

(2) Make the suspension bolt hole, piping hole, drain piping hole.

- Refer to the paper pattern for installation for hole positions.
- Fix the positions for suspension bolt, piping hole, drain piping hole, and electric wire hole, and make the openings.

C : 3P172532-7

Drain Piping Work

Rig the drain pipe as shown below and take measures against condensation. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.

(1) Carry out the drain piping.

- For drain work, rig the pipes so that they drain reliably.
- The drain pipe outlet direction can be chosen from the right rear, right, left rear, and left. Refer to "REFRIGERANT PIPING WORK" for right rear and right direction, and refer to Fig. 20 for left rear and left direction.

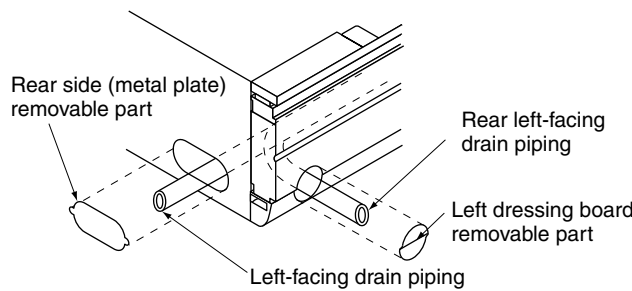


Fig. 20

- For left drain pipe outlet, remove the rubber plug and the insulation on the drain pipe connecting opening on the left side of the unit and change the position to the right side.
- Insert the rubber stopper securely, all the way to the base, in order to prevent water leakage.
- The diameter of the drain pipe should be greater than or equal to the diameter of the connecting pipe. (Vinyl tube ; pipe size : 20 mm ; outer dimension : 26 mm)
- Keep the drain pipe short and sloping downwards at a gradient of at least 1/100 to prevent air pockets from forming. (Refer to Fig. 21)
- Use the drain hose (1) and the metal clamp (2).
Insert the drain hose into the drain socket, up to the gray tape. (Refer to Fig. 22)
Tighten the metal clamp until the screw head is less than 4 mm from the hose. (Refer to Fig. 23)
(Be careful of the installation direction. Install so that the metal clamp does not contact the intake grill.)
- Wrap the sealing pad (8) (accessory) over the clamp and drain hose to insulate. (Refer to Fig. 23)
- No folding of drain hose inside the indoor unit. (Refer to Fig. 24)
(If there is slack in the drain hose, it may cause damage to the intake grill.)

C : 3P172532-7

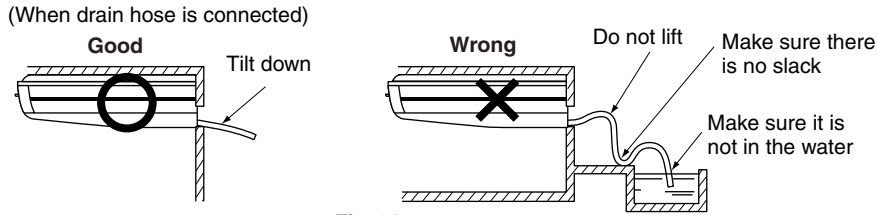


Fig. 21

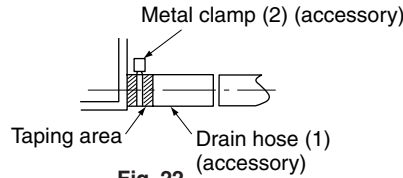


Fig. 22

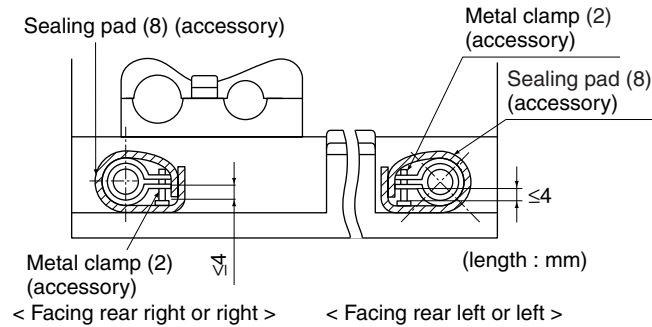
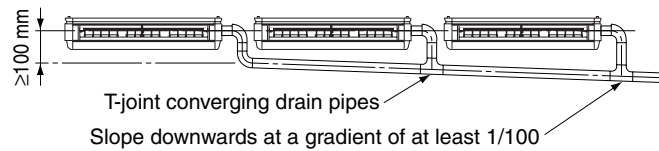


Fig. 23

NOTE

- To ensure no excessive pressure is applied to the included drain hose (1), do not bend or twist when installing. (This may cause leakage.)
- If converging multiple drain pipes, install according to the procedure shown below.



Select converging drain pipes whose gauge is suitable for the operating capacity of the unit.

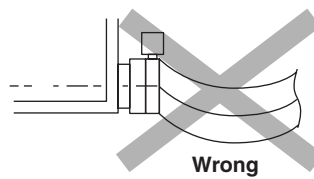


Fig. 24

(2) Confirm that smooth drainage is achieved after the piping work.

- Add 0.6 liter of water in the drain pan from the air outlet for confirming drainage. (Refer to Fig. 25)

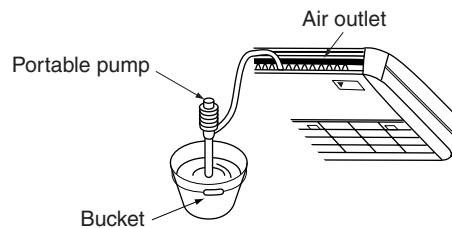


Fig. 25







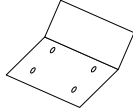


CAUTION



- Drain piping connections
Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.
- Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.

10. Accessories

Standard Accessories

FXHQ32~100MA

Name	(1) Drain hose	(2) Metal clamp	(3) Washer for hanging bracket	(4) Clamp	(5) Paper pattern for installation	Insulation for fitting
Quantity	1 pc.	1 pc.	8 pcs.	6 pcs.	1 pc.	1 each
Shape						(6) For gas pipe  (7) For liquid pipe 

Name	Sealing pad	(Other) • Operation manual • Installation manual
Quantity	1 each	
Shape	(8) Large  (9) Small 	

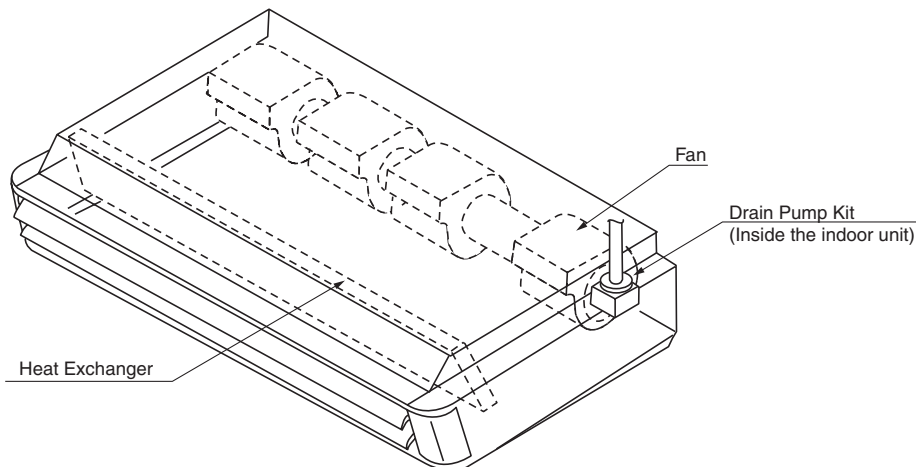
C : 3P172532-7

Optional Accessories (For Unit)

No.	Item	Model	FXHQ32MAVE	FXHQ63MAVE	FXHQ100MAVE
1	Drain pump kit		KDU50M60VE	KDU50M125VE	
2	Replacement long-life filter (Resin net)		KAFJ501D56	KAFJ501D80	KAFJ501D112
3	L-type piping kit (for upward direction)		KHFP5M35	KHFP5M63	

C : 4D040446A

Optional Accessories (For Controls) : Refer to P.645



Drain Pump Kit

Specifications

Items		Model	KDU50M60VE	KDU50M125VE
Drain-up Lift (mm)			600	
Drain Con. Diameter			VP20 (Ex. dia. ϕ 26, Int. dia. ϕ 20)	
Pump	Power Supply	Single phase 220-240V/220V 50Hz (from Indoor Unit PC Board)		
	Power Consumption (W)	20/17 (50Hz)		
Applicable Models			32 class	63 class 100 class

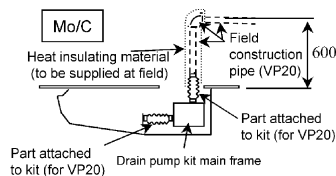
Precaution at use

1. Don't turn off the power within 5 minutes after cooling operation stops.
2. The liquid crystal display blinks to inform us that safety device actuated.
3. When cooling operation's season is over, extract drain water.

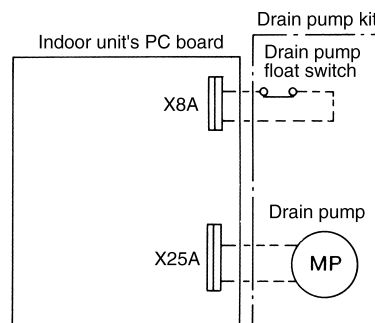
Installation guide of the drain pump kit

<Changes in drain pump kit>

- Exit drain pipe has been changed from VP25 to VP20 (to meet the drain diameter of main frame).
- Attached drain pipe (450 mm chloride vinyl straight pipe bellow, elbow) -> only bellow hose for VP20
- All units of drain up height was unified to 600mm (From the bottom of the ceiling)



Wiring diagram



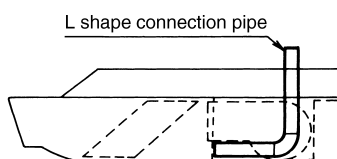
Remove the X8A short circuit connector when the float switch will be connected.

L Shape Connection Pipe Kit

Application purpose

This kit must be bent inside the unit as shown below, when the refrigerant piping is carried out in a ceiling space. This L shape kit is an optional accessory which has been developed for improving the work of the processing on site.

Installation



FXAQ-MA

Wall Mounted Type

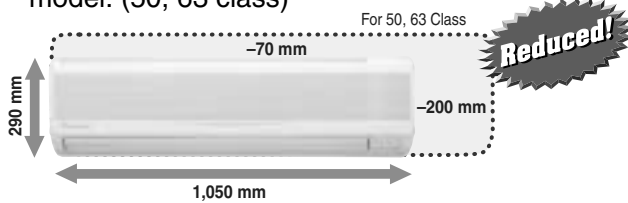
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- 5. Wiring Diagrams.....339
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- 7. Capacity Tables341
 - 7.1 Cooling Capacity341
- 8. Sound Levels342
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- 10. Accessories.....351

1. Features

External Appearance



- Compact and stylish design that does not detract from the decor of the room.
- More compact than compared with previous model. (50, 63 class)



- Drastic 10 kg weight reduction from 24 kg to 14 kg.
- Volume reduced by 22%.
- Space savings of up to 47%.

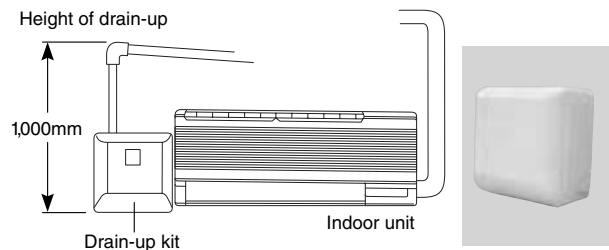
• Low operating sound (220V-240V)(dB(A))

Class	20	25	32	40	50	63
Operating sound (H/L)	35/29	36/29	37/29	39/34	42/36	46/39

- Drain pan and air filter can be kept clean by mildew-proof polystyrene.
- Washable grille, the front grille can be easily removed for washing.
- Auto-swing ensures efficiency of air distribution. The louver closes automatically when the unit stops.
- 5 steps of discharge angle can be set by remote controller.
- Discharge angle is automatically set at the same angle as the previous operation when restarts. (Initial setting; 10° for cooling and 70° for heating)



- Drain-pump kit is available as optional accessory, which lifts the drain 1,000mm from the bottom of the unit.
- Flexible installation.
 - Drain pipe can be fitted to from either left or right sides.



2. Specifications

Wall Mounted Type

Model		FXAQ20MAVE	FXAQ25MAVE	FXAQ32MAVE	
*1 Cooling Capacity (19.5°CWB)	kcal/h	2,000	2,500	3,200	
	Btu/h	7,800	9,900	12,600	
	kW	2.3	2.9	3.7	
*2 Cooling Capacity (19.0°CWB)	kW	2.2	2.8	3.6	
Casing Color		White (3.0Y8.5/0.5)	White (3.0Y8.5/0.5)	White (3.0Y8.5/0.5)	
Dimensions: (HxWxD)		mm 290x795x230	290x795x230	290x795x230	
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm 2x14x1.4	2x14x1.4	2x14x1.4	
	Face Area	m ² 0.161	0.161	0.161	
Fan	Model	QCL9661M	QCL9661M	QCL9661M	
	Type	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan	
	Motor Output x Number of Units	W 40x1	40x1	40x1	
	Air Flow Rate (H/L)	m ³ /min	7.5/4.5	8/5	9/5.5
		cfm	265/159	282/177	318/194
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		Foamed Polystyrene / Foamed Polyethylene	Foamed Polystyrene / Foamed Polyethylene	Foamed Polystyrene / Foamed Polyethylene	
Air Filter		Resin Net (Washable)	Resin Net (Washable)	Resin Net (Washable)	
Piping Connections	Liquid Pipes	mm ϕ 6.4 (Flare Connection)	ϕ 6.4 (Flare Connection)	ϕ 6.4 (Flare Connection)	
	Gas Pipes	mm ϕ 12.7 (Flare Connection)	ϕ 12.7 (Flare Connection)	ϕ 12.7 (Flare Connection)	
	Drain Pipe	mm VP13 (External Dia. 18 Internal Dia. 13)	VP13 (External Dia. 18 Internal Dia. 13)	VP13 (External Dia. 18 Internal Dia. 13)	
Machine Weight (Mass)	kg	11	11	11	
*4 Sound Level (H/L) (220-240V)	dBA	35/29	36/29	37/29	
Safety Devices		Fuse	Fuse	Fuse	
Refrigerant Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	
Connectable Outdoor Unit		R-410A PA Series	R-410A PA Series	R-410A PA Series	
Standard Accessories		Operation Manual. Installation Manual. Installation Panel. Paper Pattern for Installation. Insulation Tape. Clamps. Screws.	Operation Manual. Installation Manual. Installation Panel. Paper Pattern for Installation. Insulation Tape. Clamps. Screws.	Operation Manual. Installation Manual. Installation Panel. Paper Pattern for Installation. Insulation Tape. Clamps. Screws.	
Drawing No.		C : 3D039370B			

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- *4 Anechoic chamber conversion value, measured at a point 1 m in front of the unit and 1 m downward. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- 5 Refer to page 340 for Fan Motor Input.

Conversion Formulae
kcal/h=kWx860
Btu/h=kWx3412
cfm=m ³ /minx35.3

Wall Mounted Type

Model		FXAQ40MAVE	FXAQ50MAVE	FXAQ63MAVE	
*1 Cooling Capacity (19.5°CWB)	kcal/h	4,000	5,000	6,300	
	Btu/h	16,000	19,800	24,900	
	kW	4.7	5.8	7.3	
*2 Cooling Capacity (19.0°CWB)	kW	4.5	5.6	7.1	
Casing Color		White (3.0Y8.5/0.5)	White (3.0Y8.5/0.5)	White (3.0Y8.5/0.5)	
Dimensions: (HxWxD)		mm 290x1,050x230	290x1,050x230	290x1,050x230	
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm 2x14x1.4	2x14x1.4	2x14x1.4	
	Face Area	m ² 0.213	0.213	0.213	
Fan	Model	QCL9686M	QCL9686M	QCL9686M	
	Type	Cross Flow Fan	Cross Flow Fan	Cross Flow Fan	
	Motor Output x Number of Units	W 43x1	43x1	43x1	
	Air Flow Rate (H/L)	m ³ /min	12/9	15/12	19/14
		cfm	424/318	530/424	671/494
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		Foamed Polystyrene / Foamed Polyethylene	Foamed Polystyrene / Foamed Polyethylene	Foamed Polystyrene / Foamed Polyethylene	
Air Filter		Resin Net (Washable)	Resin Net (Washable)	Resin Net (Washable)	
Piping Connections	Liquid Pipes	mm ϕ 6.4 (Flare Connection)	ϕ 6.4 (Flare Connection)	ϕ 9.5 (Flare Connection)	
	Gas Pipes	mm ϕ 12.7 (Flare Connection)	ϕ 12.7 (Flare Connection)	ϕ 15.9 (Flare Connection)	
	Drain Pipe	mm VP13 (External Dia. 18 Internal Dia. 13)	VP13 (External Dia. 18 Internal Dia. 13)	VP13 (External Dia. 18 Internal Dia. 13)	
Machine Weight (Mass)	kg	14	14	14	
*4 Sound Level (H/L) (220-240V)	dBA	39/34	42/36	46/39	
Safety Devices		Fuse	Fuse	Fuse	
Refrigerant Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	
Connectable Outdoor Unit		R-410A PA Series	R-410A PA Series	R-410A PA Series	
Standard Accessories		Operation Manual. Installation Manual. Installation Panel. Paper Pattern for Installation. Insulation Tape. Clamps. Screws.	Operation Manual. Installation Manual. Installation Panel. Paper Pattern for Installation. Insulation Tape. Clamps. Screws.	Operation Manual. Installation Manual. Installation Panel. Paper Pattern for Installation. Insulation Tape. Clamps. Screws.	
Drawing No.		C : 3D039370B			

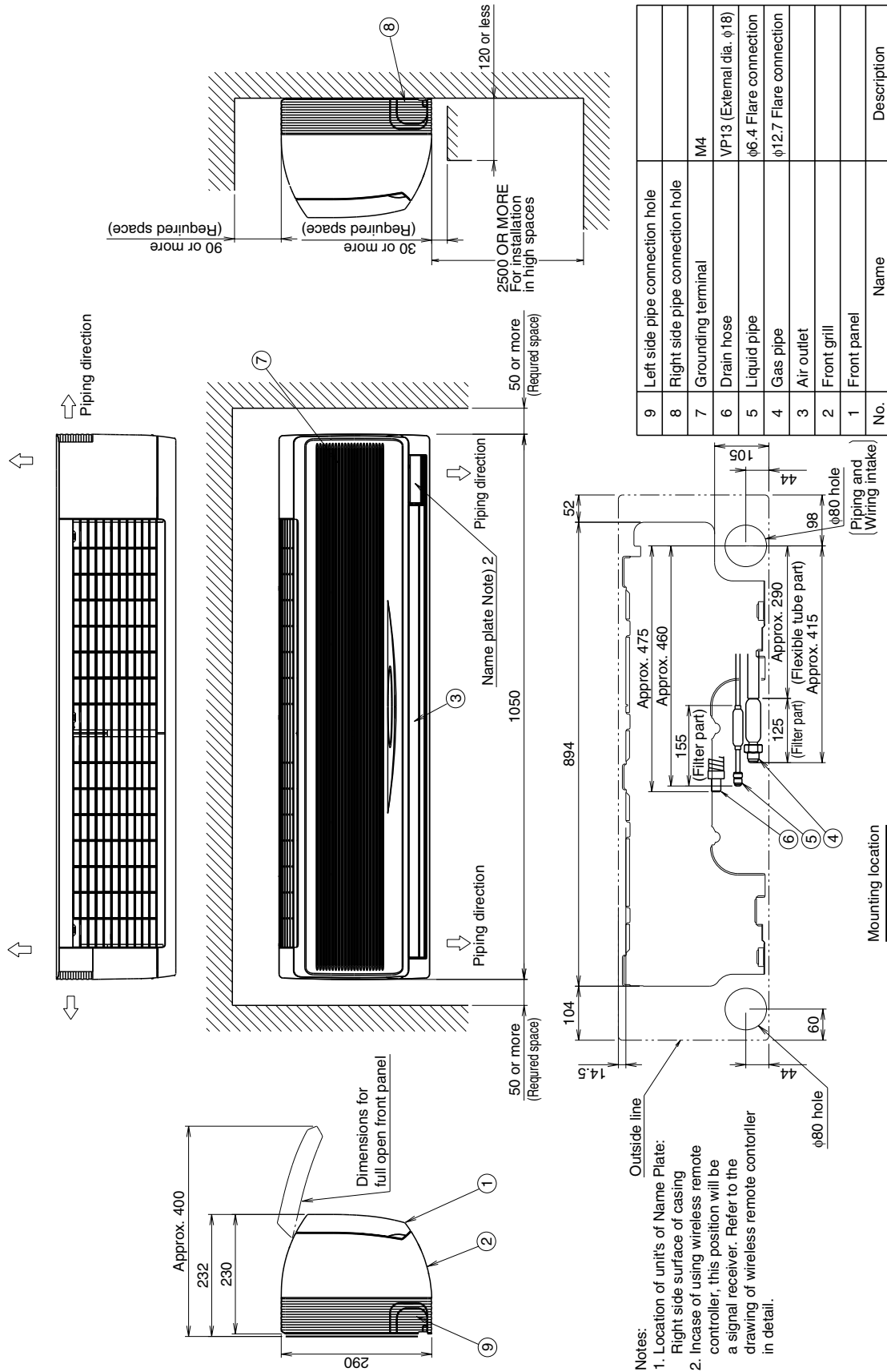
Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- *4 Anechoic chamber conversion value, measured at a point 1 m in front of the unit and 1 m downward. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- 5 Refer to page 340 for Fan Motor Input.

Conversion Formulae
kcal/h=kWx860
Btu/h=kWx3412
cfm=m ³ /minx35.3

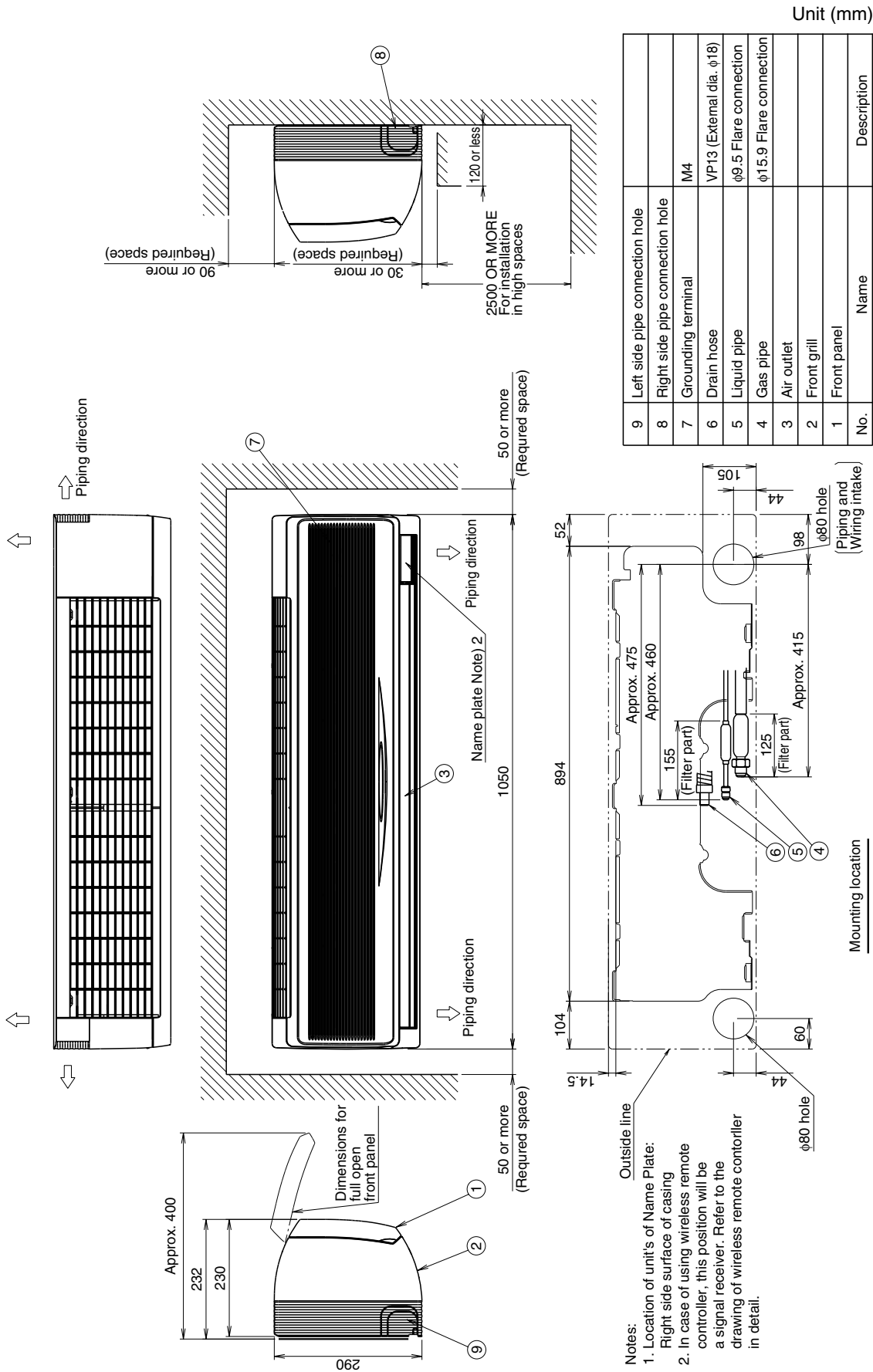
FXAQ40MA
FXAQ50MA

Unit (mm)



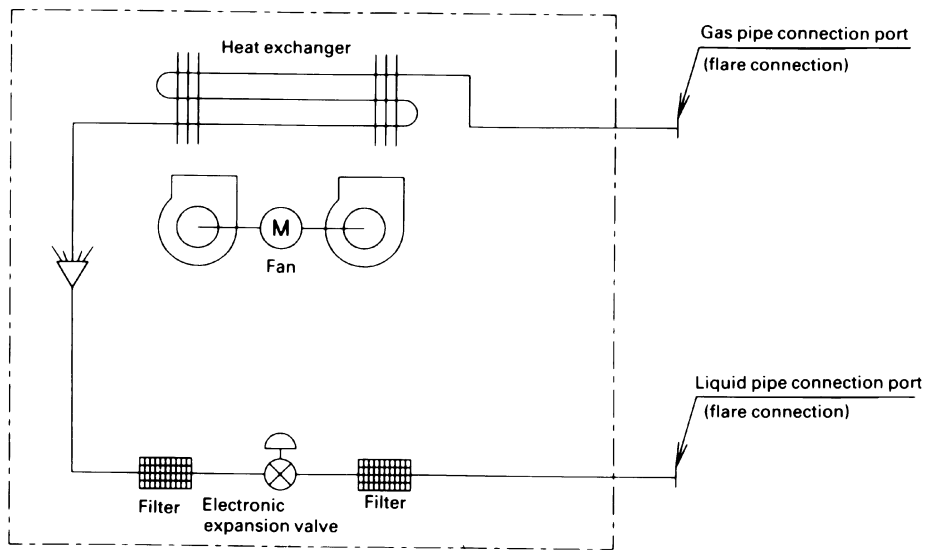
3D038539B

FXAQ63MA



3D038541B

4. Piping Diagrams



JC : DU220-602J

■ Refrigerant pipe connection port diameters

Model	(mm)	
	Gas	Liquid
FXAQ20 · 25 · 32 · 40 · 50MA	φ12.7	φ6.4
FXAQ63MA	φ15.9	φ9.5

6. Electric Characteristics

Model	Type	Units			Power supply		IFM		Input(W)	
		Hz	Volts	Voltage range	MCA	MFA	kW	FLA	Cooling	Heating
FXAQ20MA	VE	50	220-240	MAX. 264 Min. 198	0.3	15	0.040	0.2	16	24
FXAQ25MA					0.4	15	0.040	0.3	22	27
FXAQ32MA					0.4	15	0.040	0.3	27	32
FXAQ40MA	VE				0.4	15	0.043	0.3	20	20
FXAQ50MA					0.4	15	0.043	0.3	27	32
FXAQ63MA					0.6	15	0.043	0.5	50	60

Symbols :

MCA : Min. Circuit Amps (A)
 MFA : Max. Fuse Amps (See note 5)
 kW : Fan Motor Rated Output(kW)
 FLA : Full Load Amps(A)
 IFM : Indoor Fan Motor

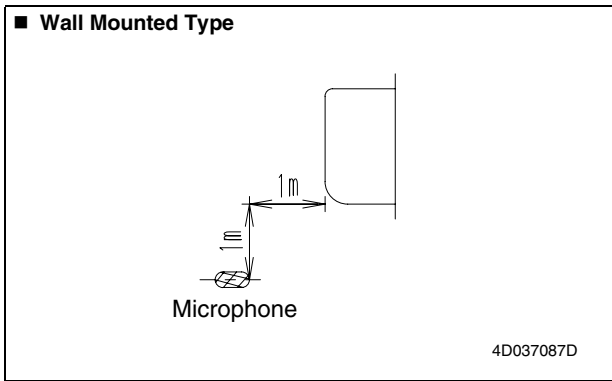
Note :

- Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits,
- Maximum allowable voltage unbalance between phases is 2%.
- MCA/MFA
 $MCA = 1.25 \times FLA$
 $MFA \leq 4 \times FLA$
 (Next lower standard fuse rating. Min.15A)
- Select wire size based on the MCA.
- Instead of fuse, use Circuit Breaker.

C : 4D034907E

8. Sound Levels

Overall



Note:

1. The operating conditions are assumed to be standard (JIS conditions).
2. These operating values were obtained in a dead room (conversion values).
Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

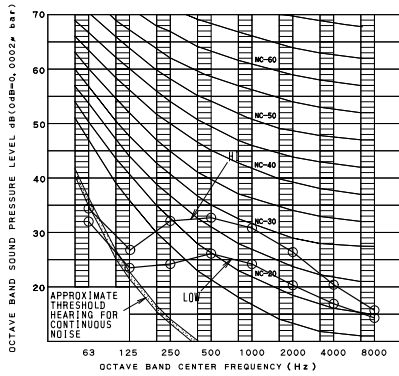
dBA

Model	220~240V 50Hz	
	H	L
FXAQ20MA	35	29
FXAQ25MA	36	29
FXAQ32MA	37	29
FXAQ40MA	39	34
FXAQ50MA	42	36
FXAQ63MA	46	39

Octave Band Level

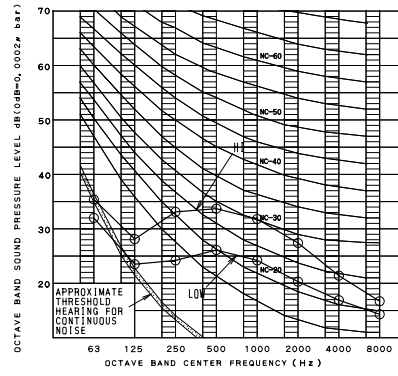
○ — ○ 220~240V 50Hz

FXAQ20MAVE



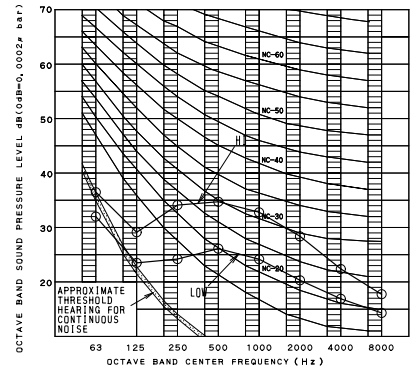
4D037087D

FXAQ25MAVE



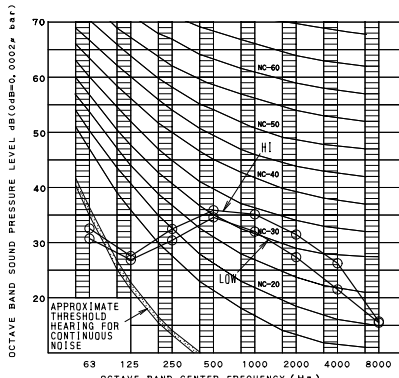
4D037088D

FXAQ32MAVE



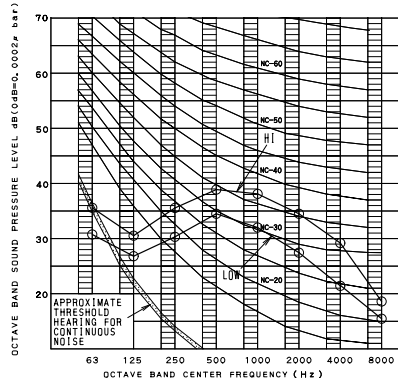
4D037089D

FXAQ40MAVE



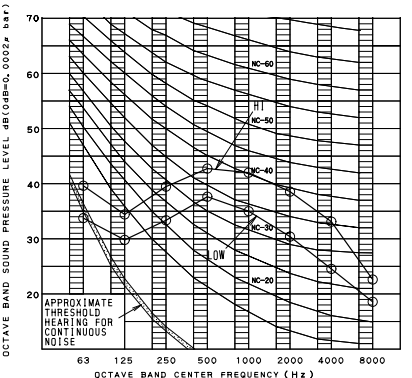
4D038513A

FXAQ50MAVE



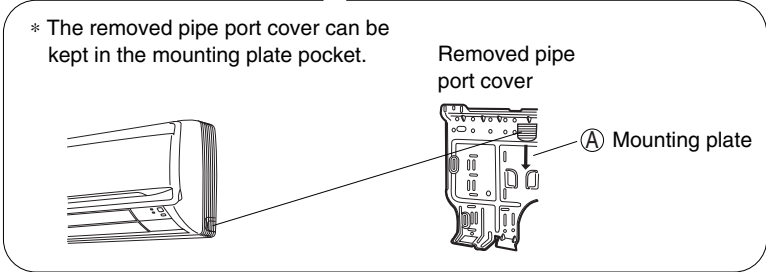
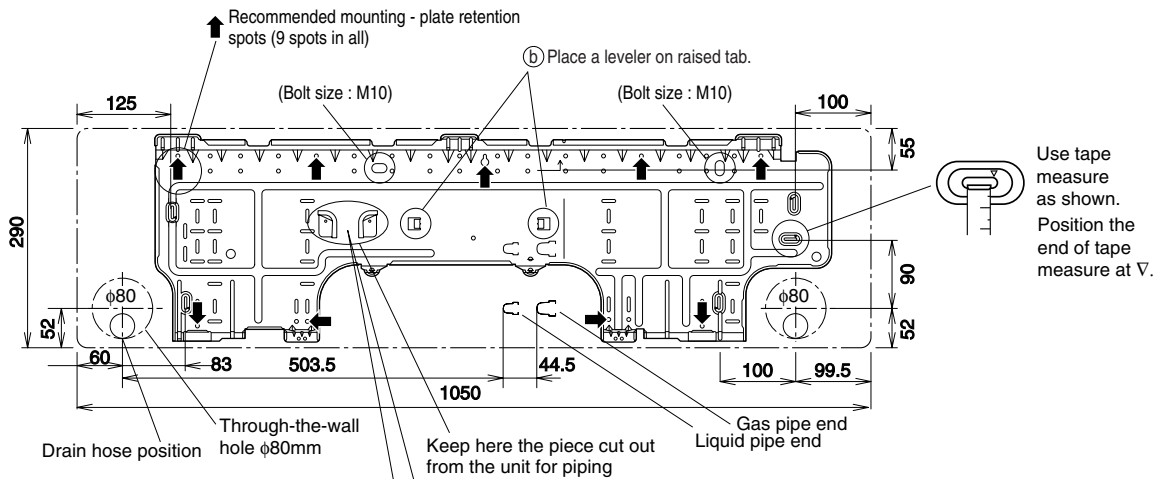
4D038514A

FXAQ63MAVE



4D038515A

40 · 50 · 63 class



C : 2P095003-1C

Service Space

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

- In the upper space (including the back of the ceiling) of the indoor unit where there is no possible dripping of water from the refrigerant pipe, drain pipe, water pipe, etc.
- Where the wall is strong enough to bear the indoor unit weight.
- Where sufficient clearance for installation and maintenance can be ensured.

(Refer to Fig. 1 and Fig. 2)

- Where optimum air distribution can be ensured.
- Where nothing blocks the air passage.
- Where condensate can be properly drained.
- Where the wall is not significantly tilted.
- Where not exposed to combustible gases.
- Where pipe between indoor and outdoor units is possible within the allowable limit.
(Refer to the installation manual of the outdoor unit.)
- Install the indoor and outdoor units, power cable and transmission wiring, at least 1 m from TVs and radios, to prevent distorted pictures and static. (Depending on the type and source of the electrical waves, static may be heard even when more than 1 m away.)
- Install the indoor unit no less than 2.5 m above the floor. Where unavoidably lower, take what measures are necessary to keep hands out of the air inlet.
- Where the cool (warm) air reaches all across the room.

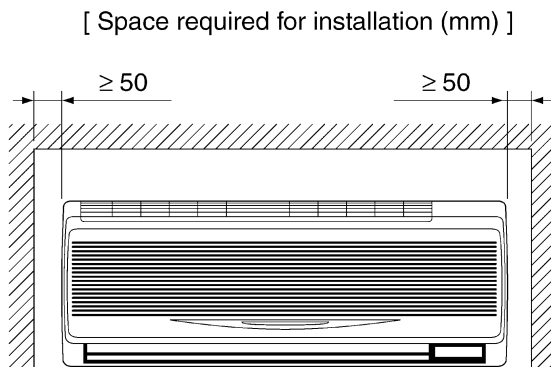


Fig. 1

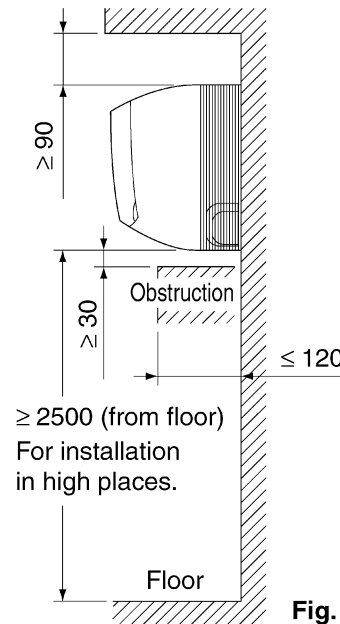


Fig. 2

- (2) Consider whether the place where the unit will be installed can support the full weight of the unit, and reinforce it with boards and beams, etc. if needed before proceeding with the installation. Also, reinforce the place to prevent vibration and noise before installing. (The installation pitch can be found on the paper pattern for installation (3), so refer to it when considering the necessity for reinforcing the location.)**
- (3) The indoor unit may not be directly installed on the wall. Use the attached installation panel (1) before installing the unit.**

C : 3P156215-6D

Installation

(1) Open the piping through-hole.

- The refrigerant pipe and drain pipe can be passed out in one of 6 directions: left, bottom-left, back-left, right, bottom-right, and back-right. **(Refer to Fig. 3)**
- Using the paper pattern for installation (3), choose where to pass the piping out and open a through-hole ($\phi 80$) in the wall.
Open the hole so that there is a downward slope for the drain piping. (See "DRAIN PIPING WORK")

(2) Remove the installation panel (1) from the unit and attach to the wall.

(The installation panel is temporarily attached to the unit with screw. (In case of 20-32 type))

(Refer to Fig. 3)

- Check the location for the hole using the included paper pattern for installation (3).
 - Choose a location so that there is at least a 90 mm gap between the ceiling and the main unit.
- Temporarily attach the installation panel (1) at the temporary-securing position on the paper pattern for installation (3) and use a level to make sure the drain hose is either level or tilted slightly downward.
- Secure the installation panel (1) to the wall using either screws or bolts.
 - If using the attachment screws for the installation panel (2), attach using at least 4 screws on either side (for a total of 8 screws (20-32 type), 9 screws (40-63 type)) of the recommended installation cleat position on the included paper pattern for installation (3).
 - If using bolts, attach using a M8 - M10 bolt (for a total of 2 bolts) on either side.
 - If dealing with concrete, use commercially available foundation bolts (M8 - M10).

(3) If using the left, bottom-left, right, or bottom-right positions for the piping, cut out the through-hole for the piping in the front grill. (Refer to Fig. 4)

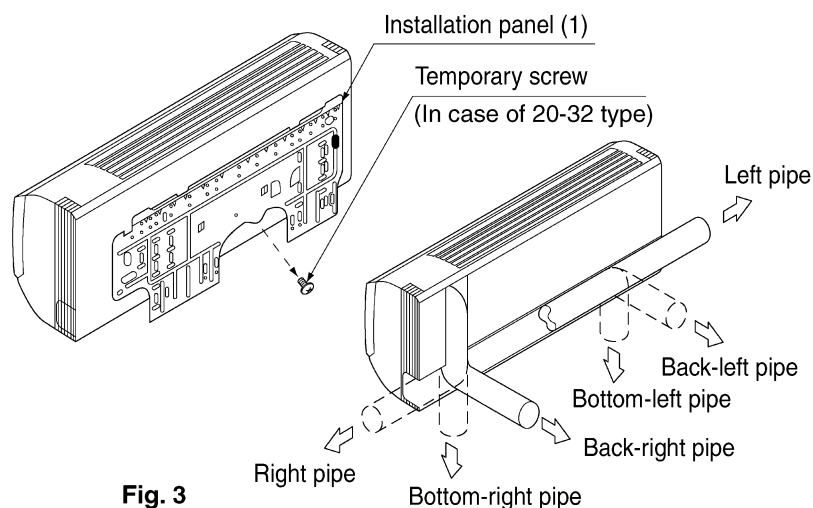


Fig. 3

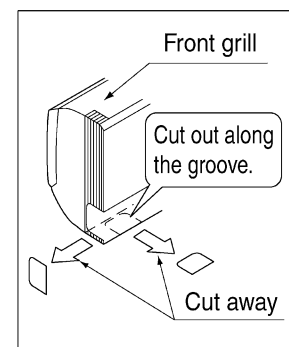


Fig. 4

(4) Remove the front panel and the service lid. (Refer to Fig. 5)

< How to remove the front panel and service lid >

- Open the front panel to the point where it stops.
- Push the axes on either side of the front panel towards the center of the main unit and remove. (You can also remove it by sliding the front panel either to the left or right and pulling it forward.)
- Remove the screw from the service lid and pull the handle forward.

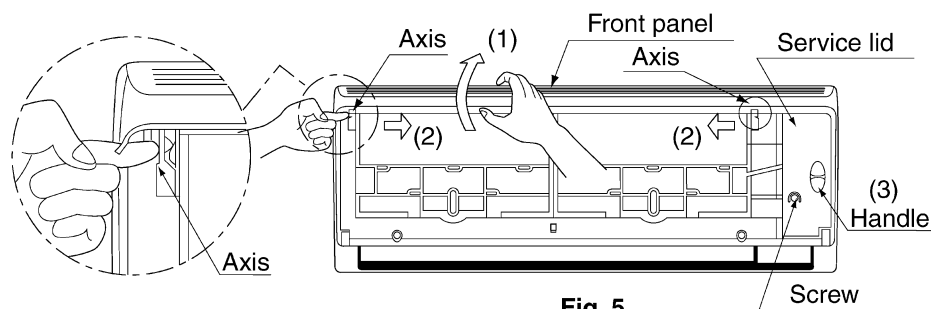


Fig. 5

C : 3P156215-6D

(5) Point the pipe in the direction it will be passed out.

For right, bottom-right, and back-right piping (Refer to Fig. 6)

- Wrap the drain hose and the refrigerant piping together with the insulating tape (4) so that the drain hose is below the refrigerant piping.

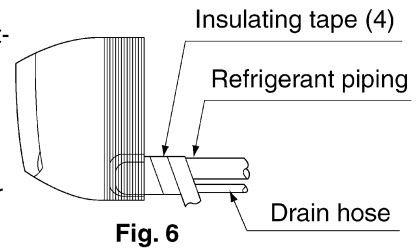


Fig. 6

For left, bottom-left, and left-back piping

- Remove the front grill. (Refer to Fig. 7)

< How to remove the front grill >

Remove the front grill as described below when securing the indoor unit with screws or when attaching Optional Accessories (wireless remote controller, adapter PC board, etc.).

- (1) Remove the front panel.
- (2) Remove the screws (2 places in case of FXA(Q)20,25,32 type/3 places in case of FXA(Q)40,50,63 type) securing the front grill.
- (3) Remove the tabs (3 places) securing the front grill by pushing them in the direction of the arrows.
- (4) Making sure not to catch the horizontal flaps, remove the front grill by pulling in the direction of the arrow.

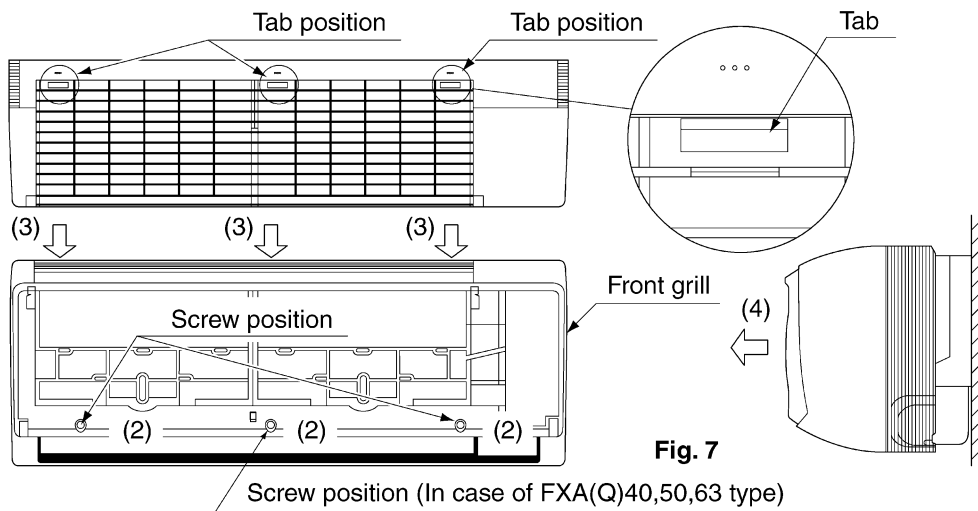


Fig. 7

- Remove the drain plug, the insulation tubing, and the drain hose from the drain pan and replace. (Refer to Fig. 8)
- Connect the local refrigerant piping ahead of time, matching it to the liquid pipe and gas pipe marks engraved on the installation panel (1).

< Replacing the drain hose and drain plug >

- (1) Remove the drain plug and insulation tubing.
- (2) Remove the drain hose and replace onto the left side.
- (3) Replace the drain plug and the insulation tubing onto the right side.

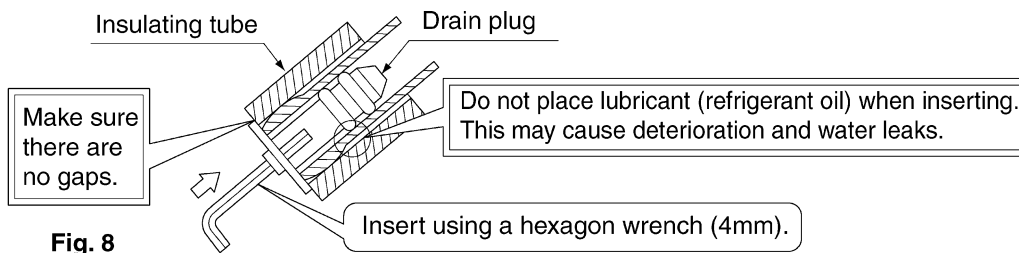


Fig. 8

C : 3P156215-6D

(6) Hook the indoor unit onto the installation panel. (Refer to Fig. 9)

- Placing buffering material between the wall and the indoor unit at this time will make work easier.

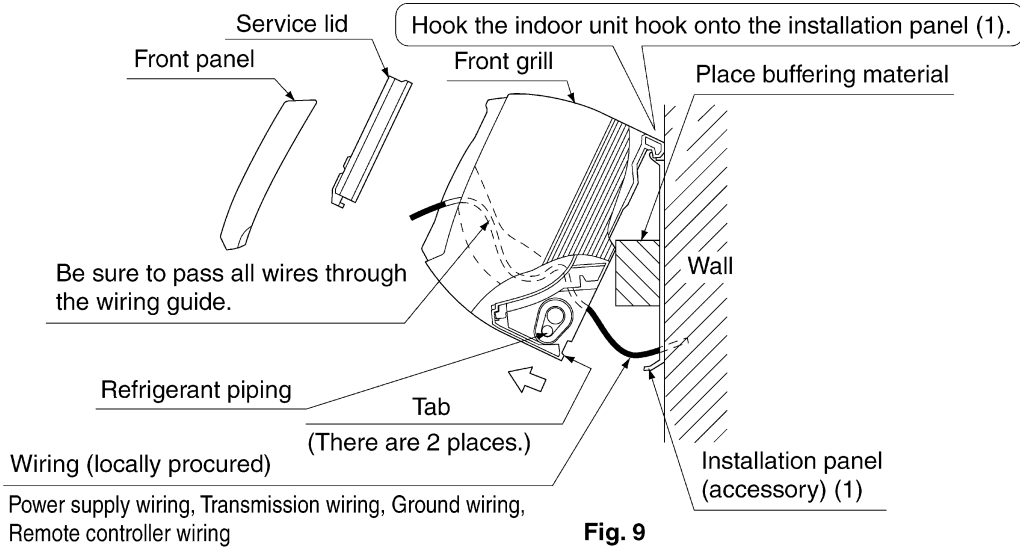


Fig. 9

For right, bottom-right, and back-right piping

- Pass the drain hose and the refrigerant piping to the wall.

(7) Pass power supply wiring, transmission wiring, ground wiring, and remote controller wiring through the wiring guide in through the back of the indoor unit and to the front.

(8) Connect the piping. (See Fig. 10)

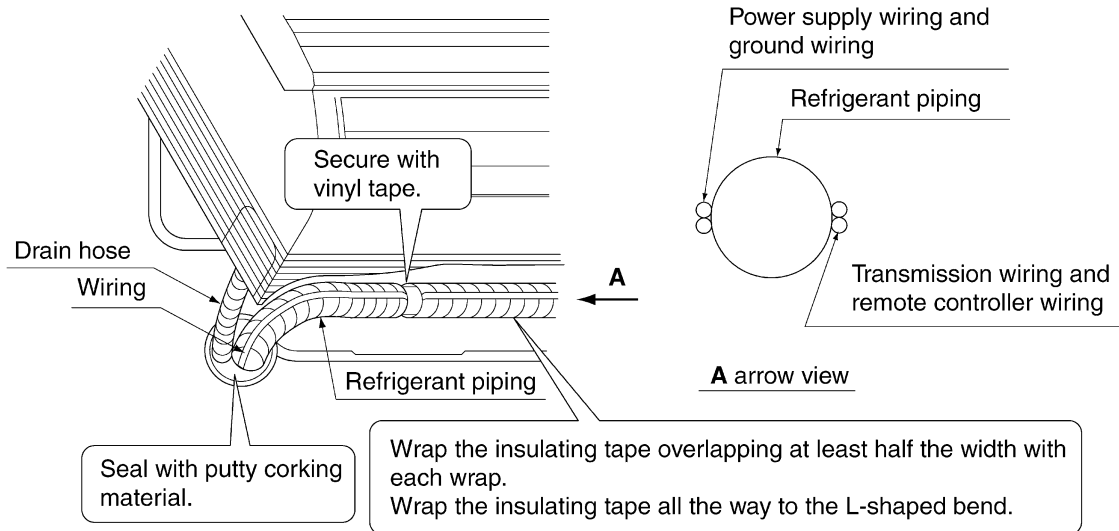


Fig. 10

- To avoid the influence of noise from the power supply line on the transmission wiring and the remote controller wiring, these wirings must be kept as far as possible from the power/ground wirings. As shown in the figure, keep the power supply wiring and the ground wiring together. Keep the transmission and remote controller wirings together and route them maintaining a good distance from the power supply/ground wirings (that is, on the other side of the power supply/ground wirings). Then, fix them securely on the refrigerant pipe.
- Seal the piping through-hole with putty corking material.

(9) Push on both bottom edges of the indoor unit using both hands and hook the tab on the back of the indoor unit onto the installation panel (1). (Refer to Fig. 9)

- At this time remove the buffering material placed in step (6).

C : 3P156215-6D

- Make sure power supply wiring, transmission wiring, ground wiring and remote controller wiring are not caught inside the indoor unit.

■ **When screwing in the indoor unit**

- Remove the front grill. (Refer to Fig. 7)
- Secure the indoor unit to the installation panel (1) with the securing screws (6). (Refer to Fig. 11)

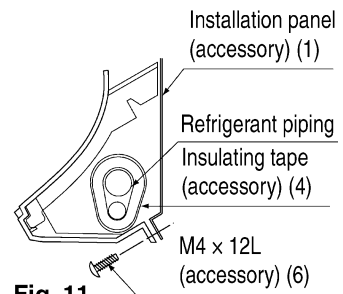


Fig. 11

C : 3P156215-6D

Drain Piping Work

(1) Install the drain piping. (Refer to Fig. 16)

- The drain pipe should be short with a downward slope and should prevent air pockets from forming.
- Watch out for the points in the figure 16 when performing drain work.

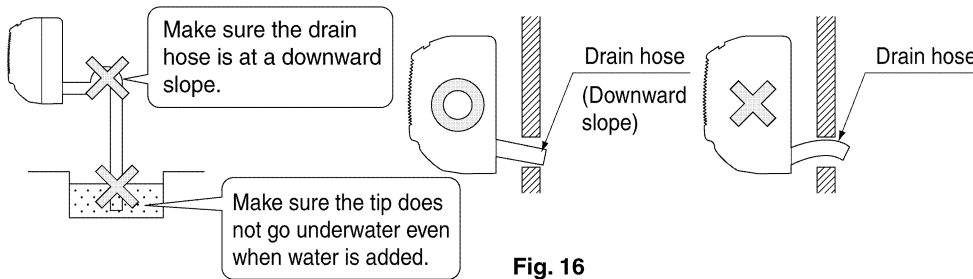


Fig. 16

- When extending the drain hose, use a commercially available drain extension hose, and be sure to insulate the extended section of the drain hose which is indoors. (Refer to Fig. 17)

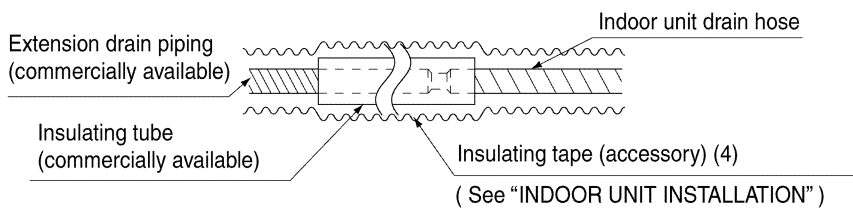


Fig. 17

- Make sure the diameter of the piping is the same as the piping (hard vinyl chloride, nominal diameter 13mm) or bigger.
- When directly connecting a hard vinyl chloride pipe joint (nominal diameter 13mm) to the drain hose connected to the indoor unit (i.e. for embedded piping, etc.), use a commercially available hard vinyl chloride pipe joint (nominal diameter 13mm). (Refer to Fig. 18)

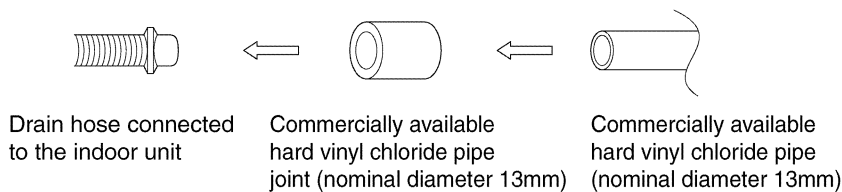


Fig. 18

(2) Make sure the drain works properly.

- After drain work is complete, perform a drain check by opening the front panel, **removing the air filter**, pouring water into the drain pan, and making sure water flows smoothly out of the drain hose. (Refer to Fig. 19)

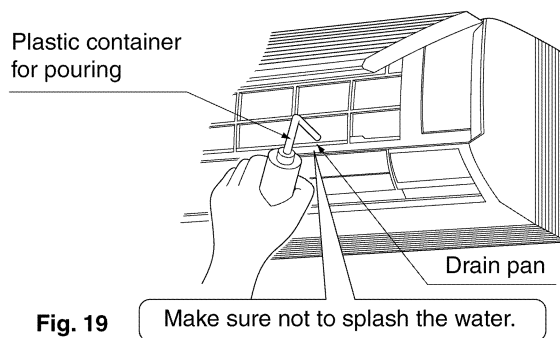


Fig. 19

CAUTION

Drain piping connections

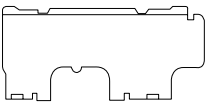

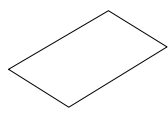
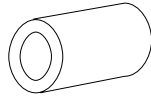
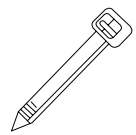
Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.


Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.

10. Accessories

Standard Accessories

FXAQ20-63MA

Name	(1) Installation panel	(2) Attachment screws for the installation panel	(3) Paper pattern for installation	(4) Insulating tape	(5) Clamp
Quantity	1 set	8 pcs. → FXA(Q)20,25,32 type 9 pcs. → FXA(Q)40,50,63 type	1 pc.	1 pc.	1 large 3 small
Shape		 M4 × 25L			

Name	(6) Securing screws	(Other) • Operation manual • Installation manual
Quantity	2 pcs.	
Shape	 M4 × 12L	

C : 3P156215-6D

Optional Accessories (For Unit)

No.	Item	Type	FXAQ20MA	FXAQ25MA	FXAQ32MA	FXAQ40MA	FXAQ50MA	FXAQ63MA
1	Drain pump kit		K-KDU572EVE					

Optional Accessories (For Controls) : Refer to P.645

Drain Pump Kit — K-KDU572EVE (Supplying goods to order)

Operating sound as small as 25dB

Features

1. Silent operation with no sign of pump operation
2. Design matching with wall mounted type air conditioner
3. Can be interlocked with air conditioner.



Usage

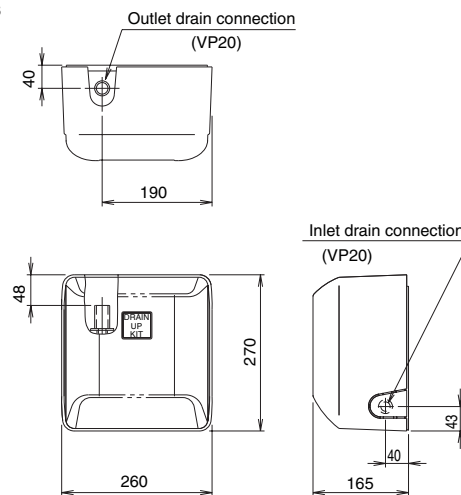
- Home, office, and store
- Optimum for redesign

Caution :

- Drain pump kit is only for the air conditioner. Please use it for the drain treatment of the air conditioner.
- Be sure to lay the piping inclined down after drain-up, which is different from drain pump.
- Please do not use it in the place where soot such as kitchens is shrouded and the place where an organic solvent drifts.

Dimensions

Unit : mm

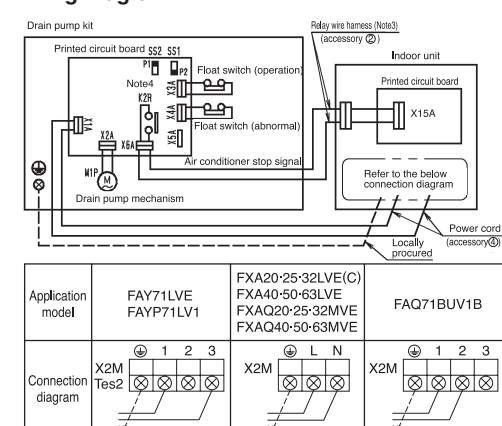


Specification

	K-KDU572EVE
Drain pump head (mm) (Note 1)	1,000
Power supply	Single phase 220-240V/220V, 50/60Hz
Power consumption	14.1/12.9 (W)
Operating current	0.18/0.16 (A)
Insulation	Class E
Drain inlet connection pipe diameter	VP20 (Note 2)
Drain exit connection pipe diameter	VP20
Safety device	Float switch
Operating sound (dB)	25
Machine weight (Mass)(kg)	3.2
Drain exhaust flow rate (ml/min)	400

Note : 1. Height from bottom of drain pump kit up to the drain pipe.
2. Connect to the VP13 using the soft reducing socket.

Wiring Diagram



Application model

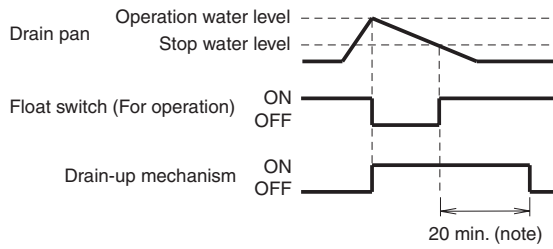
Application model	FAY71LVE FAYP71LV1	FXA20-25-32LVE(C) FXA40-50-63LVE FXAQ20-25-32MVE FXAQ40-50-63MVE	FAQ71BUB1B
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Connection diagram	X2M Tes2	X2M	X2M
--------------------	-------------	-----	-----

- The earth wire (copper) should be at least 2.0mm² or φ 1.6mm. When the relay wire harness is connected, remove the X15A short-circuit connector.
1. Don't forget to turn on the power. If it is not turned on, the air conditioner will perform an error stop and operation will not be possible.
 2. Make sure that slide switch SS1 on the drain pump kit printed circuit board assembly is set to P2 and slide switch SS2 is set to P1.
 3. The relay wire harness cannot be extended.
 4. Turning on the power will close the K2R connector, making is a non-volt B connector.

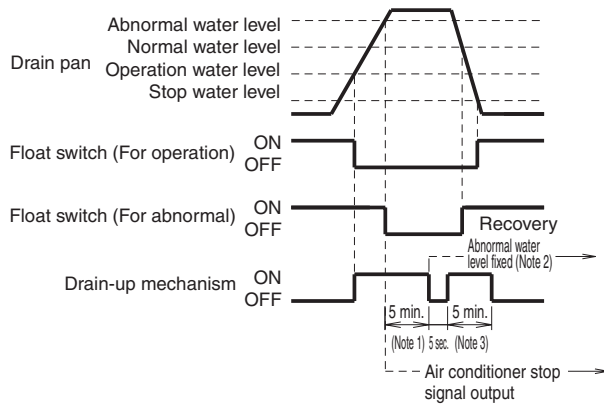
Description of operation

1: Operation at normal water level (Air conditioner operates when water level is at operation level, and when water level is at stop level, residual operation is performed.)



2: Operation at abnormal water level

(When water level is abnormal, the air conditioner stops. When abnormal water level is kept five minutes or longer, abnormal water level is established, and residual operation is performed.)



Note 1) When the float switch (for abnormal water level) is reset within five minutes, the air conditioner operates again with "normal water level".

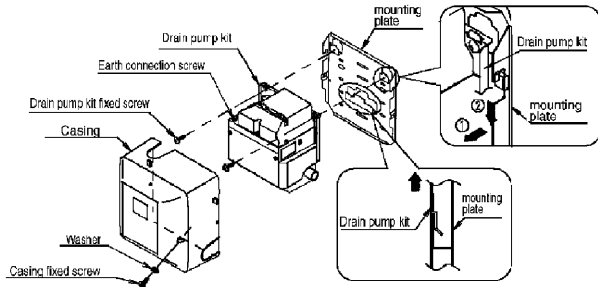
Note 2) When abnormal water level is fixed, power must be turned on again for operating again.

Note 3) When the cycle of operation 5 minutes - stop 5 seconds - operation 5 minutes is finished, if the float switch (for abnormal water level) is not reset, keep operation of drain pump until the switch is reset.

1 Pre-installation preparations ● See the indoor unit's installation manual for indoor unit work.

Drain pump kit preparations

- Remove the casing and the drain pump kit from the mounting plate.
- 1. Remove the casing fixed screw and pull the casing down and forward.
- 2. Remove 2 Screws of the drain pump kit and lift the drain pump kit out.



2 Indoor unit preparations ● Make sure the indoor unit is installed first.

1. Attaching of the indoor unit mounting plate
After installing the mounting plate following the directions in the indoor unit, make sure it is plainness using a level.

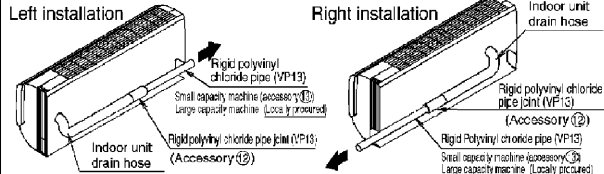
2. Decide the left and the right piping extraction direction and cut off the exit hole for the piping on the bottom frame by the cutter etc.

3. Connecting the drain hose
In the case of a left installation

1. Connect the rigid polyvinyl chloride pipe joint (accessory 12) to the indoor unit drain hose using adhesive.
2. Connect the rigid polyvinyl chloride pipe (accessory 13) for small capacity machine. Local procurement for the large capacity) to the rigid polyvinyl chloride pipe joint (accessory 12) using adhesive.

- In the case of a right installation**

1. Remove the drain hose connected to the indoor unit and replace with a drain plug and insulation tube.
2. The drain hose removed from the indoor unit is attached to left side.
3. Connect the rigid polyvinyl chloride pipe joint (accessory 12) to the indoor unit drain hose using adhesive.
4. Connect the rigid polyvinyl chloride pipe (accessory 13) for small capacity machine. Local procurement for the large capacity) to the rigid polyvinyl chloride pipe joint (accessory 12) using adhesive.



Replacing the drain plug

1. Remove the drain plug and the insulation tube.
2. Remove the standard drain hose. (The standard drain hose is not used to connect the drain pump kit.)
3. Replace the drain plug and the insulation tube onto the right side.

● Replacing the drain plug

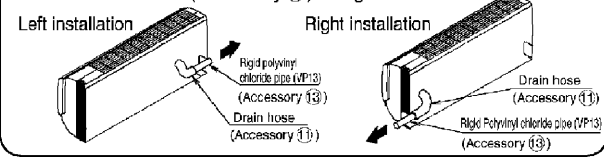
Do not apply lubricating (refrigerant machine oil) when inserting. This may cause deterioration and water leaks.

Insert a hexagon wrench (4mm).

Make sure there are no gaps.

When using the drain hose (accessory 11)

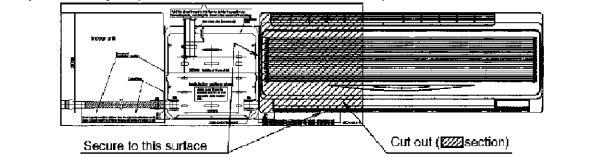
1. Remove the indoor unit drain hose and attach the drain hose (accessory 11).
2. Connect the rigid polyvinyl chloride pipe (accessory 13) to the drain hose (accessory 11) using adhesive.



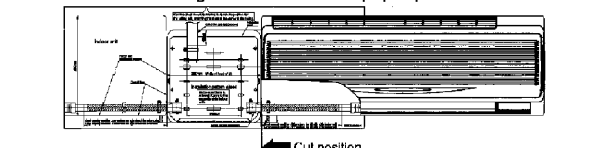
3 Installing the mounting plate

1. Install the indoor unit.

2. Cut out the indoor unit section from the paper pattern for installation (accessory 18) and attach to the installation position on the indoor unit.



3. Cut the rigid polyvinyl chloride pipe (accessory 13) attached to the indoor unit to the length indicated on the paper pattern for installation.

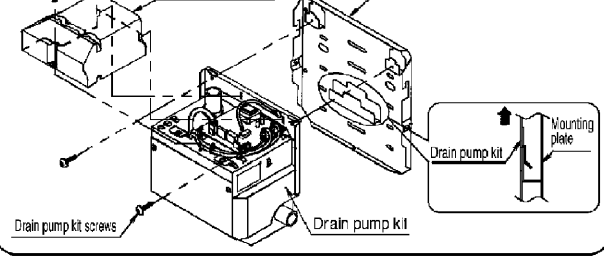


4. Determine the position to secure the mounting plate for the drain pump kit by matching to the paper pattern for installation. Remove the paper pattern for install once this is done.

- If using screws (accessory 16), fix it at least 4 positions.
- For concrete, attach it using commercially available anchors (M8) and bolts.

5. Attach the drain pump kit to the mounting plate and squeeze in the fixed screws.

6. Remove the circuit board cover.



4 Attaching the relay wire harness, the connection harness, and the power cord.

Caution Only connect after shutting off the power.
 < Precautions when laying power and earth wiring >

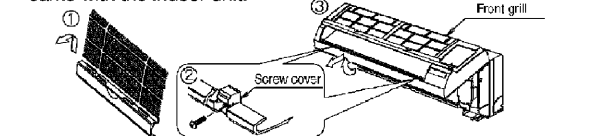
- Use ring type crimp style terminals for connections to the inter-unit wiring terminal block and the earth wiring. When none are available, follow the instructions below.
- Do not connect wiring of different thicknesses to the inter-unit wiring terminal block. (Looseness in the terminal may cause abnormal heat.)
- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal board.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will strip the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.
- See the table at right for tightening torque for the terminal screws.

	Tightening torque(N·m)
Inter-unit wiring terminal block	1.18 - 1.44
earth terminal	1.44 - 1.94

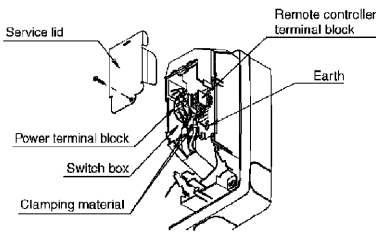
For the FXYA71LV, FAYP71LV1, FXA20·25·32LVE(C)
 FXYA40·50·63LVE, FXAQ20·25·32·40·50·63MVE

- Connect the relay wire harness (accessory 2) and the power cord (accessory 4) to the indoor unit.

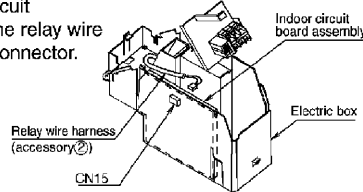
1. Remove the front grill according to the instruction manual that came with the indoor unit.



2. Remove the service lid.

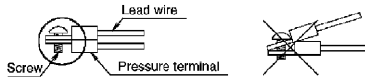


3. Remove the indoor circuit board assembly CN15 short-circuit connector and connect the relay wire harness (accessory 2) connector.

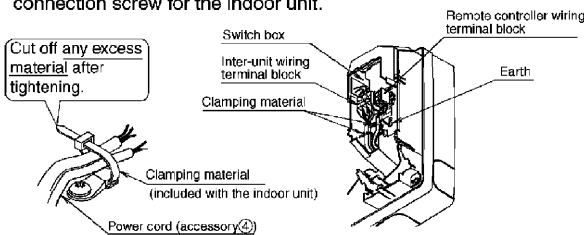


4. Connect the power cord (accessory 4) to the indoor unit inter-unit wiring terminal block.

● When connecting the terminal to the inter-unit wiring terminal block, make sure it is attached properly, as shown below. If the pressure terminals are mistakenly attached in the same direction, the surface of the terminal that is touching will be reduced, causing heat and perhaps burn damage.



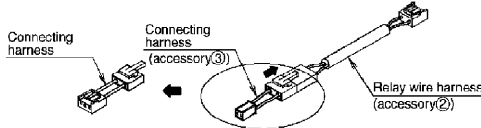
5. Connect the earth wire (locally procured-copper wire at least 2mm²) between the unit and the drain up kit with the earth connection screw for the indoor unit.



For the FAQ71BUV1B

● Connect the relay wire harness (accessory 2), the connecting harness (accessory 3), and the power cord (accessory 4) to the indoor unit.

1. Remove the connecting harness on the relay wire harness (accessory 2) and connect the included connecting harness (accessory 3).



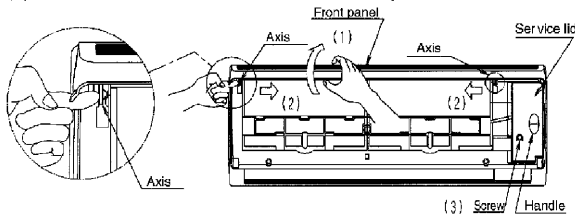
2. How to remove a front panel and the service lid according to the indoor unit installation manual.

[Removing the front panel and service lid]

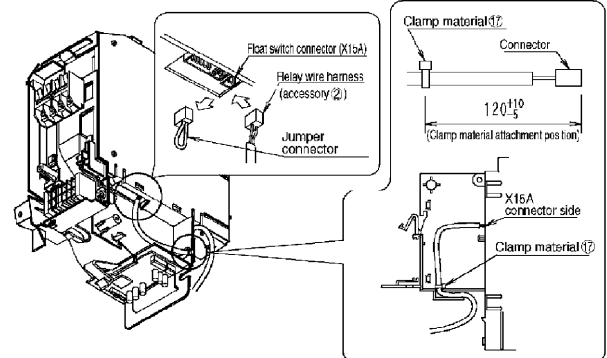
(1) Open the front panel as far as it stops.

(2) Push the axes on either side of the front panel towards the center of the main unit and remove. (You can also remove it by sliding the front panel either to the left or right and pulling it forward.)

(3) Remove the screws from the service lid and pull the handle forward.

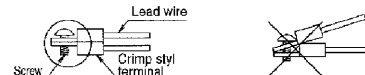


3. Remove the indoor unit printed circuit board X15A Jumper connector and connect the relay wire harness (accessory 2) connector.

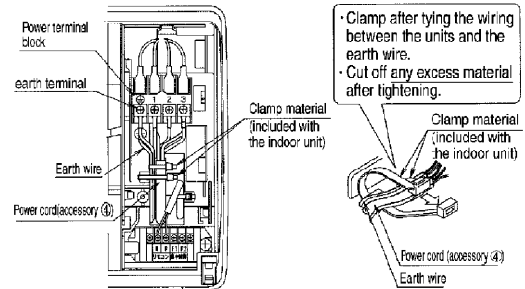


4. Connect the power cord (accessory 4) to the indoor unit inter-unit wiring terminal block.

● When connecting the terminal to the inter-unit wiring terminal block, make sure it is attached properly, as shown below. If the crimp styl terminals are mistakenly attached in the same direction, the surface of the terminal that is touching will be reduced, causing heat and perhaps burn damage.



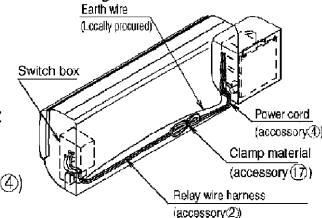
5. Connect the earth wire (locally procured - copper wire at least 2mm²) between the indoor unit and the drain pump kit with the ground connection screw for the indoor unit. Be sure to perform earthing. Make sure the earthing resistance is below 100 ohms.



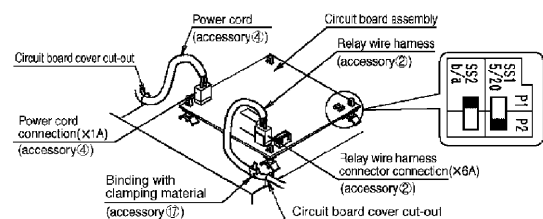
5 Passing the wire through

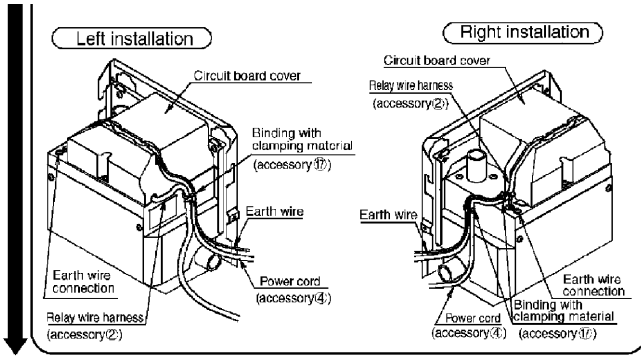
1. See the figure below for how to pass the wire through.

The relay wire harness, power cord and earth wire should be matched to the space inside the indoor unit.



2. Connect the relay wire harness (accessory 2) to the drain pump kit circuit board assembly connector (X6A).
3. Connect the power cord (accessory 4) to the drain pump kit circuit board assembly connector (X1A).
4. Secure the earth wire (locally procured-copper wire at least 2mm²) to the drain pump kit using the earth connection screw.
5. Tighten the relay wire harness (accessory 2) using the clamping material.
6. Make sure that slide switch SS1 on the drain pump kit printed circuit board is set to P2 and slide switch SS2 is set to P1.
7. Attach the circuit board cover.
8. Tighten the relay wire harness (accessory 2), power cord (accessory 4), and earth wire (locally procured) using the clamping material.
9. Bundle excess relay wire harness (accessory 2) using the clamping material (accessory 17) and store away.
10. Connect the earth wire.

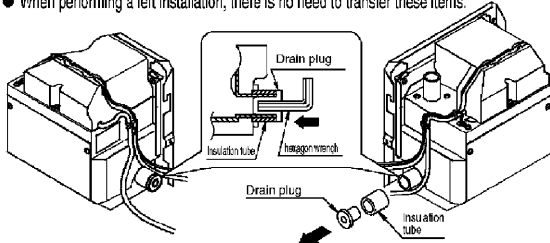




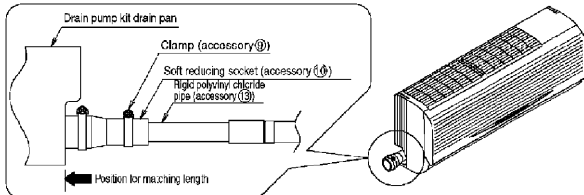
6 Installing the drain pump kit and drain piping.

1. When installing the drain pump kit to the right, transfer the drain plug and the insulating tubing from the left to the right.

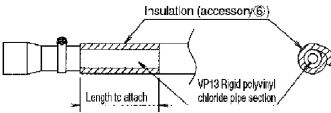
- When performing a left installation, there is no need to transfer these items.



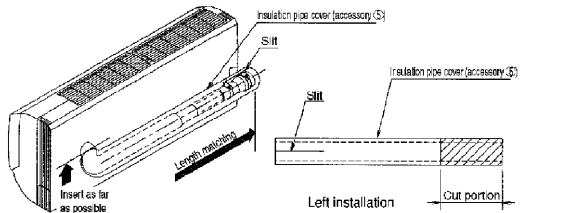
2. Insert the clamp (accessory 9) and the soft reducing socket (accessory 10) into the indoor unit the rigid polyvinyl chloride pipe (accessory 13), then match the position and tighten up the clamp to match the length of the drain pump kit drain pan socket.



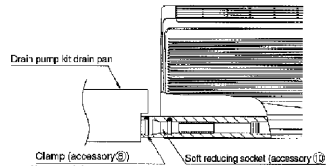
3. Matching the dimensions of the area required, cut the right length of insulation (accessory 6) for the drain hose rigid polyvinyl chloride pipe section and attach.



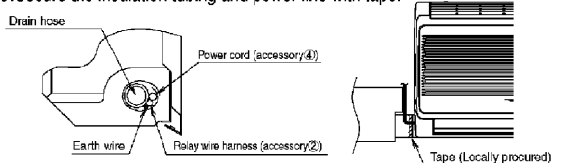
4. Insert the insulation pipe cover (accessory 5) as far into the drain hose as it can go.
 ● There is a slit in one side of the insulation pipe cover. Position the slit side to the drain pump kit.
 ● Cut the insulation pipe cover to match the length of the drain hose.



5. Insert the clamp (accessory 8) and the soft reducing socket (accessory 10) into the drain pump kit drain socket and tighten it.



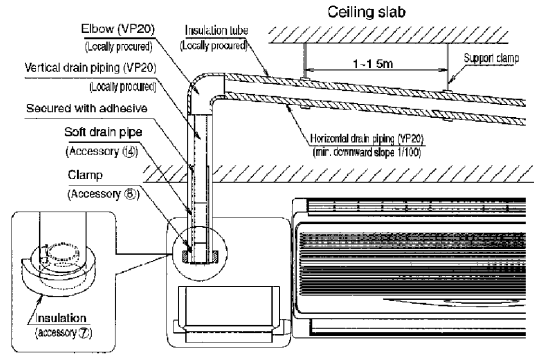
6. Secure the insulation tubing and power line with tape.



7. Connect the exit pipe.

- Be sure to use adhesive to connect the soft drain pipe (accessory 14) and the ceiling-side locally-procured the drain pipe.
- Connections on the drain pump kit should be secured with a clamp (accessory 8) and wrapped with insulation (accessory 7).

- Caution**
- Exit piping parts must be procured locally.
 - Be sure to insulate the drain piping.
 - Give the horizontal sections on the drain piping a downward slope of at least 1/100 and make sure no air bubbles accumulate.
 - Secure long horizontal sections with support clamps to prevent them from shaking.



7 Test run

- Make sure the pump is running and water is draining.
- Make sure there are no leaks from the drain pipes when draining.

- Caution**
- Before the work confirm the power off.
 - After replacing the circuit board cover to its original location, turn on the power.

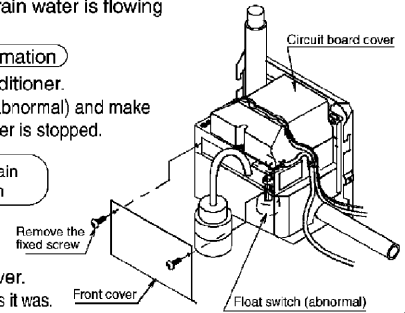
1. Remove the front cover on the drain pump kit and fill the drain pan halfway with water.
2. Turn on the power and make sure that the drain pump is working properly and the drain water is flowing smoothly.

Abnormal-stop confirmation

1. Turn on the air conditioner.
2. Lift the float switch (abnormal) and make sure the air conditioner is stopped.

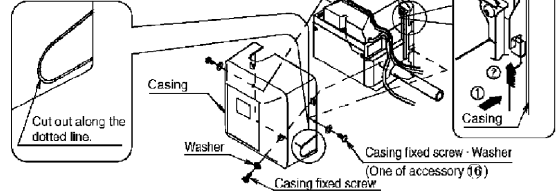
- Caution** Do not get the drain pump mechanism

- After checking, replace the front cover.
- Rebuild the indoor unit as it was.



8 Attaching the casing

- Cut out the piping exit hole from the casing.
- Secure the casing with the installation screws and washers as described below.
- When securing the casing in two places right and left, use the screws and washers (accessory 16).



9 Checks after completion

You should re-check the following after completion of work.

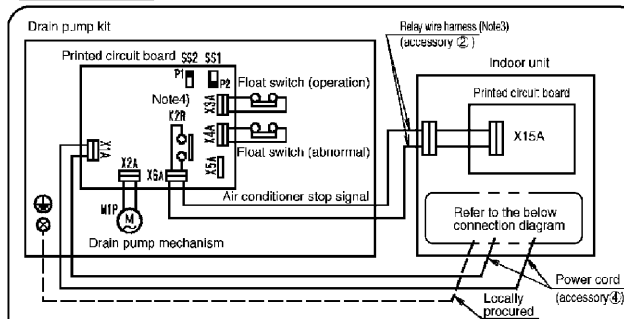
Items to be checked	Check column
Are the indoor unit and drain pump kit level?	
Is the drain piping properly connected?	
Is there any possibility of developing water leaks?	
Is the drain piping run on a downhill grade?(1/50-1/100)	
Is the drain hose properly insulated?	
Is the equipment wired correctly?	

After test running the air conditioner, use the operating in cooling and check the operating sound of the drain pump kit.

10 Cautions during operation

- The pump repeats an operation stop with the float switch for operation during airconditioning operation.
- After cooling is stopped, the residual water will be drained out, so do not turn off the power immediately.
- Wait at least 5 minutes after the unit has stopped before turning off the power. When not turning off a power supply, a remains operation about 20 minutes back drain pump stops.
- When a safe circuit operates, operation of an air conditioner is stopped.
- During air conditioning operation, when water leaks from the inside of an are conditioner or a drain pump kit, please stop operation immediately.
- Since the drain exit is choked up or there is possibility that the safe circuit may not operate normally, please inform the store of purchase.

Electric wiring



Application model	FAY71LVE FAYP71LV1	FXA20-25-32LVE(C) FXA40-50-63LVE FXAQ20-25-32MVE FXAQ40-50-63MVE	FAQ71BUV1B
Connection diagram			

The earth wire (copper) should be at least 2.0mm² or φ 1.6mm. When the relay wire harness is connected, remove the X15A short-circuit connector.

- Note1: Don't forget to turn on the power. If it is not turned on, the air conditioner will perform an error stop and operation will not be possible.
 Note2: Make sure that slide switch SS1 on the drain pump kit printed circuit board assembly is set to P2 and slide switch SS2 is set to P1.
 Note3: The relay wire harness cannot be extended.
 Note4: Turning on the power will close the K2R connector, making is a non-volt B connector.

3K019618

FXLQ-MA / FXNQ-MA

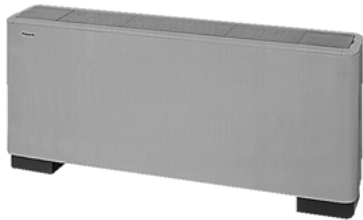
Floor Standing Type / Concealed Floor Standing Type

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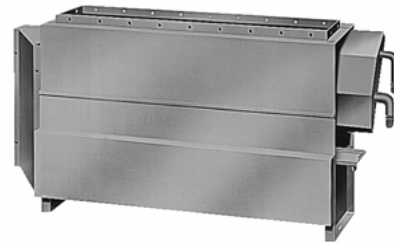
1. Features

Efficient for perimeter zone airconditioning.

Can be built into pericounter



FXLQ-MA



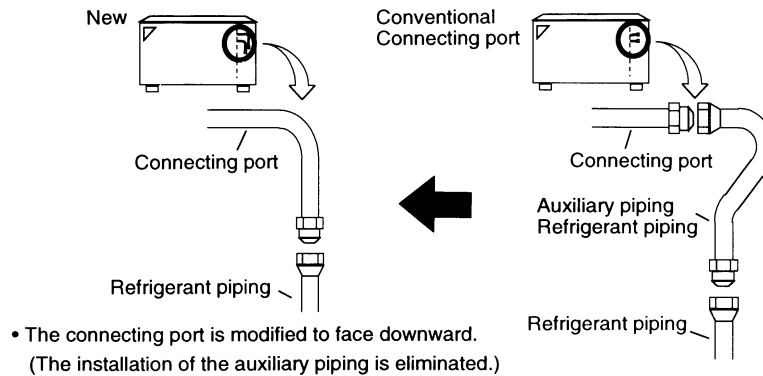
FXNQ-MA

(1) New round-shape adds the gentle feeling to office environment.

- Mild color is applied to the discharge grille and the bottom frame.
- The slimming top plate ensures elegance in dynamics.

(2) Improvement on the installation

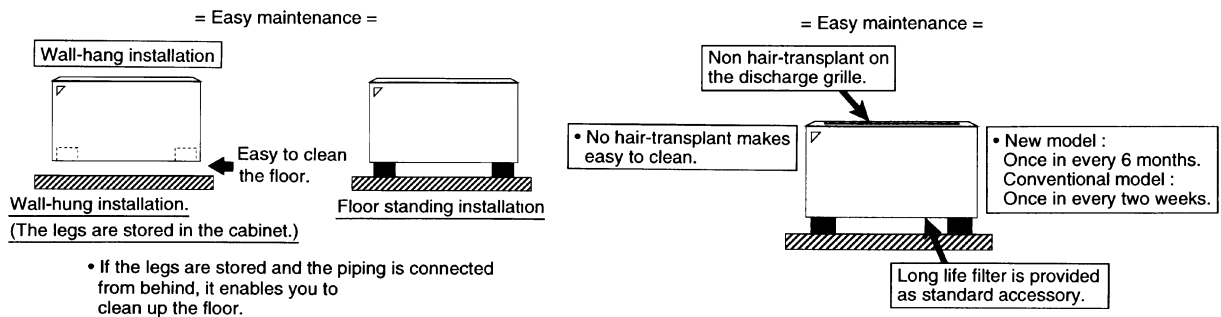
- The piping connection work is facilitated drastically.



(3) Easy maintenance

When the unit is hung on the wall, it is easy to clean the floor. (Exposed type)

- The maintenance of the discharge grille is improved.
- The interval of filter cleaning is prolonged.



2. Specifications

2.1 FXLQ-MA

Floor Standing Type

Model			FXLQ20MAVE	FXLQ25MAVE	FXLQ32MAVE
*1 Cooling Capacity (19.5°CWB)	kcal/h		2,000	2,500	3,200
	Btu/h		7,800	9,900	12,600
	kW		2.3	2.9	3.7
*2 Cooling Capacity (19.0°CWB)	kW		2.2	2.8	3.6
Casing Color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (HxWxD)			mm	600x1,000x222	600x1,140x222
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm	3x14x1.5	3x14x1.5	3x14x1.5
	Face Area	m ²	0.159	0.159	0.200
Fan	Model		D14B20	D14B20	2D14B13
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output x Number of Units	W	15x1	15x1	25x1
	Air Flow Rate (H/L)	m ³ /min	7/6	7/6	8/6
		cfm	247/212	247/212	282/212
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/ Urethane Foam	Glass Fiber/ Urethane Foam	Glass Fiber/ Urethane Foam
Air Filter			Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
Piping Connections	Liquid Pipes	mm	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)
	Gas Pipes	mm	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)
	Drain Pipe	mm	φ21 O.D (Vinyl Chloride)	φ21 O.D (Vinyl Chloride)	φ21 O.D (Vinyl Chloride)
Machine Weight (Mass)			kg	25	30
*4 Sound Level (H/L) (220V)			dBA	35/32	35/32
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
Connectable Outdoor Unit			R-410A PA Series	R-410A PA Series	R-410A PA Series
Standard Accessories			Operation Manual. Installation Manual. Insulation for Fitting. Drain Hose. Clamps. Screws. Washers. Level Adjustment Screw.	Operation Manual. Installation Manual. Insulation for Fitting. Drain Hose. Clamps. Screws. Washers. Level Adjustment Screw.	Operation Manual. Installation Manual. Insulation for Fitting. Drain Hose. Clamps. Screws. Washers. Level Adjustment Screw.
Drawing No.			C : 3D038816A		

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- *4 Anechoic chamber conversion value, measured at a point 1.5 m in front of the unit at a height of 1.5 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- 5 Refer to page 373 for Fan Motor Input.

Conversion Formulae
kcal/h=kWx860
Btu/h=kWx3412
cfm=m ³ /minx35.3

Floor Standing Type

Model		FXLQ40MAVE	FXLQ50MAVE	FXLQ63MAVE	
*1 Cooling Capacity (19.5°CWB)	kcal/h	4,000	5,000	6,300	
	Btu/h	16,000	19,800	24,900	
	kW	4.7	5.8	7.3	
*2 Cooling Capacity (19.0°CWB)	kW	4.5	5.6	7.1	
Casing Color		Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)	
Dimensions: (HxWxD)		mm 600x1,140x222	600x1,420x222	600x1,420x222	
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm 3x14x1.5	3x14x1.5	3x14x1.5	
	Face Area	m ² 0.200	0.282	0.282	
Fan	Model	2D14B13	2D14B20	2D14B20	
	Type	Sirocco Fan	Sirocco Fan	Sirocco Fan	
	Motor Output x Number of Units	W 25x1	35x1	35x1	
	Air Flow Rate (H/L)	m ³ /min	11/8.5	14/11	16/12
		cfm	388/300	494/388	565/424
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/ Urethane Foam	Glass Fiber/ Urethane Foam	Glass Fiber/ Urethane Foam	
Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	
Piping Connections	Liquid Pipes	mm φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ9.5 (Flare Connection)	
	Gas Pipes	mm φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ15.9 (Flare Connection)	
	Drain Pipe	mm φ21 O.D (Vinyl Chloride)	φ21 O.D (Vinyl Chloride)	φ21 O.D (Vinyl Chloride)	
Machine Weight (Mass)	kg	30	36	36	
*4 Sound Level (H/L) (220V)	dBA	38/33	39/34	40/35	
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	
Connectable Outdoor Unit		R-410A PA Series	R-410A PA Series	R-410A PA Series	
Standard Accessories		Operation Manual. Installation Manual. Insulation for Fitting. Drain Hose. Clamps. Screws. Washers. Level Adjustment Screw.	Operation Manual. Installation Manual. Insulation for Fitting. Drain Hose. Clamps. Screws. Washers. Level Adjustment Screw.	Operation Manual. Installation Manual. Insulation for Fitting. Drain Hose. Clamps. Screws. Washers. Level Adjustment Screw.	
Drawing No.		C : 3D038816A			

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- *4 Anechoic chamber conversion value, measured at a point 1.5 m in front of the unit at a height of 1.5 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- 5 Refer to page 373 for Fan Motor Input.

Conversion Formulae
kcal/h=kWx860
Btu/h=kWx3412
cfm=m ³ /minx35.3

2.2 FXNQ-MA

Concealed Floor Standing Type

Model			FXNQ20MAVE	FXNQ25MAVE	FXNQ32MAVE
*1 Cooling Capacity (19.5°CWB)		kcal/h	2,000	2,500	3,200
		Btu/h	7,800	9,900	12,600
		kW	2.3	2.9	3.7
*2 Cooling Capacity (19.0°CWB)		kW	2.2	2.8	3.6
Casing Color			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (HxWxD)		mm	610x930x220	610x930x220	610x1,070x220
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm	3x14x1.5	3x14x1.5	3x14x1.5
	Face Area	m ²	0.159	0.159	0.200
Fan	Model		D14B20	D14B20	2D14B13
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output x Number of Units	W	15x1	15x1	25x1
	Air Flow Rate (H/L)	m ³ /min	7/6	7/6	8/6
		cfm	247/212	247/212	282/212
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/ Urethane Foam	Glass Fiber/ Urethane Foam	Glass Fiber/ Urethane Foam
Air Filter			Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)
Piping Connections	Liquid Pipes	mm	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ6.4 (Flare Connection)
	Gas Pipes	mm	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ12.7 (Flare Connection)
	Drain Pipe	mm	φ21 O.D (Vinyl Chloride)	φ21 O.D (Vinyl Chloride)	φ21 O.D (Vinyl Chloride)
Machine Weight (Mass)		kg	19	19	23
*4 Sound Level (H/L) (220V)		dBA	35/32	35/32	35/32
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
Connectable Outdoor Unit			R-410A PA Series	R-410A PA Series	R-410A PA Series
Standard Accessories			Operation Manual. Installation Manual. Insulation for Fitting. Drain Hose. Clamps. Screws. Washers. Level Adjustment Screw.	Operation Manual. Installation Manual. Insulation for Fitting. Drain Hose. Clamps. Screws. Washers. Level Adjustment Screw.	Operation Manual. Installation Manual. Insulation for Fitting. Drain Hose. Clamps. Screws. Washers. Level Adjustment Screw.
Drawing No.			C : 3D038817A		

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
 *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
 *3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
 *4 Anechoic chamber conversion value, measured at a point 1.5 m in front of the unit at a height of 1.5 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
 5 Refer to page 373 for Fan Motor Input.

Conversion Formulae
kcal/h=kWx860
Btu/h=kWx3412
cfm=m ³ /minx35.3

Concealed Floor Standing Type

Model		FXNQ40MAVE	FXNQ50MAVE	FXNQ63MAVE	
*1 Cooling Capacity (19.5°CWB)	kcal/h	4,000	5,000	6,300	
	Btu/h	16,000	19,800	24,900	
	kW	4.7	5.8	7.3	
*2 Cooling Capacity (19.0°CWB)	kW	4.5	5.6	7.1	
Casing Color		Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	
Dimensions: (HxWxD)		mm 610x1,070x220	610x1,350x220	610x1,350x220	
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm 3x14x1.5	3x14x1.5	3x14x1.5	
	Face Area	m ² 0.200	0.282	0.282	
Fan	Model	2D14B13	2D14B20	2D14B20	
	Type	Sirocco Fan	Sirocco Fan	Sirocco Fan	
	Motor Output x Number of Units	W 25x1	35x1	35x1	
	Air Flow Rate (H/L)	m ³ /min	11/8.5	14/11	16/12
		cfm	388/300	494/388	565/424
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 / Urethane Foam	Glass Fiber / Urethane Foam	Glass Fiber / Urethane Foam	
Air Filter		Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	Resin Net (with Mold Resistant)	
Piping Connections	Liquid Pipes	mm φ6.4 (Flare Connection)	φ6.4 (Flare Connection)	φ9.5 (Flare Connection)	
	Gas Pipes	mm φ12.7 (Flare Connection)	φ12.7 (Flare Connection)	φ15.9 (Flare Connection)	
	Drain Pipe	mm φ21 O.D (Vinyl Chloride)	φ21 O.D (Vinyl Chloride)	φ21 O.D (Vinyl Chloride)	
Machine Weight (Mass)	kg	23	27	27	
*4 Sound Level (H/L) (220V)	dBA	38/33	39/34	40/35	
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	
Connectable Outdoor Unit		R-410A PA Series	R-410A PA Series	R-410A PA Series	
Standard Accessories		Operation Manual. Installation Manual. Insulation for Fitting. Drain Hose. Clamps. Screws. Washers. Level Adjustment Screw.	Operation Manual. Installation Manual. Insulation for Fitting. Drain Hose. Clamps. Screws. Washers. Level Adjustment Screw.	Operation Manual. Installation Manual. Insulation for Fitting. Drain Hose. Clamps. Screws. Washers. Level Adjustment Screw.	
Drawing No.		C : 3D038817A			

Note:

- *1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp. : 35°CDB / Equivalent piping length : 7.5 m, level difference : 0 m.
- *3 Capacities are net, including a deduction for cooling (an addition for heating) for indoor fan motor heat.
- *4 Anechoic chamber conversion value, measured at a point 1.5 m in front of the unit at a height of 1.5 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.
- 5 Refer to page 373 for Fan Motor Input.

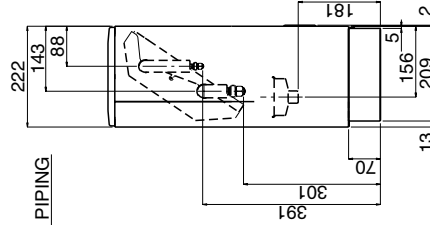
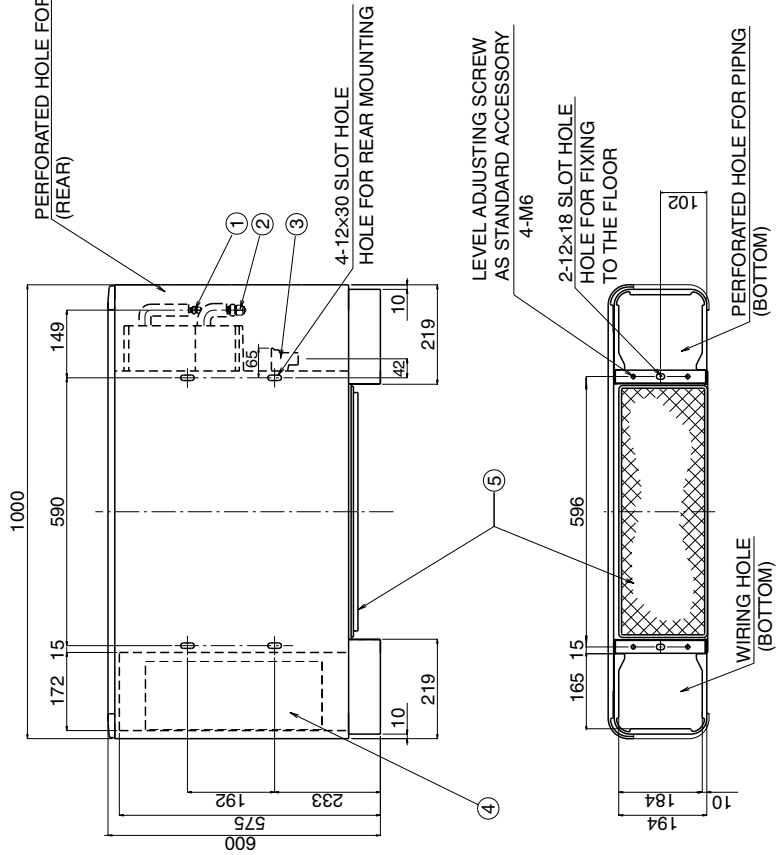
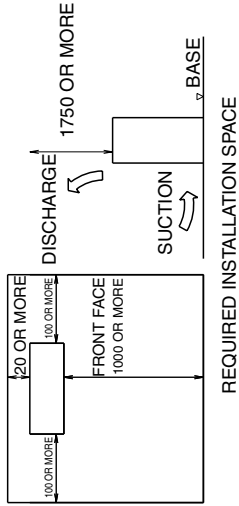
Conversion Formulae
kcal/h=kWx860
Btu/h=kWx3412
cfm=m ³ /minx35.3

3. Dimensions

3.1 FXLQ-MA

FXLQ20MA

FXLQ25MA



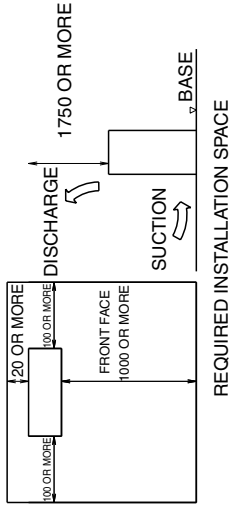
NOTE)
1. LOCATION OF UNIT'S NAME PLATE:
OUTSIDE SURFACE OF RIGHT SIDE PLATE.

NUMBER	NAME	DESCRIPTION
1	LIQUID PIPE CONNECTION PORT	φ6.4 FLARE CONNECTION
2	GAS PIPE CONNECTION PORT	φ12.7 FLARE CONNECTION
3	DRAIN PIPE CONNECTION PORT	O. D. 21
4	SWITCH BOX	
5	AIR FILTER	

Unit (mm)

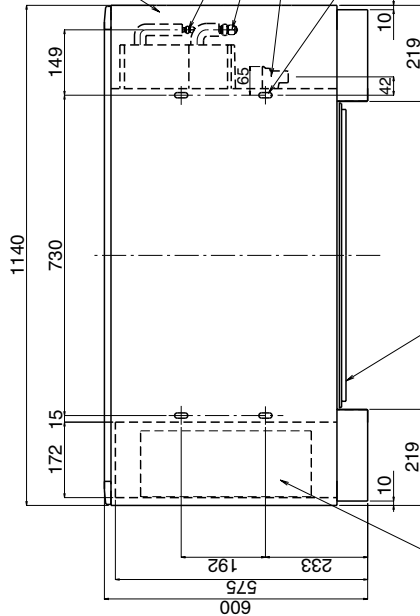
3D038860B

FXLQ32MA
FXLQ40MA



REQUIRED INSTALLATION SPACE

PERFORATED HOLE FOR PIPING (REAR)



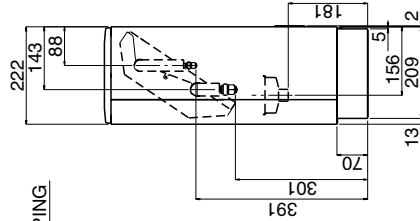
4-12x30 SLOT HOLE HOLE FOR REAR MOUNTING

LEVEL ADJUSTING SCREW AS STANDARD ACCESSORY

4-M6 2-12x18 SLOT HOLE HOLE FOR FIXING TO THE FLOOR

PERFORATED HOLE FOR PIPING (BOTTOM)

WIRING HOLE (BOTTOM)



NOTE)
1. LOCATION OF UNIT'S NAME PLATE:
OUTSIDE SURFACE OF RIGHT SIDE PLATE.

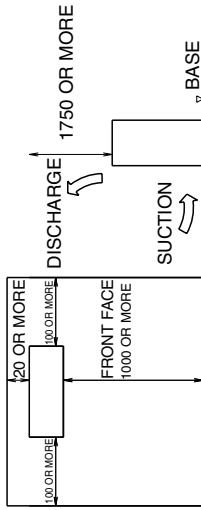
NUMBER	NAME	DESCRIPTION
1	LIQUID PIPE CONNECTION PORT	φ6.4 FLARE CONNECTION
2	GAS PIPE CONNECTION PORT	φ12.7 FLARE CONNECTION
3	DRAIN PIPE CONNECTION PORT	O. D. 21
4	SWITCH BOX	
5	AIR FILTER	

Unit (mm)

3D038861B

FXLQ50MA
FXLQ63MA

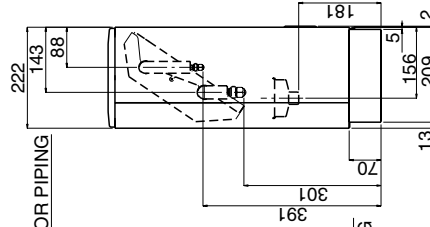
Unit (mm)



REQUIRED INSTALLATION SPACE

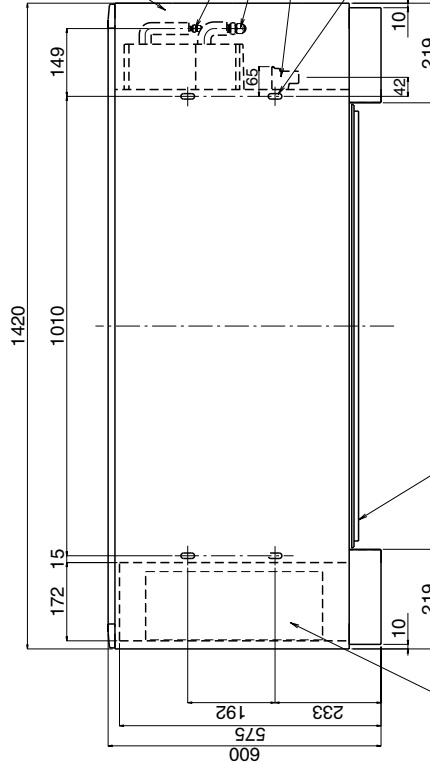
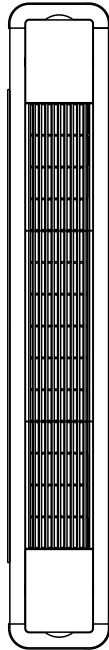
Piping size (Field supply)

Indoor unit	Gas side	Liquid side
FXLQ50M (A) VE	φ12.7	φ6.4
FXLQ50MHV1	φ12.7	φ6.4
FXLQ63M (A) VE	φ15.9	φ9.5



PERFORATED HOLE FOR PIPING (REAR)

4-12x30 SLOT HOLE HOLE FOR REAR MOUNTING



LEVEL ADJUSTING SCREW AS STANDARD ACCESSORY 4-M6

2-12x18 SLOT HOLE HOLE FOR FIXING TO THE FLOOR

WIRING HOLE (BOTTOM)

PERFORATED HOLE FOR PIPING (BOTTOM)

NOTE)

1. LOCATION OF UNIT'S NAME PLATE: OUTSIDE SURFACE OF RIGHT SIDE PLATE.

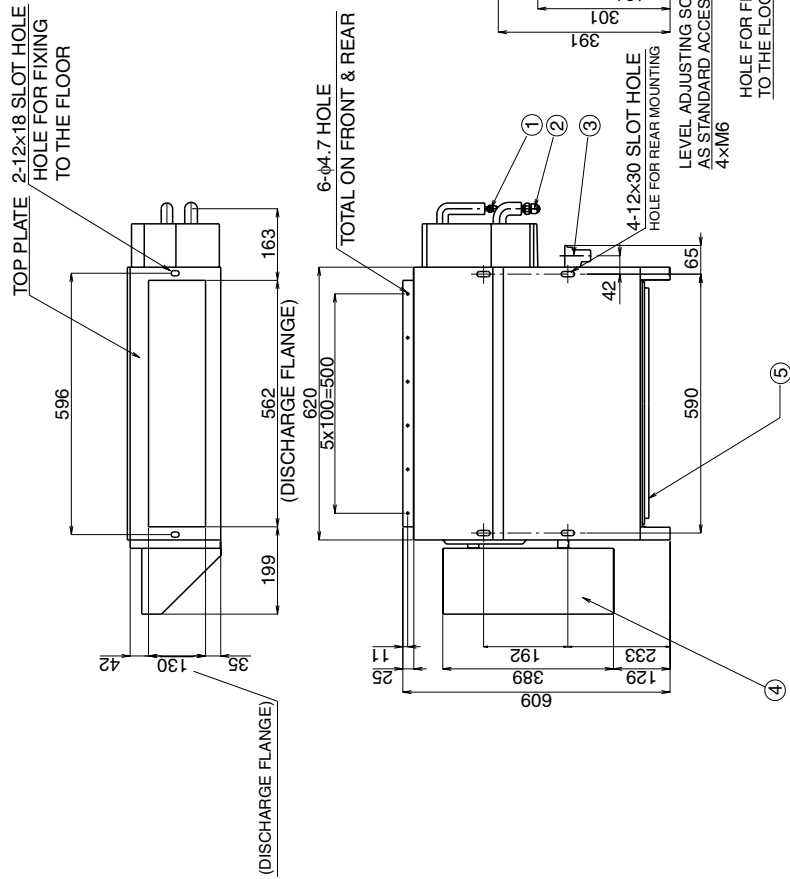
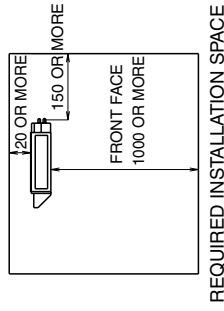
NUMBER	NAME	DESCRIPTION
1	LIQUID PIPE CONNECTION	FLARE CONNECTION
2	GAS PIPE CONNECTION	FLARE CONNECTION
3	DRAIN PIPE CONNECTION PORT	O. D. 21
4	SWITCH BOX	
5	AIR FILTER	

3D03862B

3.2 FXNQ-MA

FXNQ20MA
FXNQ25MA

Unit (mm)



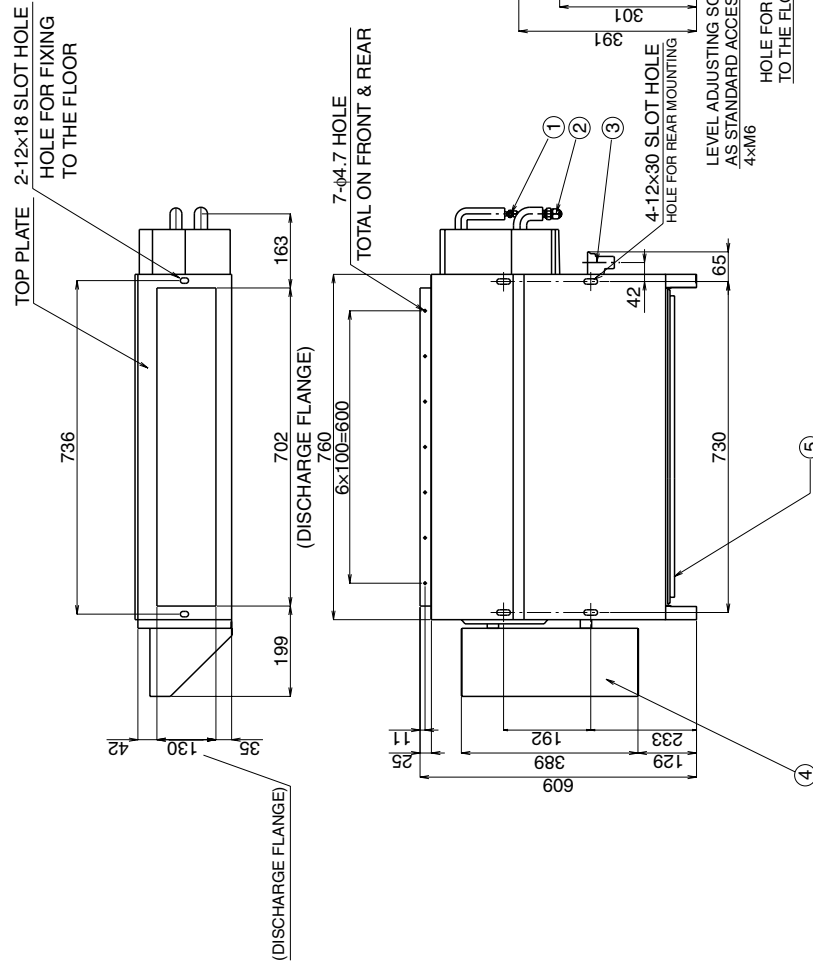
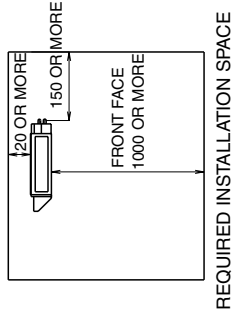
NUMBER	NAME	DESCRIPTION
1	LIQUID PIPE CONNECTION PORT	ø6.4 FLARE CONNECTION
2	GAS PIPE CONNECTION PORT	ø12.7 FLARE CONNECTION
3	DRAIN PIPE CONNECTION PORT	O. D. 21
4	SWITCH BOX	
5	AIR FILTER	

NOTE)
1. LOCATION OF UNIT'S NAME PLATE:
THE RIGHT LOWER CORNER OF FRONT PLATE.

3D03863B

FXNQ32MA
FXNQ40MA

Unit (mm)



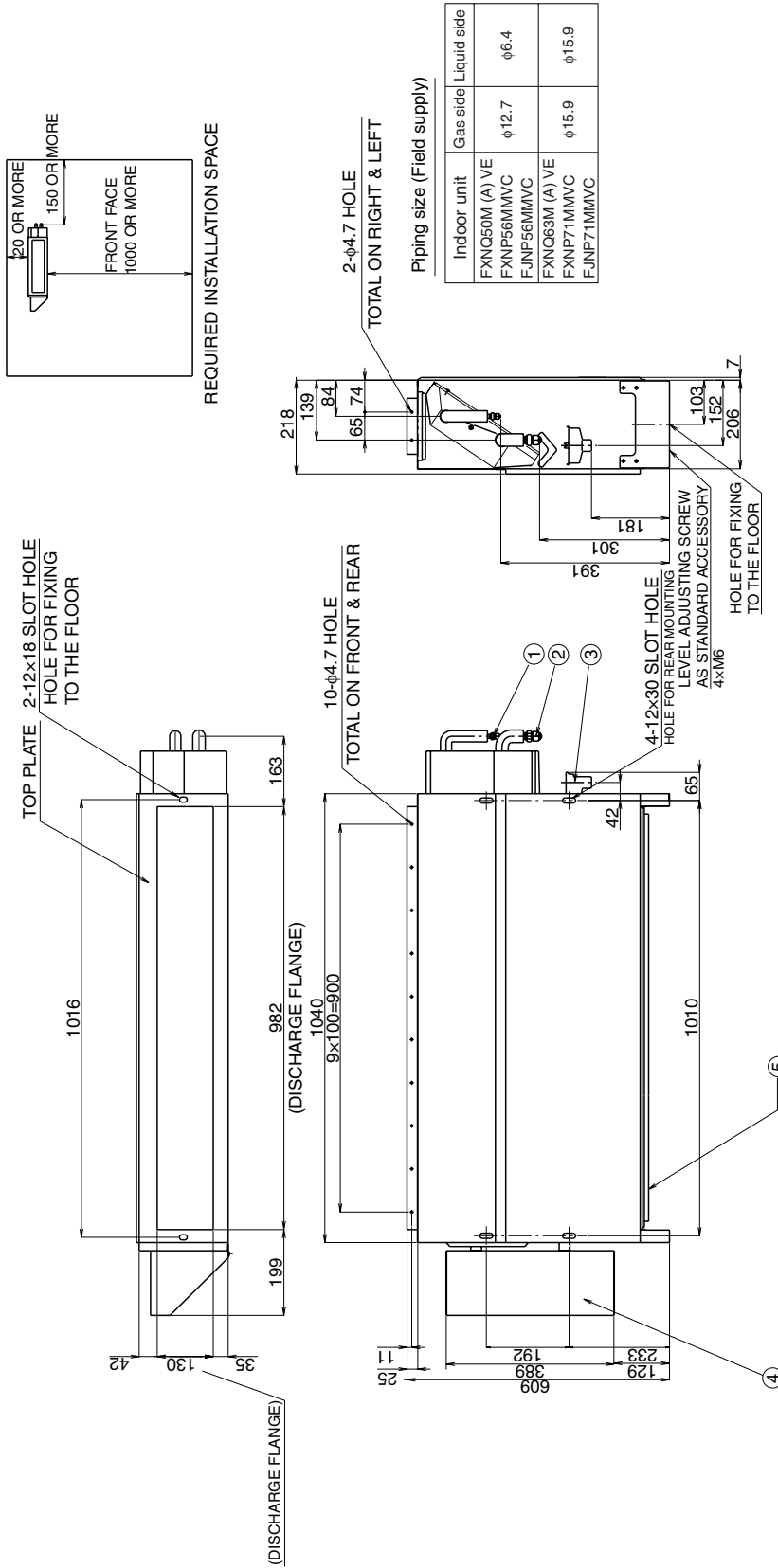
NUMBER	NAME	DESCRIPTION
1	LIQUID PIPE CONNECTION PORT	ø6.4 FLARE CONNECTION
2	GAS PIPE CONNECTION PORT	ø12.7 FLARE CONNECTION
3	DRAIN PIPE CONNECTION PORT	O. D. 21
4	SWITCH BOX	
5	AIR FILTER	

NOTE)
1. LOCATION OF UNIT'S NAME PLATE:
THE RIGHT LOWER CORNER OF FRONT PLATE.

3D038864C

FXNQ50MA
FXNQ63MA

Unit (mm)

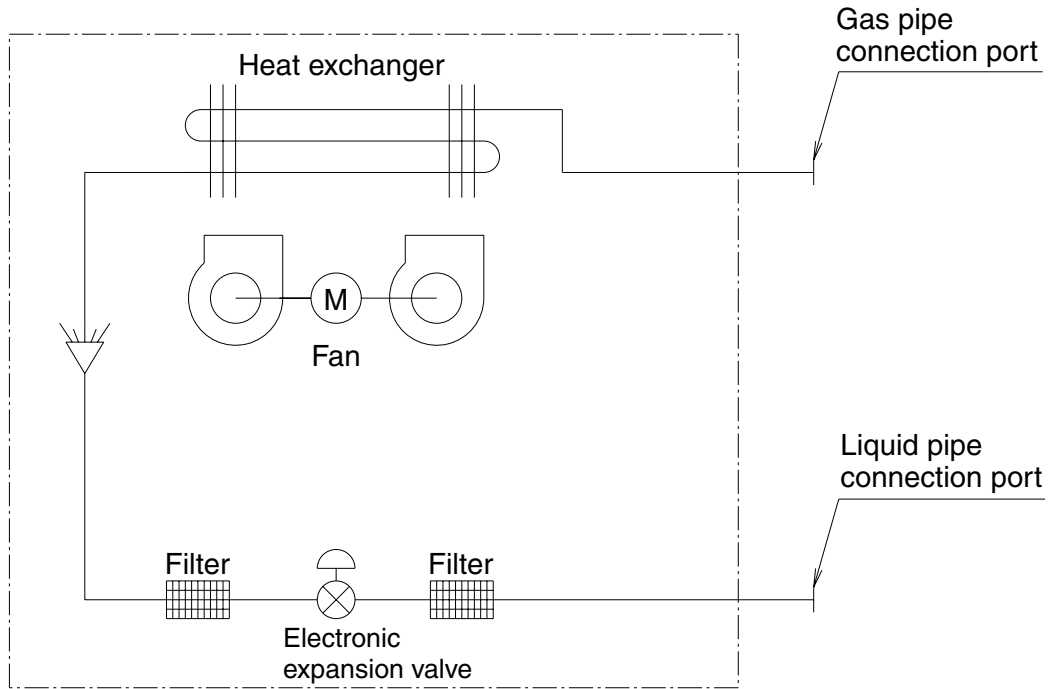


NUMBER	NAME	DESCRIPTION
1	LIQUID PIPE CONNECTION PORT	FLARE CONNECTION
2	GAS PIPE CONNECTION	FLARE CONNECTION
3	DRAIN PIPE CONNECTION	O. D. 21
4	SWITCH BOX	
5	AIR FILTER	

1. LOCATION OF UNIT'S NAME PLATE:
THE RIGHT LOWER CORNER OF FRONT PLATE.

3D038865C

4. Piping Diagrams



4D034245C

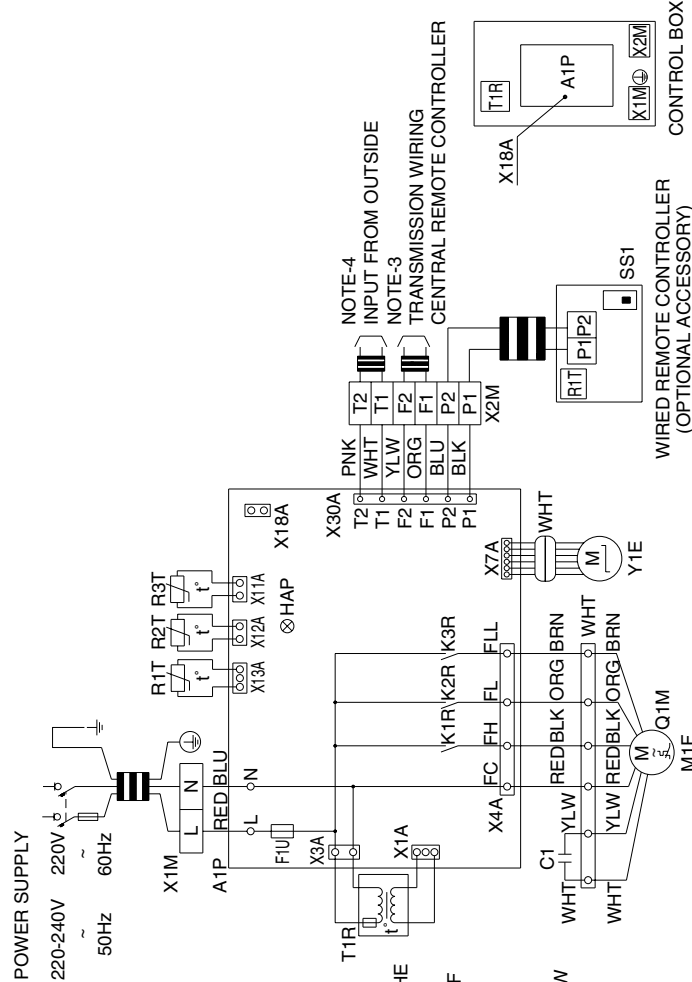
■ Refrigerant pipe connection port diameters

Model	(mm)	
	Gas	Liquid
FXLQ20 · 25 · 32 · 40 · 50MA FXNQ20 · 25 · 32 · 40 · 50MA	φ12.7	φ6.4
FXLQ63MA FXNQ63MA	φ15.9	φ9.5

5. Wiring Diagrams

FXLQ20 · 25 · 32 · 40 · 50 · 63MAVE
 FXNQ20 · 25 · 32 · 40 · 50 · 63MAVE

A1P	INDOOR UNIT	X2M	TERMINAL BLOCK (CONTROL)
C1	PRINTED CIRCUIT BOARD	Y1E	ELECTRONIC EXPANSION VALVE
F1U	CAPACITOR (M1F)		WIRED REMOTE CONTROLLER
HAP	FUSE (③, 5A, 250V)	R1T	THERMISTOR (AIR)
K1R4K3R	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)	SS1	SELECTOR SWITCH (M1N/SUB)
M1F	MAGNETIC RELAY (M1F)	X18A	CONNECTOR FOR OPTIONAL PARTS
Q1M	MOTOR (INDOOR FAN)		FOR ELECTRICAL APPENDICES)
R1T	THERMO SWITCH (M1F EMBEDDED)		
R2T-R3T	THERMISTOR (AIR)		
T1R	THERMISTOR (COIL)		
X1M	TRANSFORMER (220-240V/22V)		
	TERMINAL BLOCK (POWER)		



- NOTES
1. □□□□ : TERMINAL BLOCK, □□□□ : CONNECTOR, -○- : TERMINAL
 2. ■■■■ : FIELD WIRING
 3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTRUCTION MANUAL.
 4. WHEN 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 THE UNIT.
 5. SYMBOLS SHOW AS FOLLOWS: (PNK: PINK WHT: WHITE YLW: YELLOW ORG: ORANGE BLU: BLUE BLK: BLACK RED: RED BRN: BROWN)
 6. USE COPPER CONDUCTORS ONLY.

3D039826D

6. Electric Characteristics

Model	Units			Power supply		IFM		Input(W)	
	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
FXLQ・FXNQ20MAVE	50	220-240	MAX. 264 Min. 198	0.3	15	0.015	0.2	49	49
FXLQ・FXNQ25MAVE				0.3	15	0.015	0.2	49	49
FXLQ・FXNQ32MAVE				0.6	15	0.025	0.5	90	90
FXLQ・FXNQ40MAVE				0.6	15	0.025	0.5	90	90
FXLQ・FXNQ50MAVE				0.6	15	0.035	0.5	110	110
FXLQ・FXNQ63MAVE				0.6	15	0.035	0.5	110	110

Symbols :

- MCA : Min. Circuit Amps (A)
 MFA : Max. Fuse Amps (See note 5)
 KW : Fan Motor Rated Output(KW)
 FLA : Full Load Amps(A)
 IFM : Indoor Fan Motor

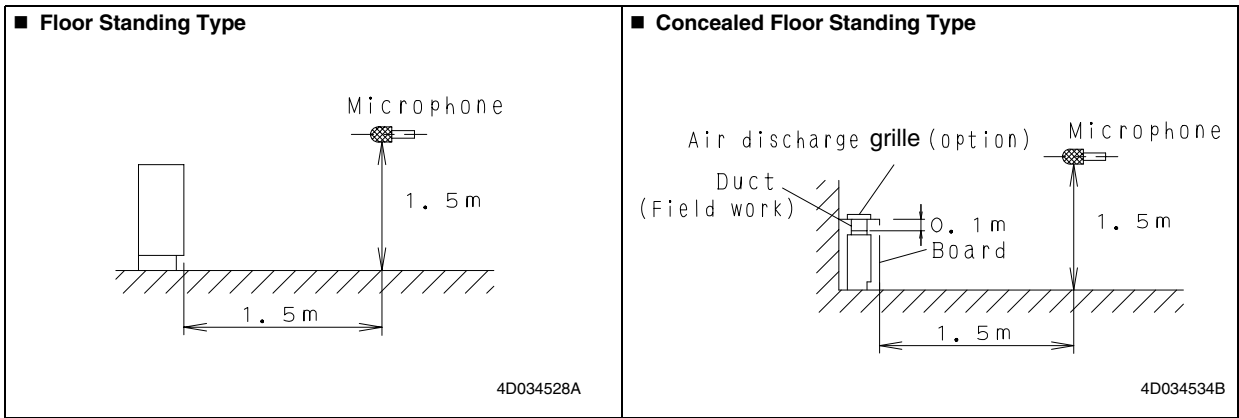
Note :

- Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits,
- Maximum allowable voltage unbalance between phases is 2%.
- MCA/MFA
 $MCA = 1.25 \times FLA$
 $MFA \leq 4 \times FLA$
 (Next lower standard fuse rating. Min.15A)
- Select wire size based on the MCA.
- Instead of fuse, use Circuit Breaker.

C : 4D034579C

8. Sound Levels

Overall



Model	dBA				Model	dBA			
	220V, 50Hz		240V, 50Hz			220V, 50Hz		240V, 50Hz	
	H	L	H	L		H	L	H	L
FXLQ20MA FXLQ25MA FXLQ32MA	35	32	37	34	FXNQ20MA FXNQ25MA FXNQ32MA	35	32	37	34
FXLQ40MA	38	33	40	35	FXNQ40MA	38	33	40	35
FXLQ50MA	39	34	41	36	FXNQ50MA	39	34	41	36
FXLQ63MA	40	35	42	37	FXNQ63MA	40	35	42	37

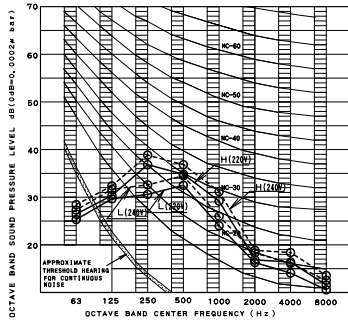
Note:

1. The operating conditions are assumed to be standard (JIS conditions).
2. These operating values were obtained in a dead room (conversion values).
 Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

Octave Band Level

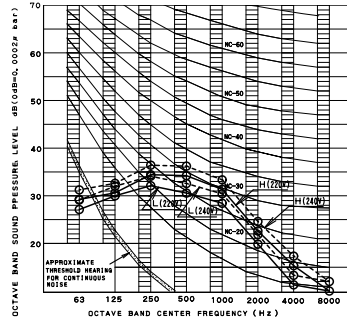
- — ○ 220V 50Hz
- - - - ○ 240V 50Hz

FXLQ20 · 25MAVE



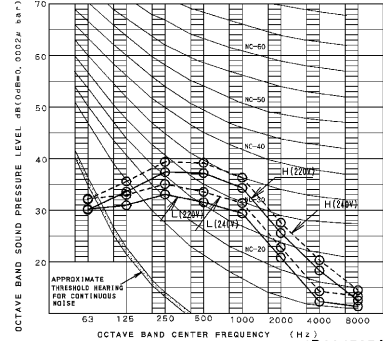
4D034528A

FXLQ32MAVE



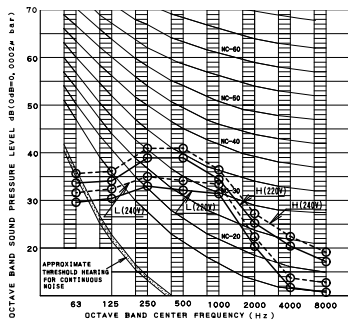
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FXLQ40MAVE



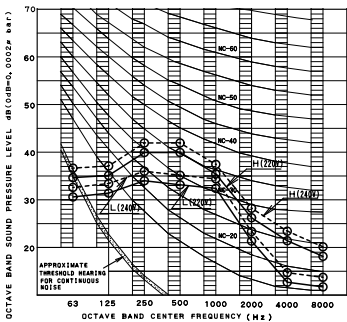
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FXLQ50MAVE



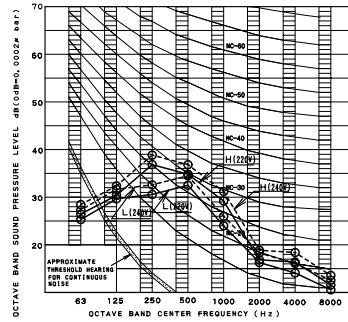
4D034566A

FXLQ63MAVE



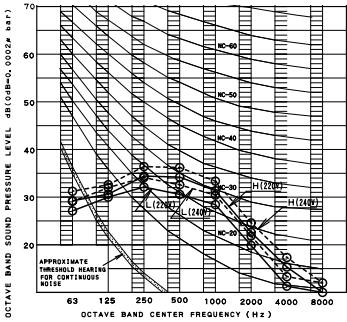
4D034567A

FXNQ20 · 25MAVE



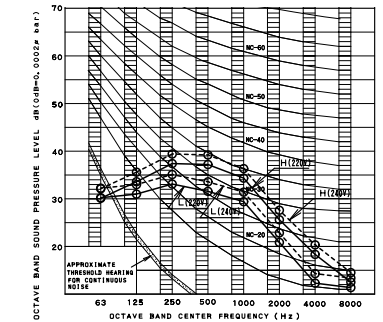
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FXNQ32MAVE



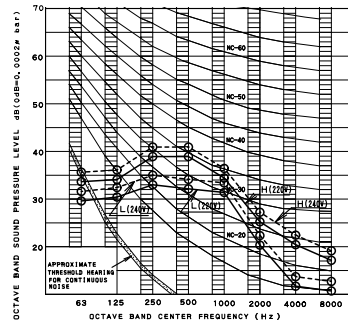
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FXNQ40MAVE



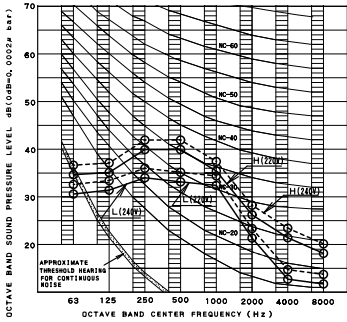
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FXNQ50MAVE



4D034537B

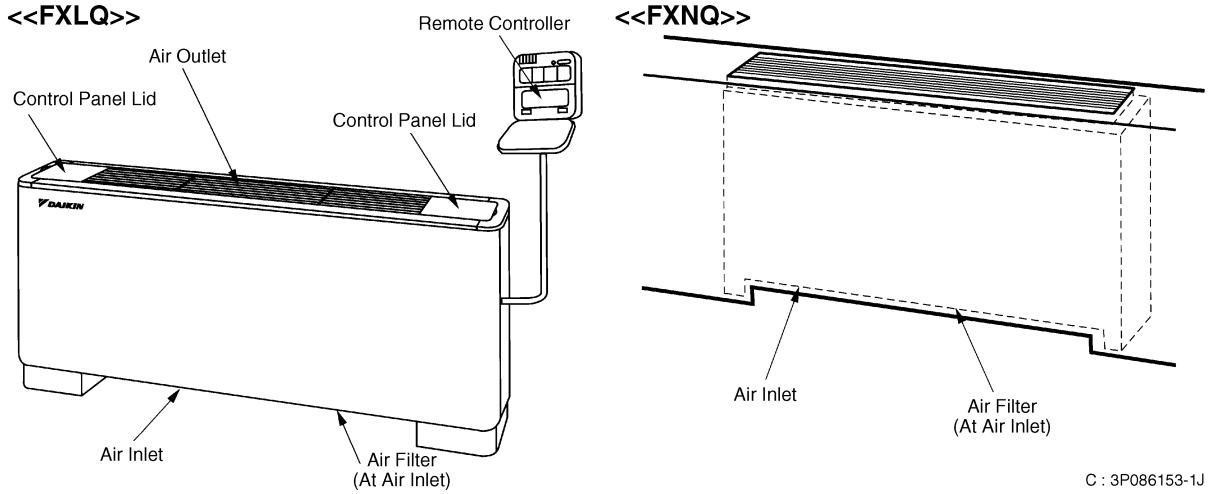
FXNQ63MAVE



4D034538B

9. Installation

Installation Example



C : 3P086153-1J

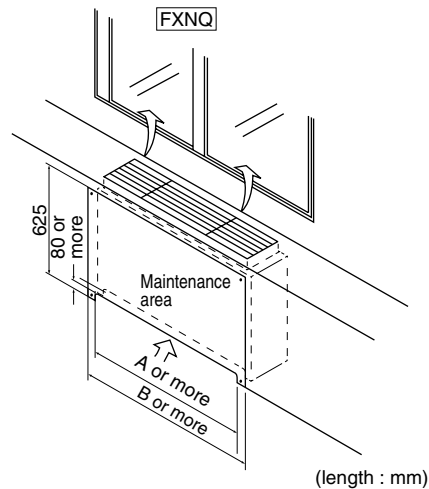
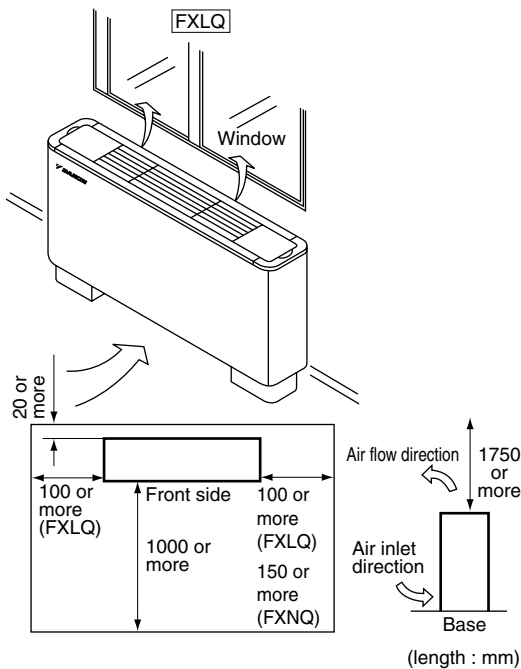
Service Space

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

- Where the floor is strong enough to bear the indoor unit weight.
- Where the floor is not significantly inclined.
- Where nothing blocks the air passage.
- Where condensate can be properly drained.
- Where sufficient clearance for installation and maintenance can be ensured.
- Where optimum air distribution can be ensured.
- Where there is no risk of flammable gas leakage.
- Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual of the outdoor unit.)

CAUTION

- Install the indoor and outdoor units, power supply wiring and connecting wires at least 1 meter away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.)



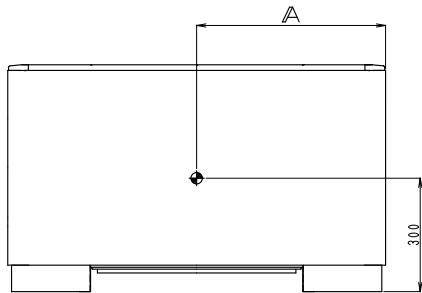
(IMPORTANT) Leave sufficient clearance for air inlet and maintenance.

Model		A (mm)	B (mm)
FXLQ20 · 25MAVE	FXNQ20 · 25MAVE	570	1030
FXLQ32 · 40MAVE	FXNQ32 · 40MAVE	710	1170
FXLQ50 · 63MAVE	FXNQ50 · 63MAVE	990	1450

C : 3P086154-2N

Center of Gravity

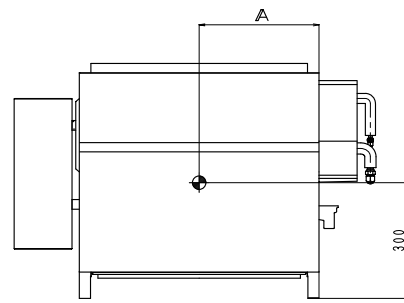
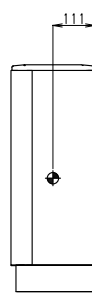
FXLQ



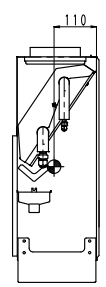
	A
FXLQ20•25MAVE	500
FXLQ32•40MAVE	570
FXLQ50•63MAVE	710

FXNQ

Unit (mm)



Unit (mm)



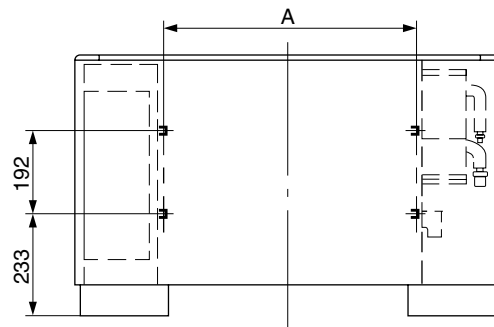
	A
FXNQ20•25MAVE	395
FXNQ32•40MAVE	465
FXNQ50•63MAVE	505

C : 4D034527C

C : 4D034533C

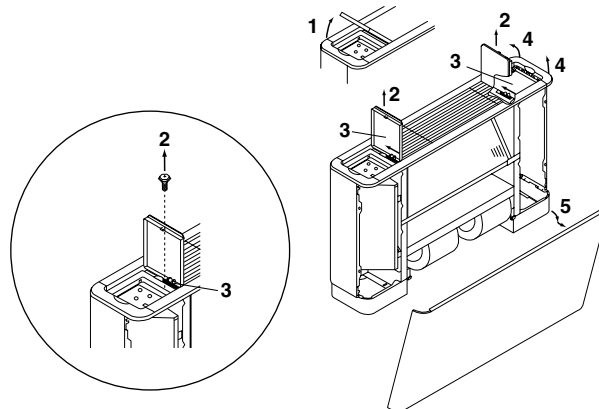
Bolt Pitch

(1) Positioning of holes for fastening to the wall



Model	A (mm)
FXNQ20 · 25MAVE	590
FXNQ32 · 40MAVE	730
FXNQ50 · 63MAVE	1010

(2) How to open / close the front panel



1. Open the lid of control panel (both left and right)
 2. Remove screws (both left and right) that lock the knobs in position.
 3. Push the knobs (both left and right) to the rear.
 4. Lift the front of the top plate.
 5. Lower the front panel towards the front of the unit.
- To close, perform the procedure in opposite order. Pull towards the front unit the knob snaps in place.

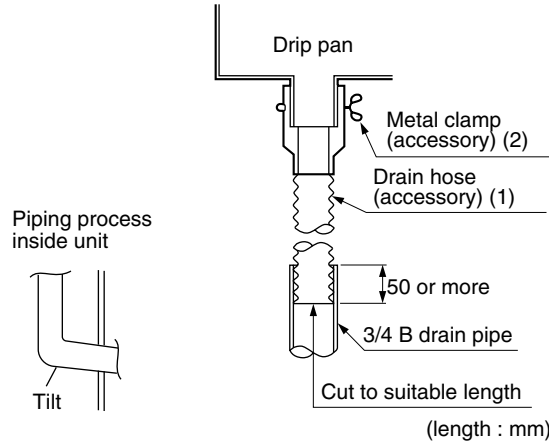
C : 3P086154-2N

Drain Piping Work

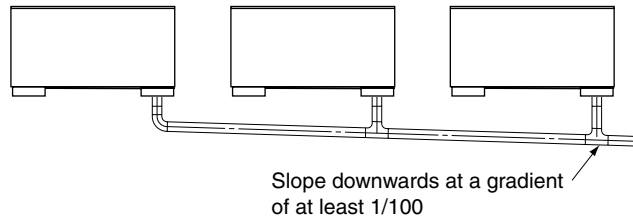
«Rig the drain pipe as shown below and take measures against condensation. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.»

(1) Carry out the drain piping.

Connect the drain hose (1) using the attached hose and parts, as shown in the right drawing.



• If converging multiple drain pipes, install according to the procedure shown below.



Select converging drain pipes whose gauge is suitable for the operating capacity of the unit.

(2) After piping work is finished, check drainage flows smoothly.

• Add approximately 1 liter of water slowly from the air outlet and check drainage flow.

(3) Be sure to insulate all indoor pipes.



CAUTION

- Drain piping connections
Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.
- Keep in mind that it will become the cause of getting drain pipe blocked if water collects on drain pipe.

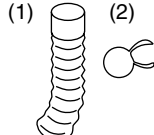

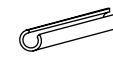

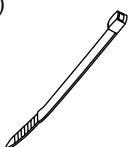
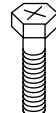
C : 3P086154-2N

10. Accessories

Standard Accessories

FXLQ20-63MA

FXNQ20-63MA

Name	Drain hose	Insulation for fitting	Sealing pad	Clamp	Leveling	[Other] • Operation manual • Installation manual
Quantity	1 set	1 each.	1 pc.	8 pcs.	4 pcs.	
Shape	Hose × 1 Metal clamp × 1 	(3) For gas pipe  (4) For liquid pipe 	(5) 	(6) 	(7) 	

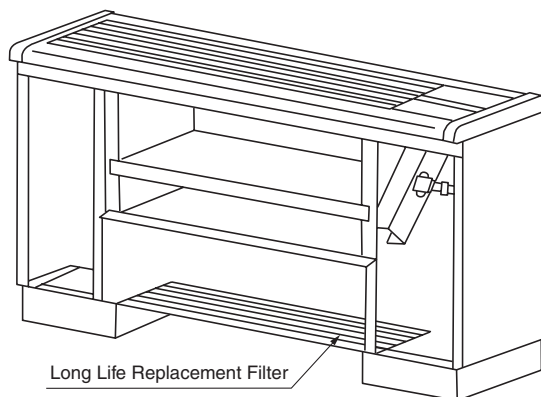
C : 3P086154-2N

Optional Accessories (For Unit)

No.	Type	FXLQ20MA FXNQ20MA	FXLQ25MA FXNQ25MA	FXLQ32MA FXNQ32MA	FXLQ40MA FXNQ40MA	FXLQ50MA FXNQ50MA	FXLQ63MA FXNQ63MA
1	Long life replacement filter	KAFJ361K28		KAFJ361K45		KAFJ361K71	

C : 4D034574B

Optional Accessories (For Controls) : Refer to P.645



FXUQ-MA

Ceiling Suspended Cassette Type (Connection Unit Series)

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1. Features

Flexibility in installation location

Because the installation location, air flow direction and air flow rate can be selected according to the shape, lighting, and interior design of a room, the Ceiling Suspended Cassette Type air conditioner will create a comfortable environment throughout the room. This is a completely new air conditioning system that produces the comfort level of a four-way air flow, ceiling-mounted cassette type air conditioner with the ease of a ceiling-suspended unit.



Development back ground of FXUQ-MA

Suitable for where there is no ceiling space



Ceiling Suspended Type

Better air distribution and easy installation



Ceiling Mounted Cassette Type

Take the both advantage in this product



Ceiling Suspended Cassette Type

Realized comfort and design flexibility at the same time for exposed installation.

Flexible Design

- Daikin unique cassette
- Low Silhouette design:
71 Type - 165mm thickness
(Current Multi Flow Cassette:338mm)
- Aesthetically pleasing design
- High ceiling up 3.5m
- Flexible air distribution by control of direction and volume

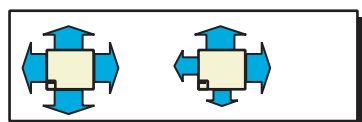
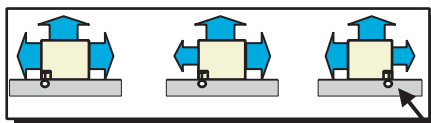
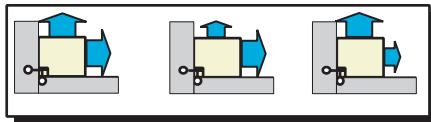
Easy Installation

- Flexible piping installation (3 directions)
- Ceiling space not required

Easy Maintenance

- Long life filter (standard accessories)
- Drain pump (standard accessories)

<Variable discharge direction and air volume>



Air flow rate

Standard (100%)

Regulated (70%)

Air volume is controlled using internal vanes

2. Specifications

Ceiling Suspended Cassette Type

Model	Indoor Unit		FXUQ71MAV1	FXUQ100MAV1	FXUQ125MAV1
	Connection Unit		BEVQ71MAVE	BEVQ100MAVE	BEVQ125MAVE
★1 Cooling Capacity (19.5°CWB)	kcal/h		7,100	10,000	12,500
	Btu/h		28,300	39,600	49,500
	kW		8.3	11.6	14.5
★2 Cooling Capacity (19.0°CWB)	kW		8.0	11.2	14.0
Casing Color			White (10Y9/0.5)	White (10Y9/0.5)	White (10Y9/0.5)
Dimensions: (HxWxD)		mm	165x895x895	230x895x895	230x895x895
Coil (Cross Fin Coil)	RowsxStagesxFin Pitch	mm	3x6x1.5	3x8x1.5	3x8x1.5
	Face Area	m ²	0.265	0.353	0.353
Fan	Model		QTS48A10M	QTS50B15M	QTS50B15M
	Type		Turbo Fan	Turbo Fan	Turbo Fan
	Motor Output x Number of Units	W	45x1	90x1	90x1
	Air Flow Rate (H/L)	m ³ /min	19/14	29/21	32/23
		cfm	671/494	1,024/741	1,130/812
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			Heat Resistant Foamed Polyethylene, Regular Foamed Polyethylene	Heat Resistant Foamed Polyethylene, Regular Foamed Polyethylene	Heat Resistant Foamed Polyethylene, Regular Foamed Polyethylene
Piping Connections	Liquid Pipes	mm	φ9.5 (Flare Connection)	φ9.5 (Flare Connection)	φ9.5 (Flare Connection)
	Gas Pipes	mm	φ15.9 (Flare Connection)	φ15.9 (Flare Connection)	φ15.9 (Flare Connection)
	Drain Pipe	mm	VP20 (External Dia. 26 Internal Dia. 20)	VP20 (External Dia. 26 Internal Dia. 20)	VP20 (External Dia. 26 Internal Dia. 20)
Machine Weight		kg	25	31	31
★4 Sound Level (H/L) (230V)		dBA	40/35	43/38	44/39
Safety Devices			Thermal Protector for Fan Motor	Thermal Protector for Fan Motor	Thermal Protector for Fan Motor
Standard Accessories			Operation Manual, Installation Manual, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers, Holding Plate.	Operation Manual, Installation Manual, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers, Holding Plate.	Operation Manual, Installation Manual, Drain Hose, Clamp Metal, Insulation for Fitting, Sealing Pads, Clamps, Screws, Washers, Holding Plate.
Drawing No.			C : 4D045395A		

Notes:

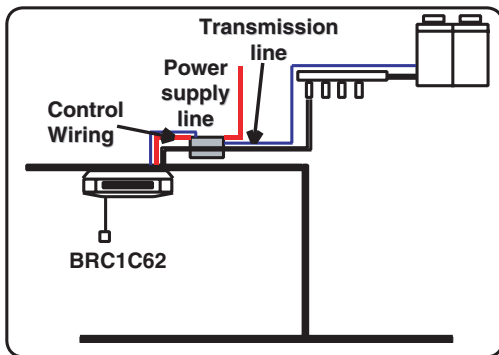
- ★1 Indoor temp. : 27°CDB, 19.5°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
- ★2 Indoor temp. : 27°CDB, 19.0°CWB / outdoor temp.: 35°CDB / Equivalent piping length: 7.5m, level difference: 0m.
- 3 Capacities are net, including a deduction for cooling (an additional for heating) for indoor fan motor heat.
- ★4 Anechoic chamber conversion value, measured at a point 1.5m downward from the unit center. These values are normally somewhat higher during actual operation as a result of ambient conditions.
- 5 Refer to page 391 for Fan Motor Input.

Conversion Formulae
kcal/h=kWx860
Btu/h=kWx3412
cfm=m ³ /minx35.3

BEV Units

Model		BEVQ71MAVE	BEVQ100MAVE	BEVQ125MAVE	
Power Supply		1 Phase 50Hz 220-240V	1 Phase 50Hz 220-240V	1 Phase 50Hz 220-240V	
Casing		Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate	
Dimensions: (HxWxD)		mm	100x350x225	100x350x225	
Sound Absorbing Thermal Insulation Material		Flame and Heat Resistant Foamed Polyethylene	Flame and Heat Resistant Foamed Polyethylene	Flame and Heat Resistant Foamed Polyethylene	
Piping Connection	Indoor Unit	Liquid Pipes	9.5mm (Flare Connection)	9.5mm (Flare Connection)	9.5mm (Flare Connection)
		Gas Pipes	15.9mm (Flare Connection)	15.9mm (Flare Connection)	15.9mm (Flare Connection)
	Outdoor Unit	Liquid Pipes	9.5mm (Flare Connection)	9.5mm (Flare Connection)	9.5mm (Flare Connection)
		Suction Gas Pipes	15.9mm (Flare Connection)	15.9mm (Flare Connection)	15.9mm (Flare Connection)
Machine Weight (Mass)		kg	3.0	3.0	3.5
Standard Accessories		Installation manual, Gas piping connections, Insulation for fitting, Sealing material, Clamps		Installation manual, Gas piping connections, Insulation for fitting, Sealing material, Clamps	Installation manual, Gas piping connections, Insulation for fitting, Sealing material, Clamps
Drawing No.		4D045387A	4D045387A	4D045388A	

Connection Example



1. Wiring Work

- The connecting line between SkyAir Indoor Unit – BEV Unit : 3 cores...like a Transmission Line
- BEV Unit's power supply line; Single phase 2 line...like a VRV Indoor unit
- BEV Unit – other VRV indoor unit or outdoor unit – : 2 cores...DIII network wiring (super wiring)

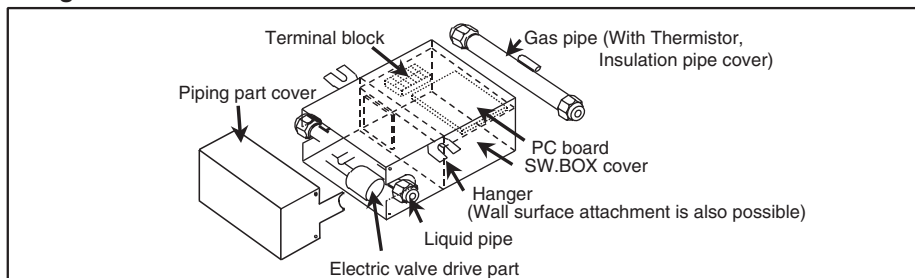
2. Piping work

SkyAir side, Outdoor Unit Side, They are both flare connection.

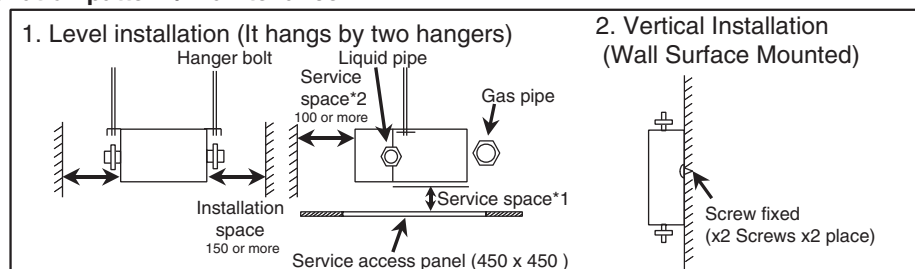
■ Consideration matter

- When connecting centralized-control device, it is necessary to **install an interface adaptor for SkyAir series in an indoor unit.**
- Distance between indoor unit and –BEV unit must be **within 5m.**

■ Outline figure



■ Installation pattern / maintenance

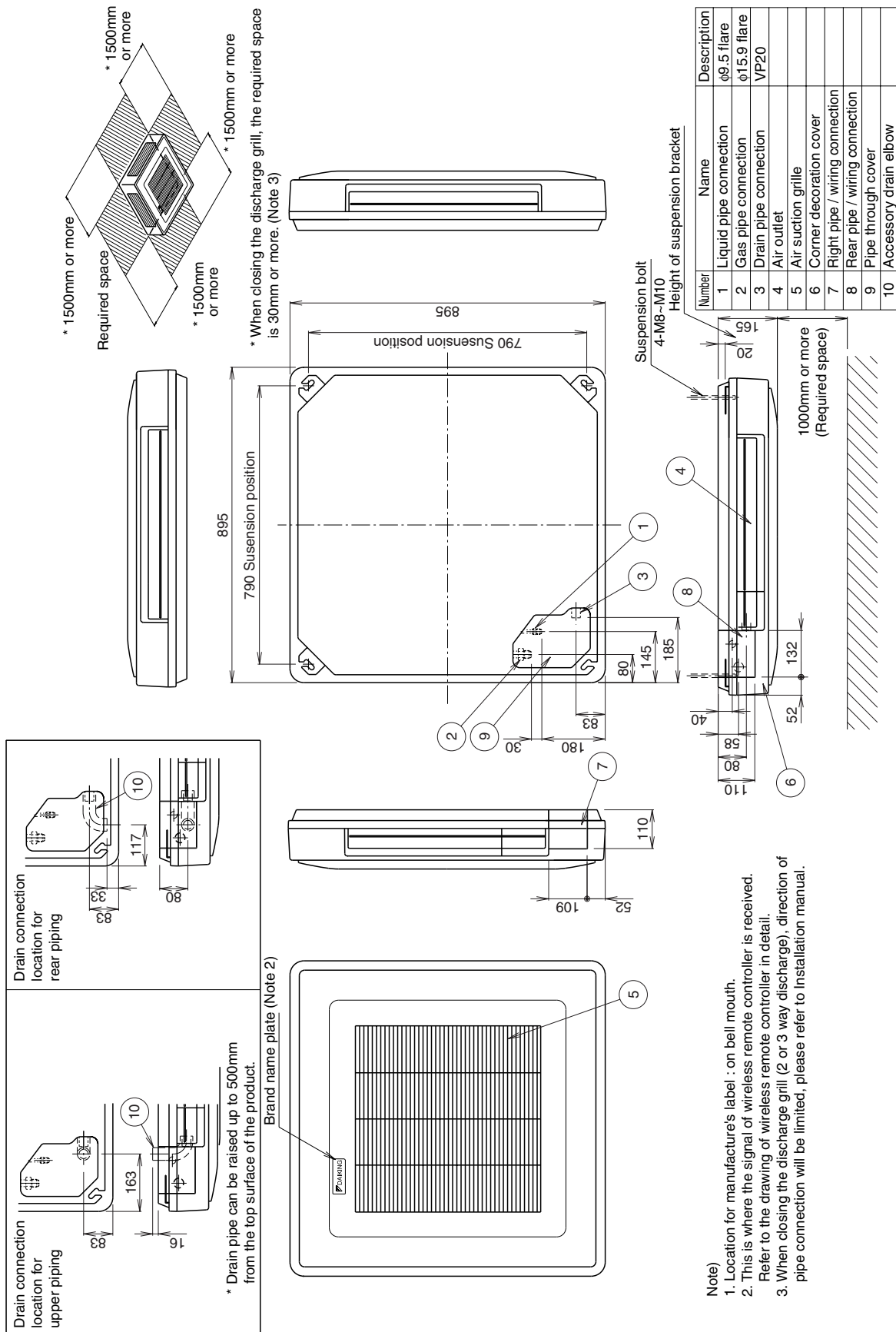


*1; Service space for switch box. (Service access panel is required for the bottom side. When there is nothing, 350 or more spaces are required.)
 *2; For electric valve drive part's maintenance. (a control box is removed)

3. Dimensions

FXUQ71MAV1

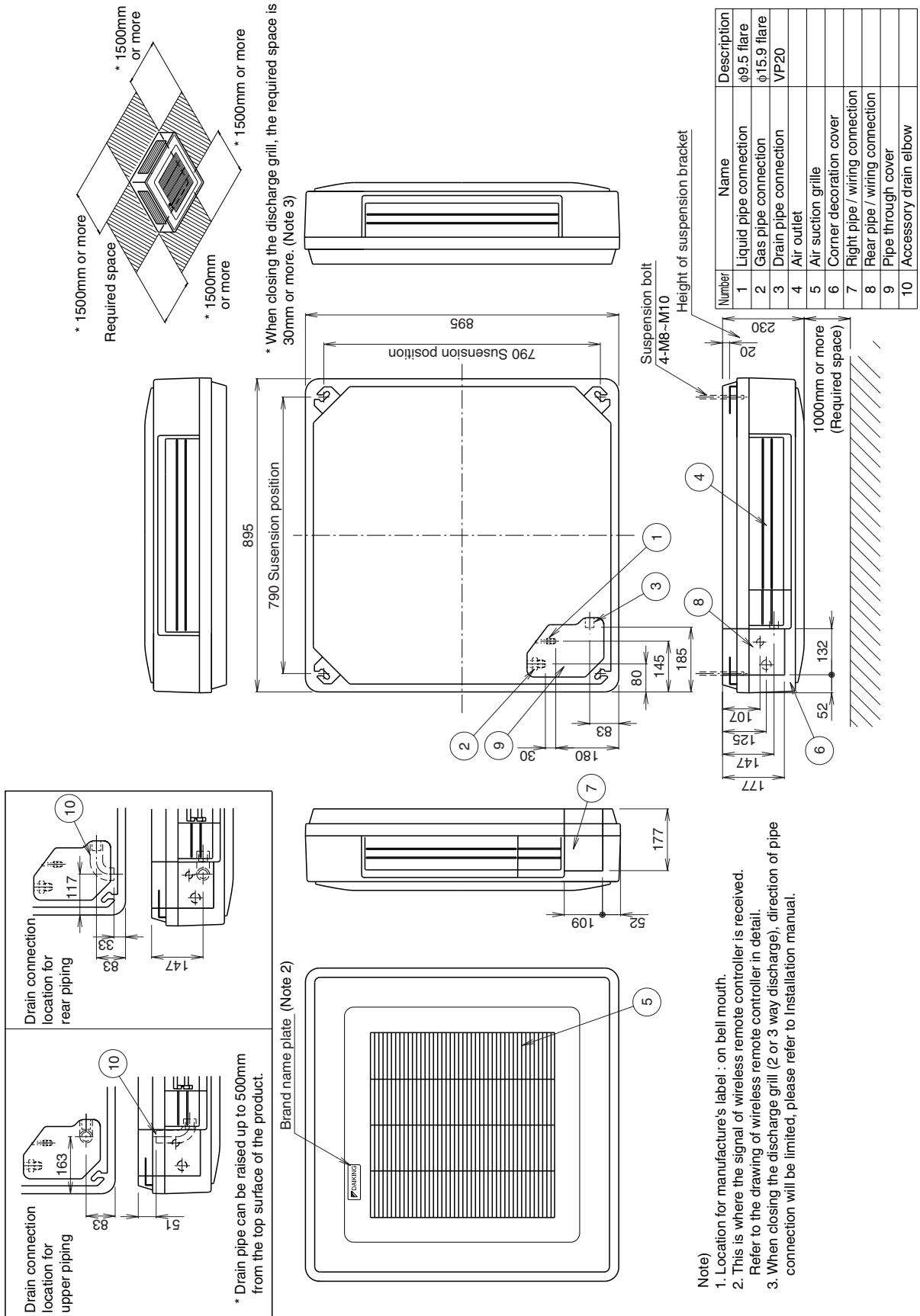
Unit (mm)



3D013860E

FXUQ100MAV1
FXUQ125MAV1

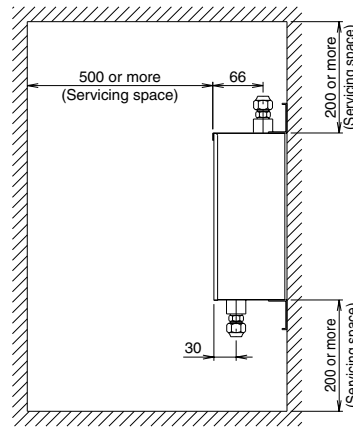
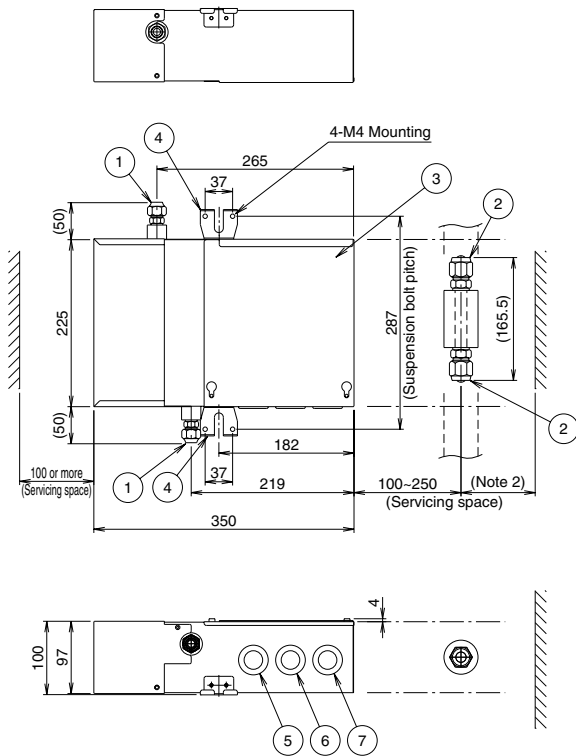
Unit (mm)



3D044898C

BEVQ71MA / 100MA / 125MAVE (When installing the unit on wall)

Unit (mm)



INSTALLATION FIGURE
(When installing the unit on wall)

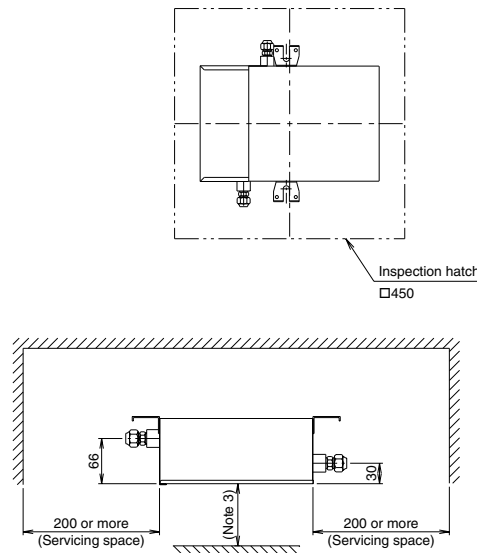
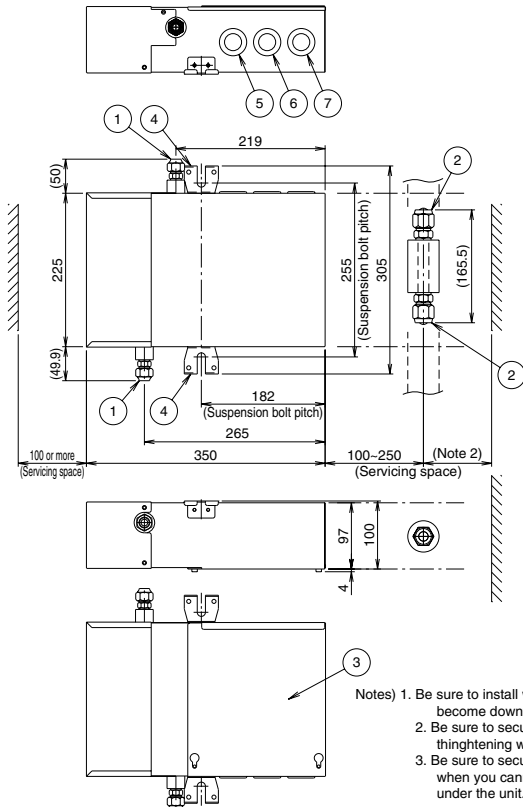
7	Wire connection port (Transmission (VRV) • Gas pipe thermistor)	
6	Wire connection port (Power supply • Ground)	
5	Wire connection port (Indoor unit connection)	
4	Suspension bolt	
3	Electric parts box	
2	Gas pipe connection port	φ15.9mm flare connection
1	Liquid pipe connection port	φ9.5mm flare connection
Number	Part name	Description

Notes) 1. Be sure to install wire connection port to be sure to become downward.
2. Be sure to secure the space which can be the tightening work of the flare nut.

C : 3D045389

BEVQ71MA / 100MA / 125MAVE (When hanging the unit from the ceiling)

Unit (mm)



INSTALLATION FIGURE
(When hanging the unit from the ceiling)

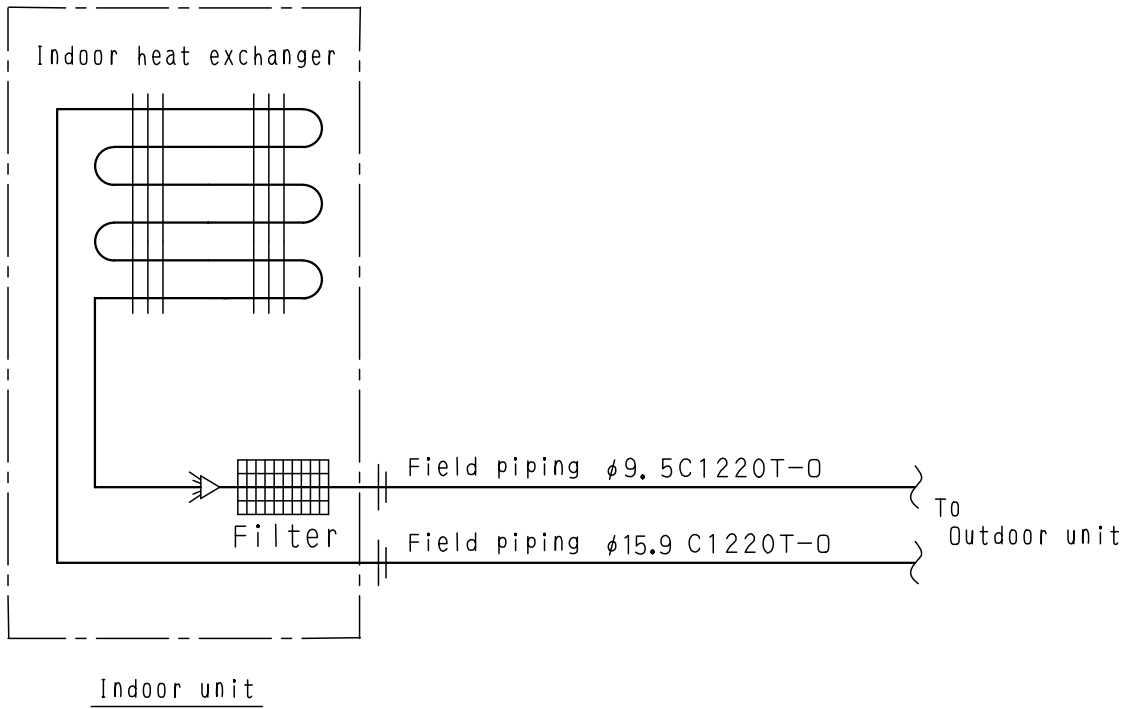
7	Wire connection port (Transmission (VRV) • Gas pipe thermistor)	
6	Wire connection port (Power supply • Ground)	
5	Wire connection port (Indoor unit connection)	
4	Suspension bolt	
3	Electric parts box	
2	Gas pipe connection port	φ15.9mm flare connection
1	Liquid pipe connection port	φ9.5mm flare connection
Number	Part name	Description

Notes) 1. Be sure to install wire connection port to be sure to become downward.
2. Be sure to secure the space which can be the tightening work of the flare nut.
3. Be sure to secure the space of 400mm or more when you cannot install the inspection hatch right under the unit.

C : 3D045390

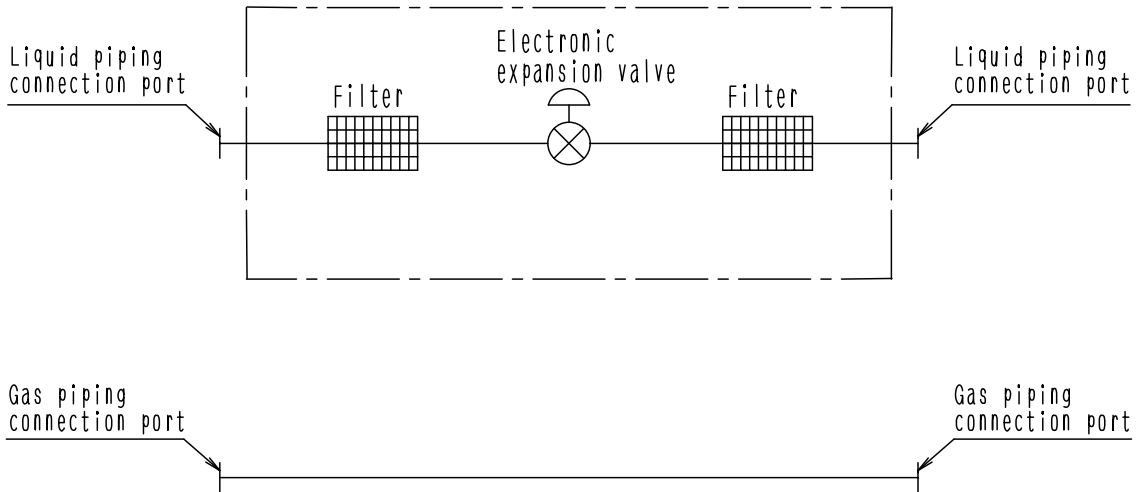
4. Piping Diagrams

Indoor unit



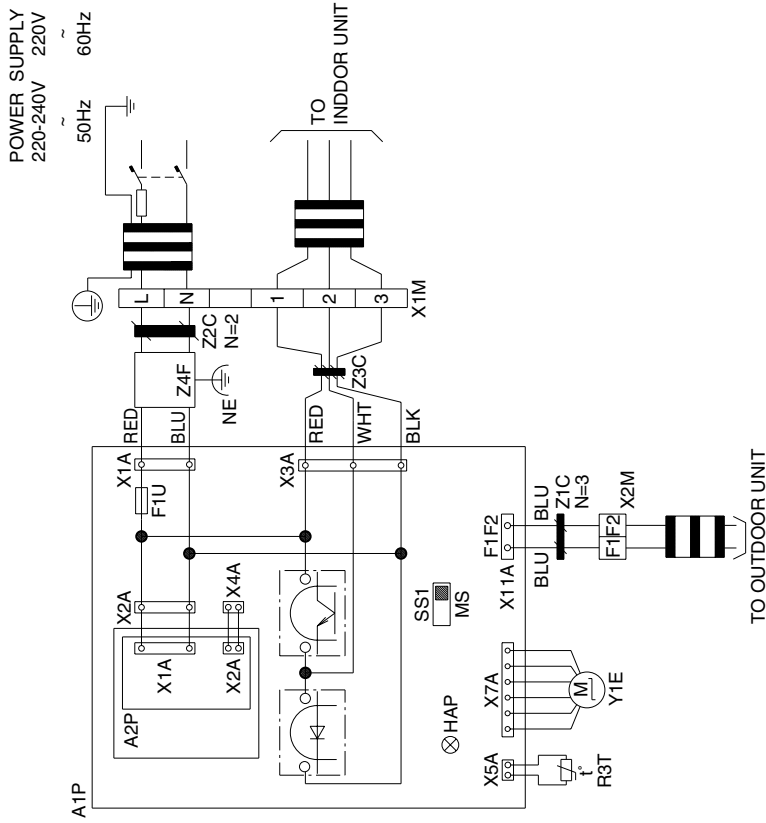
C: 4D037995H

Connection Unit

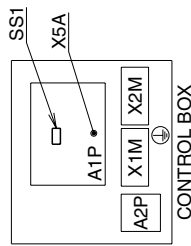


4D034127B

BEVQ71MAVE / BEVQ100MAVE / BEVQ125MAVE



BEV UNIT	
A1P	PRINTED CIRCUIT BOARD ASSY
A2P	POWER SUPPLY PRINTED CIRCUIT BOARD ASSY (220-240V/16V)
F1U	FUSE (B), 10A, 250V
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR-GRREN)
R3T	THERMISTOR (GAS)
SS1	SELECTOR SWITCH (M/S)
X1M	TERMINAL STRIP (POWER)
X2M	TERMINAL STRIP (TRANSMISSION)
Y1E	ELECTRONIC EXPANSION VALVE
Z1C • Z2C Z3C • Z4F	NOISE FILTER



- NOTES) 1. [Symbol] : TERMINAL [Symbol] : CONNECTOR
 2. [Symbol] : FIELD WIRING
 3. THIS WIRING DIAGRAM ONLY SHOWS THE BEV UNIT.
 4. SEE THE WIRING DIAGRAMS AND INSTALLATION MANUALS FOR THE WIRING AND SETTINGS FOR THE INDOOR, OUTDOOR, AND BS UNITS.
 5. SEE THE INDOOR UNIT'S WIRING DIAGRAM WHEN INSTALLING OPTIONAL PARTS FOR THE INDOOR UNIT.
 6. ONLY ONE INDOOR UNIT MAY BE CONNECTED TO THE BEV UNIT.
 7. SEE THE INDOOR UNIT'S WIRING DIAGRAM FOR WHEN CONNECTING THE REMOTE CONTROL.
 8. ALWAYS USE THE SKY AIR CONNECTION ADAPTER FOR THE INDOOR UNIT WHEN USING A CENTRAL CONTROL UNIT.
 9. REFER TO THE MANUAL ATTACHED THE UNIT WHEN CONNECTING.
 10. COOL/HEAT CHANGEOVER OF INDOOR UNITS CONNECTED TO BEV UNIT CANNOT BE CARRIED OUT UNLESS THEY ARE CONNECTED TO BS UNIT.
 11. IN CASE OF A SYSTEM WITH BEV UNIT ONLY, COOL/HEAT SELECTOR IS REQUIRED.
 12. SET THE SS1 TO "M" ONLY FOR THE BEV UNIT CONNECTED TO THE INDOOR UNIT WHICH IS TO HAVE COOL/HEAT SWITCHING CAPABILITY, WHEN CONNECTING THE BS UNIT.
 13. THE "M/S" ON THE SS1 STANDS FOR "MAIN/SUB".
 14. THIS IS SET TO "S" WHEN SHIPPED FROM THE FACTORY.
 15. CONNECT THE ATTACHED THERMISTOR TO THE R3T.
 16. SYMBOLS SHOW AS FOLLOWS.
 17. (BLU : BLUE RED : RED WHT : WHITE BLK : BLACK)

3D044901B

6. Electric Characteristics

Model	Units			Power supply		IFM		Input(W)	
	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
BEVQ71M(A)VE + FXUQ71M(A)V1	50	220-240	MAX. 264 Min. 198	0.8	15	0.045	0.6	189	169
BEVQ100M(A)VE + FXUQ100M(A)V1				1.3	15	0.090	1.0	298	278
BEVQ125M(A)VE + FXUQ125M(A)V1									

Symbols :

MCA : Min. Circuit Amps (A)
 MFA : Max. Fuse Amps (See note 5)
 KW : Fan Motor Rated Output(KW)
 FLA : Full Load Amps(A)
 IFM : Indoor Fan Motor

Note :

- Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits,
- Maximum allowable voltage unbalance between phases is 2%.
- MCA/MFA

$$MCA = 1.25 \times FLA$$

$$MFA \leq 4 \times FLA$$
 (Next lower standard fuse rating. Min. 15A)
- Select wire size based on the MCA.
- Instead of fuse, use Circuit Breaker.

C: 4D034128B

7. Capacity Tables

7.1 Cooling Capacity

FXUQ-MA

[50Hz]

Unit Size	Indoor air temp.												Cooling capacity			
	14.0°CWB 20°CDB		16.0°CWB 23°CDB		18.0°CWB 26°CDB		19.0°CWB 27°CDB		20.0°CWB 28°CDB		22.0°CWB 30°CDB		24.0°CWB 32°CDB		TC	SHC
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC		
71	100	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.5	6.0	9.6	6.2	10.5	6.3	6.3
	120	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.5	6.0	9.6	6.2	10.4	6.2	6.2
	140	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.5	6.0	9.6	6.2	10.3	6.2	6.2
	160	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.5	6.0	9.6	6.2	10.1	6.1	6.1
	180	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.5	6.0	9.6	6.2	10.0	6.0	6.0
	200	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.5	6.0	9.6	6.2	9.8	5.9	5.9
	210	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.5	6.0	9.6	6.2	9.8	5.9	5.9
	230	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.5	6.0	9.6	6.2	9.6	5.8	5.8
	250	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.5	6.0	9.6	6.2	9.5	5.7	5.7
	270	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.5	6.0	9.6	6.2	9.4	5.7	5.7
	310	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.5	6.0	9.6	6.2	9.2	5.7	5.7
	350	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.5	6.0	9.6	6.2	8.9	5.6	5.6
100	100	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.4	6.0	9.6	5.7	8.9	5.5	5.5
	120	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.4	6.0	9.6	5.7	8.9	5.5	5.5
	140	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.4	6.0	9.6	5.7	8.9	5.5	5.5
	160	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.4	6.0	9.6	5.7	8.9	5.5	5.5
	180	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.4	6.0	9.6	5.7	8.9	5.5	5.5
	200	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.4	6.0	9.6	5.7	8.9	5.5	5.5
	210	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.4	6.0	9.6	5.7	8.9	5.5	5.5
	230	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.4	6.0	9.6	5.7	8.9	5.5	5.5
	250	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.4	6.0	9.6	5.7	8.9	5.5	5.5
	270	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.4	6.0	9.6	5.7	8.9	5.5	5.5
	310	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.4	6.0	9.6	5.7	8.9	5.5	5.5
	350	5.4	4.8	6.4	5.2	7.5	5.8	8.0	6.0	8.4	6.0	9.6	5.7	8.9	5.5	5.5
125	100	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.9	8.3	13.4	8.4	14.7	8.5	8.5
	120	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.9	8.3	13.4	8.4	14.5	8.4	8.4
	140	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.9	8.3	13.4	8.4	14.4	8.3	8.3
	160	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.9	8.3	13.4	8.4	14.2	8.2	8.2
	180	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.9	8.3	13.4	8.4	14.0	8.1	8.1
	200	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.9	8.3	13.4	8.4	13.8	8.0	8.0
	210	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.9	8.3	13.4	8.4	13.7	7.9	7.9
	230	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.9	8.3	13.4	8.4	13.5	7.8	7.8
	250	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.9	8.3	13.4	8.4	13.3	7.7	7.7
	270	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.9	8.3	13.4	8.4	13.1	7.7	7.7
	310	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.9	8.3	13.4	8.4	12.9	7.6	7.6
	350	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.8	8.3	13.4	8.4	12.5	7.6	7.6
370	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.8	8.3	13.4	8.4	12.3	7.4	7.4	
390	7.6	6.6	9.0	7.1	10.5	8.0	11.2	8.2	11.7	8.3	13.4	8.4	12.2	7.3	7.3	
100	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	18.4	10.8	10.8	
120	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	18.2	10.7	10.7	
140	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	18.1	10.6	10.6	
160	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	17.9	10.5	10.5	
180	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	17.7	10.4	10.4	
200	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	17.5	10.3	10.3	
210	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	17.2	10.1	10.1	
230	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	17.1	10.0	10.0	
250	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	16.9	9.9	9.9	
270	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	16.6	9.9	9.9	
290	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	16.4	9.8	9.8	
310	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	16.2	9.7	9.7	
330	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	16.0	9.6	9.6	
350	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	15.8	9.5	9.5	
370	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.9	10.6	16.8	10.7	15.6	9.4	9.4	
390	9.5	8.0	11.3	9.0	13.1	9.9	14.0	10.4	14.3	10.2	14.8	9.6	15.0	9.3	9.3	

TC Total capacity : kW
SHC Sensible heat capacity : kW

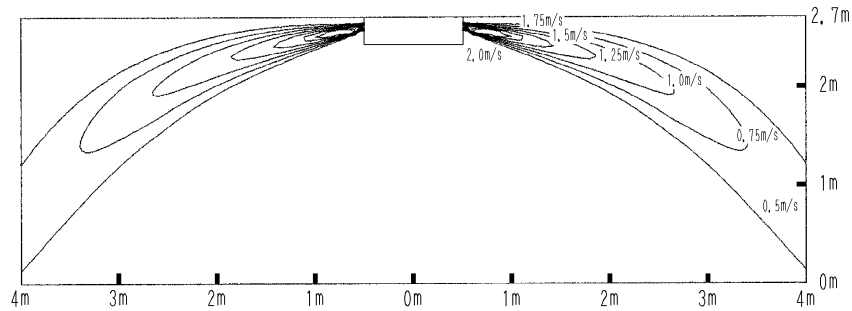
Refer to Outdoor Unit Capacity Tables : on page 491 ~, 552~, for the actual performance data of each indoor and outdoor unit combination.

8. Air Velocity and Temperature Distributions (Reference Data)

FXUQ71MA

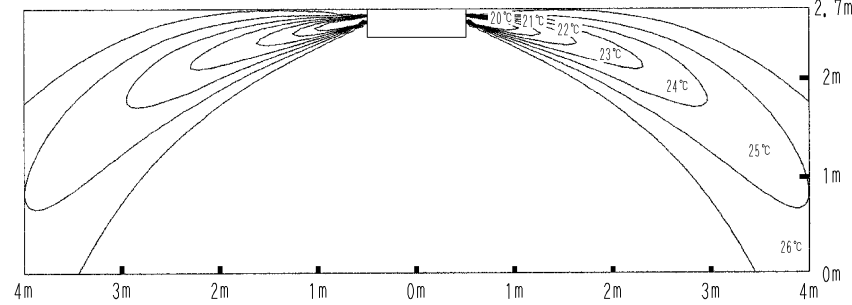
COOLING • AIR VELOCITY DISTRIBUTION

4 WAY DISCHARGE AIR FLOW DIRECTION : HORIZONTAL



COOLING • AIR TEMPERATURE DISTRIBUTION

4 WAY DISCHARGE AIR FLOW DIRECTION : HORIZONTAL

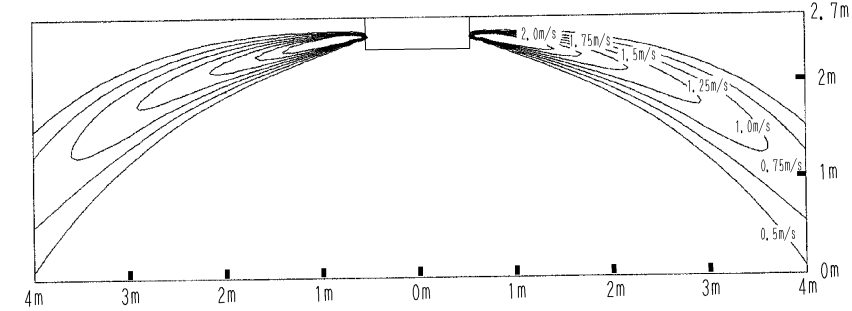


4D028396C

FXUQ100MA

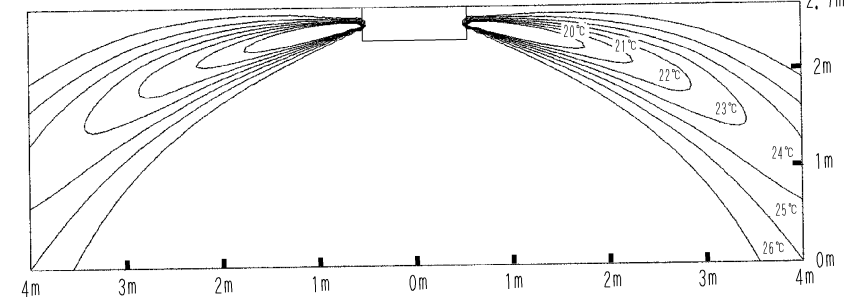
COOLING • AIR VELOCITY DISTRIBUTION

4 WAY DISCHARGE AIR FLOW DIRECTION : HORIZONTAL



COOLING • AIR TEMPERATURE DISTRIBUTION

4 WAY DISCHARGE AIR FLOW DIRECTION : HORIZONTAL

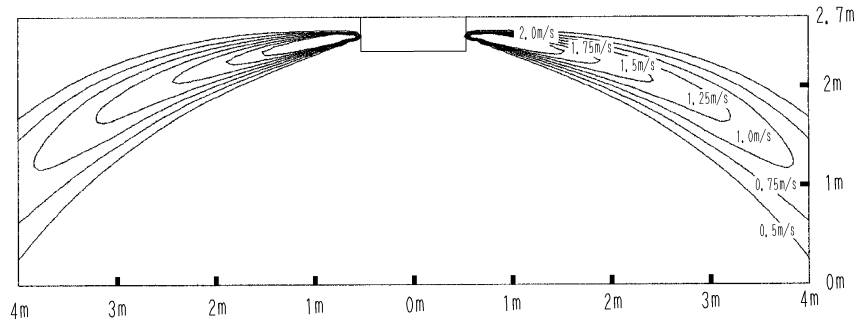


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FXUQ125MA

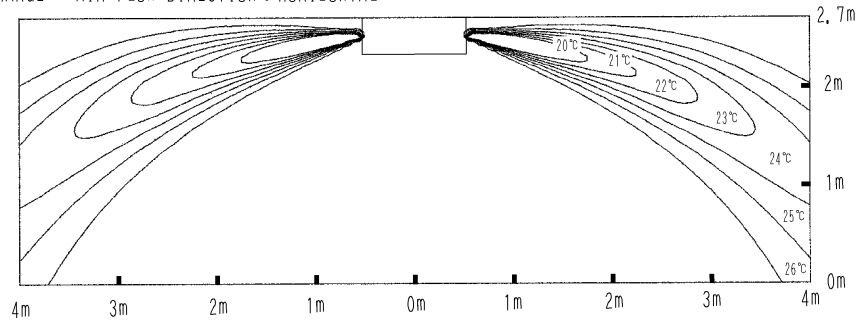
COOLING • AIR VELOCITY DISTRIBUTION

4 WAY DISCHARGE AIR FLOW DIRECTION : HORIZONTAL



COOLING • AIR TEMPERATURE DISTRIBUTION

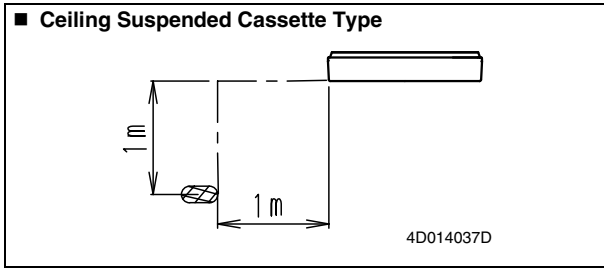
4 WAY DISCHARGE AIR FLOW DIRECTION : HORIZONTAL



4D028398C

9. Sound Levels

Overall



Notes:

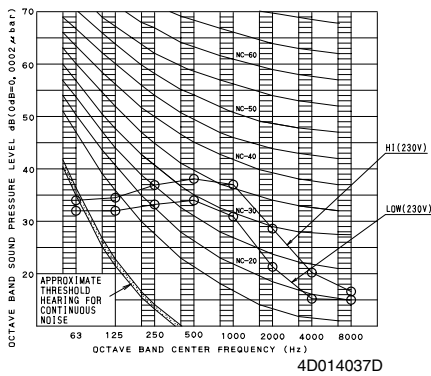
1. The operating conditions are assumed to be standard (JIS conditions).
2. These operating values were obtained in a dead room (conversion values).
Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

Model	230V, 50Hz	
	H	L
FXUQ71MAV1	40	35
FXUQ100MAV1	43	38
FXUQ125MAV1	44	39

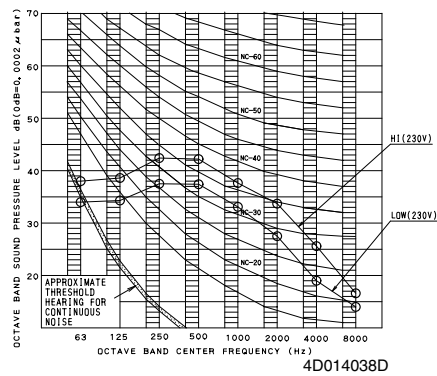
Octave Band Level

○ — ○ 230V 50Hz

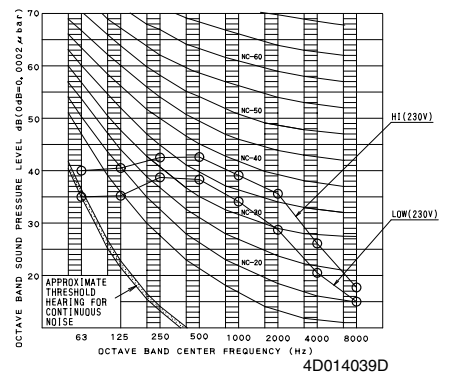
FXUQ71MAV1



FXUQ100MAV1



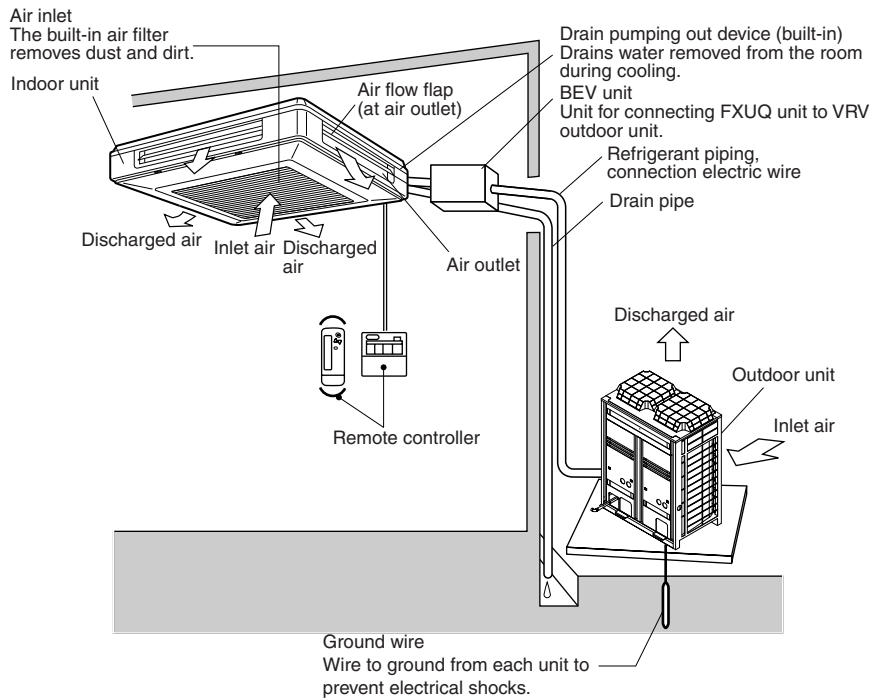
FXUQ125MAV1



10. Installation

10.1 Indoor Units

Installation Example



Service Space

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

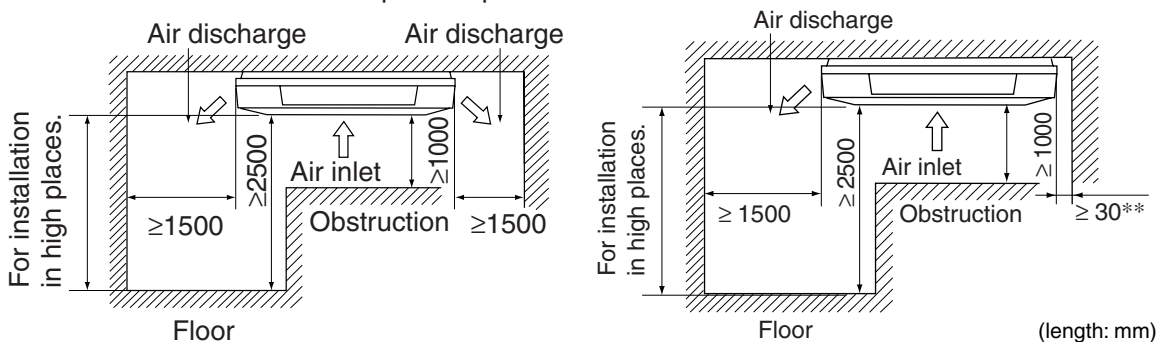
- In the upper space (including the back of the ceiling) of the indoor unit where there is no possible dripping of water from the refrigerant pipe, drain pipe, water pipe, etc.
- Where optimum air distribution can be ensured.
- Where nothing blocks air passage.
- Where condensate can be properly drained.
- Where the ceiling is strong enough to bear the indoor unit weight.
- Where the false ceiling is not noticeably on an incline.
- Where sufficient clearance for maintenance and service can be ensured.
- Where there is no risk of flammable gas leakage.
- Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual for the outdoor and BEV units.)

[CAUTION]

Only use the included parts or parts which match the specifications when installing the unit.

- Install the indoor unit no less than 2.5 m above the floor. Where unavoidably lower, take what measures are necessary to keep hands out of the air outlet.

Space required for installation



** Space is required to attach/detach corner covers.

Bolt Pitch

1. FOR 4-WAY AIR DISCHARGE

1. Relation of holes for indoor unit, suspension bolt position, piping and wiring. (Refer to Fig. 2)

(Illustrations seen from ceiling)

- * Dimensions in () for 100 and 125 models
- *** Suspension bolt pitch

2. Make holes for suspension bolts, refrigerant and drain piping, and wiring. (Refer to Fig. 3)

- Refer to the paper patten for the locations.
- Select the location for each of holes and open the holes in the ceiling.

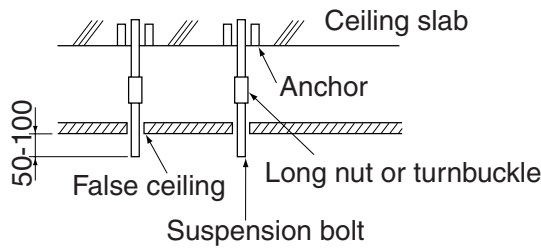
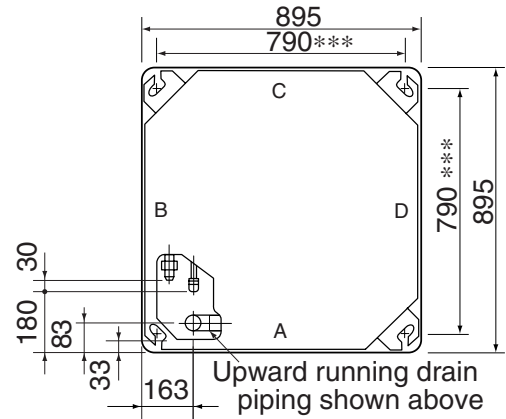


Fig. 3

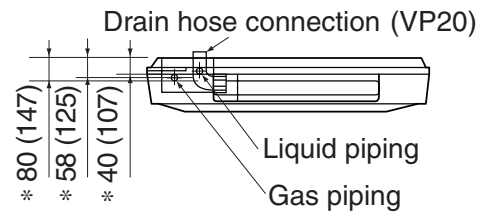


Fig. 2

NOTE

All the above parts are field supplied.

2. FOR 2-WAY OR 3-WAY AIR DISCHARGE

2-way and 3-way air discharge must be set from the remote controller. For details, see FIELD SETTING.

1. Relation of holes for indoor unit, suspension bolt position, piping and wiring. (Refer to Fig. 8)

NOTE

(Illustrations seen from ceiling)

- * Dimension in () for 100 and 125 models
- ***Suspension bolt pitch

2. Make holes for suspension bolts, refrigerant and drain piping, and wiring. (Refer to Fig. 9)

- Refer to paper pattern for the locations.
- Select the location for each of holes and open the holes in the ceiling.

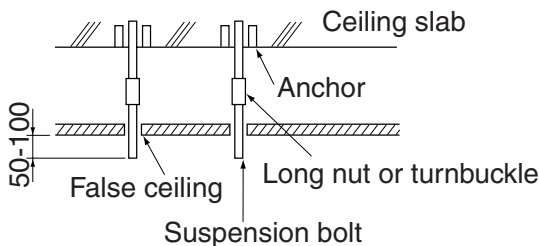
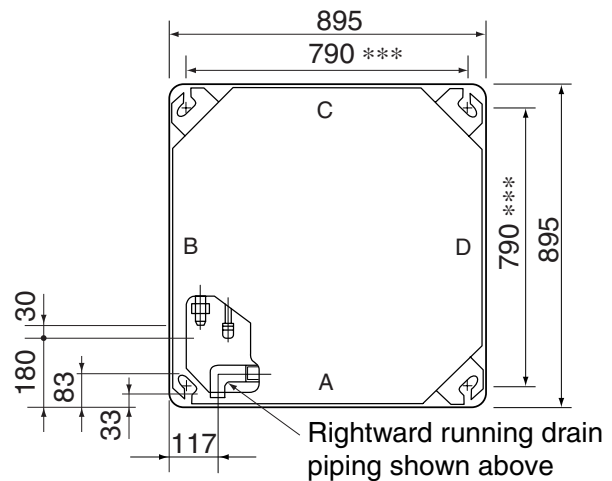


Fig. 9

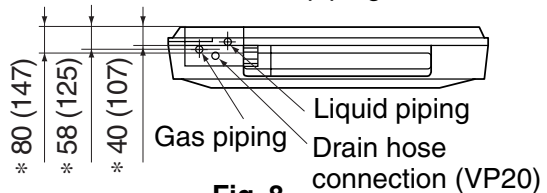


Fig. 8

Drain Piping Work

1. Rig drain piping (Refer to Fig. 26)

As for drain work, perform piping in such a manner that water can be drained properly.

As for drain piping, the connection can be made from three different directions.

- Employ a pipe with either the same diameter or with the diameter larger (excluding the raising section) than that of the connecting pipe (PVC pipe, nominal diameter 20 mm, outside diameter 26 mm).
- Keep the drain pipe short and sloping downwards at a gradient of at least 1/100 to prevent air pockets from forming. (Refer to Fig. 27)

CAUTION

Water pooling in the drainage piping can cause the drain to clog.

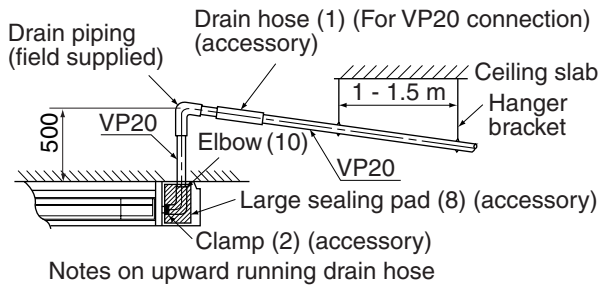


Fig. 26

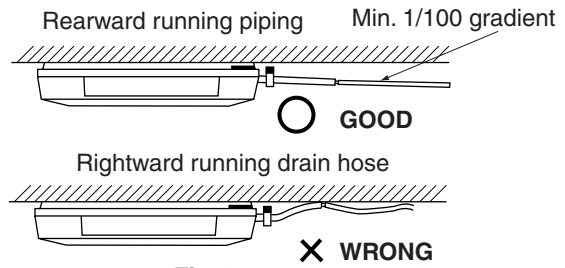


Fig. 27

- To keep the drain hose from sagging, space hanging wires every 1 to 1.5 m. (Refer to Fig. 26)
- Use only the included drain hose (1), (for rightward running drain hose) or elbow (10) (for upward running drain hose) and clamp (2).
- Fit the drain hose (1) or elbow (10) over the drain pipe up to the neck and fasten tight with the clamp (2).
- Insulate the clamp (2) and drain hose or elbow (10) with the included sealing pad (8). (Refer to Fig.28)
- Make sure that heat insulation work is executed on the following 2 spots to prevent any possible water leakage due to dew condensation.
 - Insulate the drain hose inside the building.
 - Drain socket

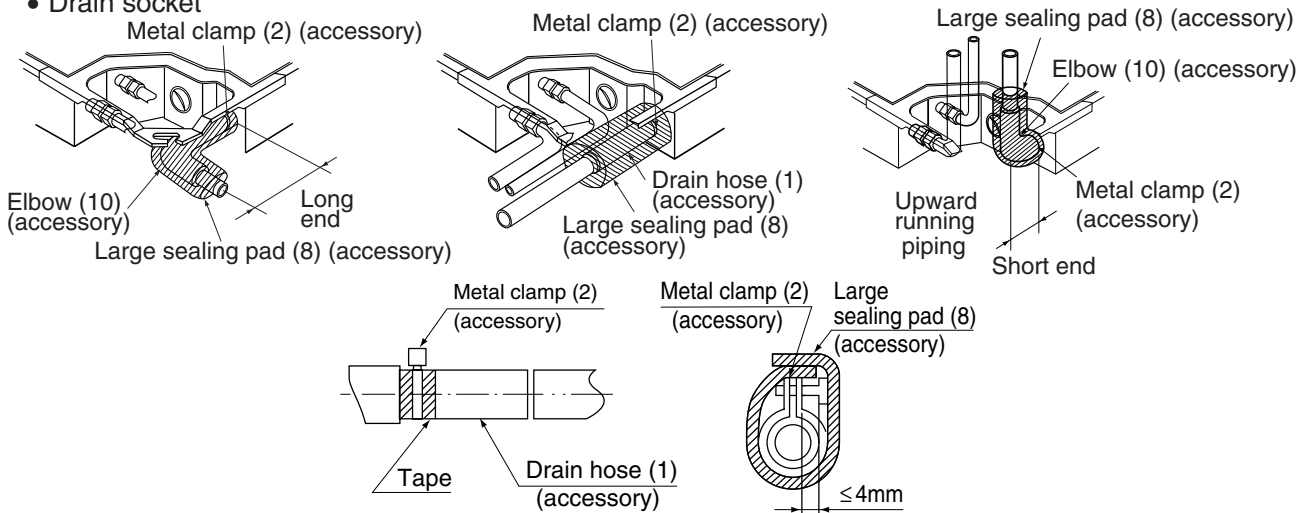


Fig. 28

CAUTION

- Do not twist or bend the drain hose (1), so that excessive force is not applied to it, as this could cause leaks.

- If converging multiple drain piping, install according to the procedure shown below. (Refer to Fig. 29)

Select converging drain piping whose gauge is suitable for the operating capacity of the unit.

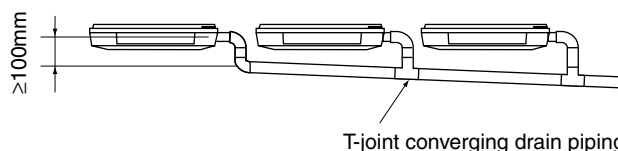
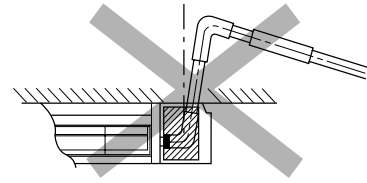


Fig. 29

PRECAUTIONS FOR UPWARD DRAIN RAISING PIPING

- Install the drain raising pipes at a height of less than 500 mm.
- Install the drain raising pipes at a right angle to the indoor unit. (Refer to Fig. 30)



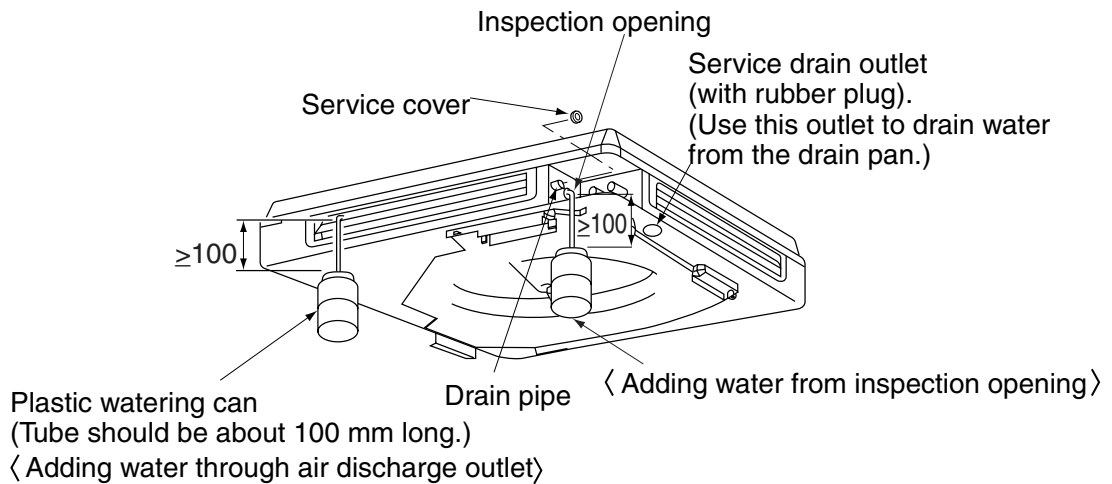
WRONG
Fig. 30

⚠ CAUTION

If the upward running drain hose leans at a slant, the float switch will malfunction and water will leak.

2. After piping work is finished, check if drainage flows smoothly.

- Open the water inlet lid, add approximately 1 liter of water slowly and check drainage flow. (Refer to Fig. 31)



Method of adding water

Fig. 31

[Caution]

Drain piping connections

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

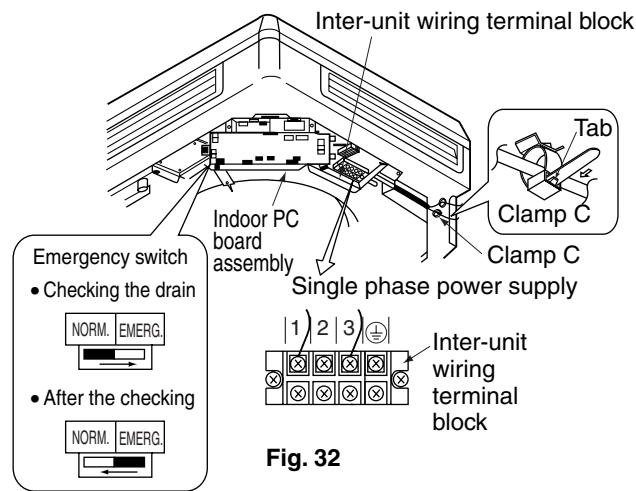
CAUTION

- Electrical wiring work should be done by a certified electrician.
- If someone who does not have the proper qualifications performs the work, perform the following after the test run is complete.

- Remove the control box lid and change the emergency switch above the PC board assembly of the indoor unit from "NORM." to "EMERG.". Connect the single-phase power supply (1, 3) and ground wire to the inter-unit wiring (50Hz 220-240V) terminal block and confirm drain operation. Be sure to change the switch before turning on the power. **(Refer to Fig. 32)**

CAUTION

- Clamp solidly to clamp C to tension is not added to the wiring connections.
 - Be aware that the fan will turn during the operation.
-
- After confirming drainage, turn off the power and be sure to change the emergency switch back to "NORM.".



10.2 Connecting Units

Before Installation

- When moving the unit while removing it from the carton box, be sure to lift it by holding on to the two lifting lugs without exerting any pressure on other parts, especially, the refrigerant piping.
- Be sure to check the type of R-410A refrigerant to be used before installing the unit. (Using an incorrect refrigerant will prevent normal operation of the unit.)
- BEV unit is an electronic expansion valve unit for allowing the indoor unit to be connected to the system for the VRV system.
- BEV unit may only be connected to the models shown in the table below. Do not attempt connection with other models.

Indoor unit
Ceiling Suspended Cassette Type

- See the included installation manuals on the VRV outdoor unit and the ceiling suspended cassette type indoor unit for details.
- For the indoor unit connected to the BEV unit, cooling/heating cannot be switched over with the remote controller.
- When the cooling/heating free system is connected to the BS unit, a cooling/heating selection right is allowed.
- When the ceiling suspended cassette type indoor unit and BEV unit are used for all indoor units, a separate "Cool/Heat SELECTOR" is needed to enable the cooling/heating switchover.

Service Space.

《 When hanging the unit from the ceiling 》

Install so that the control box lid is facing down.

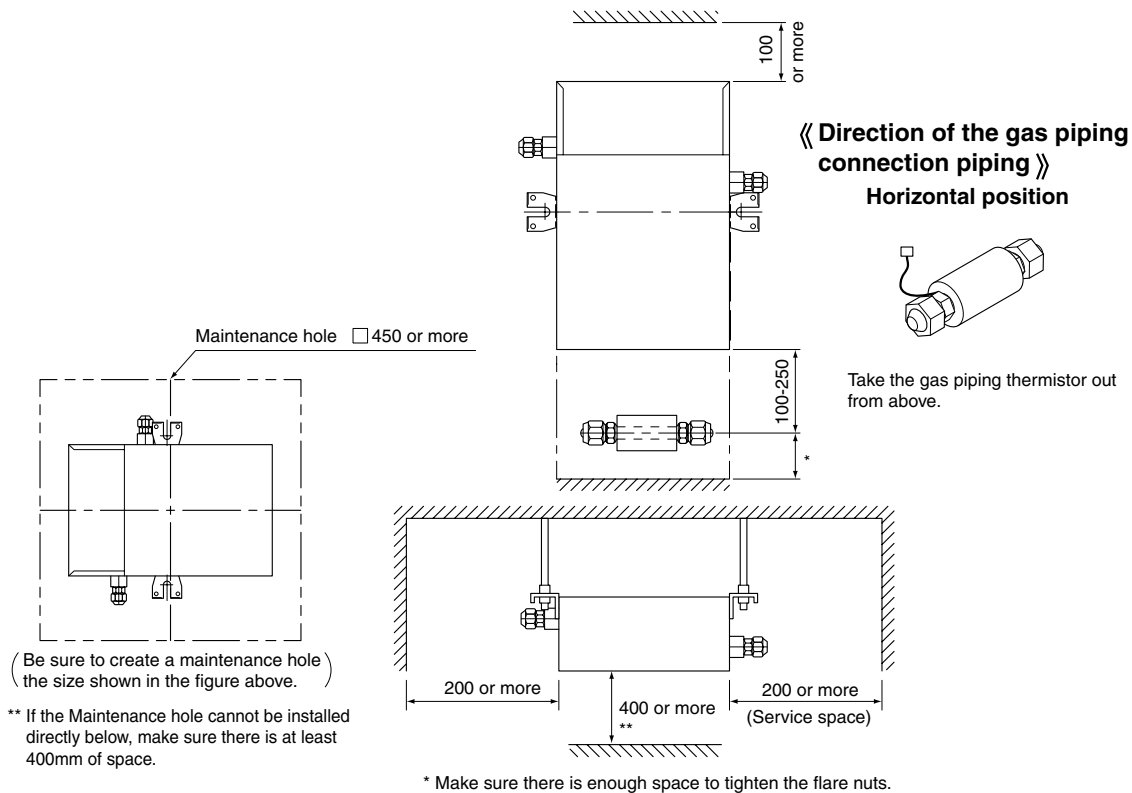
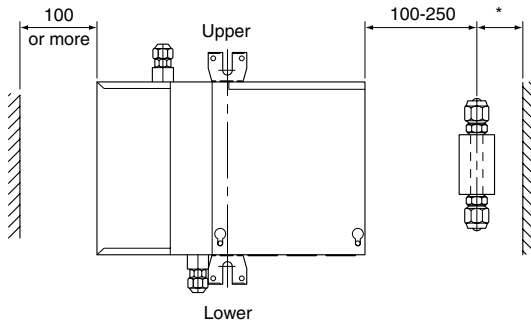


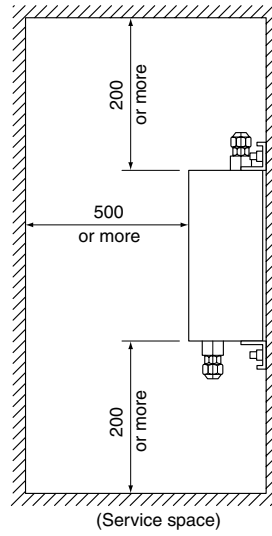
Fig. 1
(length: mm)

« When installing the unit on a wall »

Make sure the wiring outtake is facing down, and no other direction.

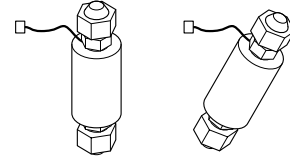


* Make sure there is enough space to tighten the flare nuts.



« Direction of the gas piping connection piping »

Upright and diagonal position



Take the gas piping thermistor out from above.

Fig. 2
(length: mm)

Bolt Pitch

《 When hanging the unit from the ceiling 》

(1) Check the relative locations of ceiling hole, unit, and hanging bolts.

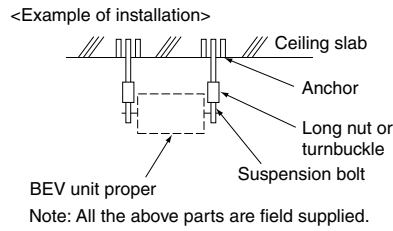
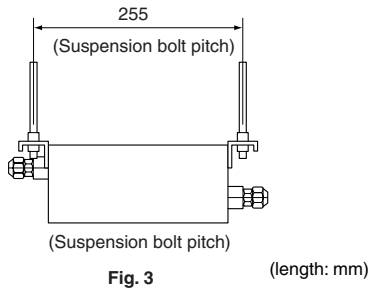


Fig. 4

(2) Open the eyebolt holes or the holes for passing the piping and wiring out of the unit.

- Set the locations for the above holes, open them up and then lay the piping (refrigerant) and wiring (including both power supply and transmission wiring) up to the piping and wiring connections in the unit.
- It might be necessary to reinforce the ceiling frame to maintain the levelness and to prevent vibration. Consult an architect or carpenter for details.

(3) Install the hanging bolts. (Use M8 hanging bolts.)

- If it is pre-set, use hole-in anchors. Otherwise, use embedded inserts or embedded foundation bolts to make sure that the weight of the unit can be supported. Adjust the distance to the ceiling beforehand.

《 When installing the unit on a wall 》

(1) Check the relative locations of ceiling hole, unit, and hanging bolts.

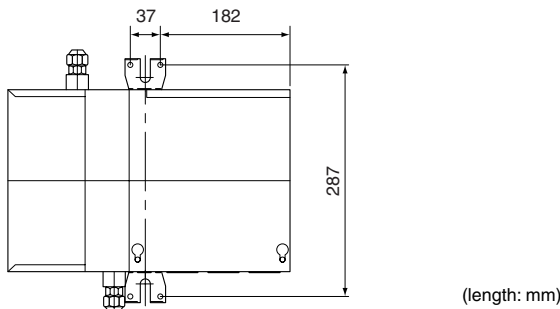


Fig. 5

- Use only accessories and parts which are of the designated specification when installing.

《 When hanging the unit from the ceiling 》

(1) Temporarily install the BEV unit.

- Mount the hanging fittings to hanging bolts. Secure the hanging fittings on the top and the bottom with nuts (M8, field supplied) and washers (M8: Outside diameter size 24 to 28 mm) (field supplied).

- (2) Adjust the height of the main unit with the nut.
- (3) Check that the main unit is installed on the level.
- (4) Tighten the nut on both the top and the bottom to fix securely.

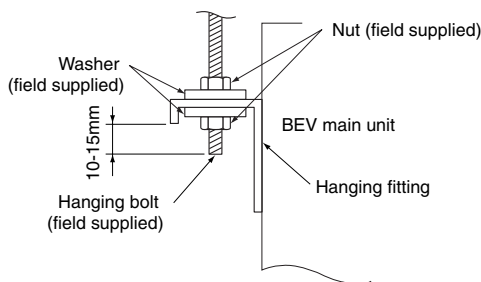


Fig. 6

《 When installing the unit on a wall 》

- (1) Mount the hanging fittings with the mounting screws (4 pieces).
- (2) Use M4 screws.

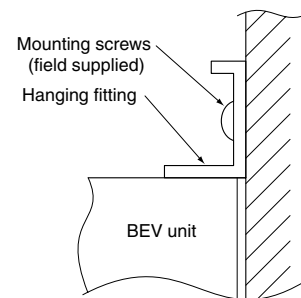


Fig. 7

Refrigerant Piping work

- < This shows the piping method between the outdoor unit and the BEV unit and the indoor unit. Select the pipe size and refrigerant branch kit depending on how the piping will be laid. >
- < For refrigerant piping of outdoor units, see the installation manual attached to the outdoor unit. >
- < Execute heat insulation work completely on both sides of the gas piping and the liquid piping. Otherwise, a water leakage can result sometimes. >
- < When using a heat pump, the temperature of the gas piping can reach up to approximately 120°C, so use insulation which is sufficiently resistant. >
- < Improve the insulation on the refrigerant piping depending on the installation environment. If the insulation is not sufficient, condensation 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 around the flare section before connecting.
- 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 air, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.

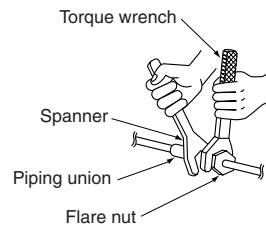
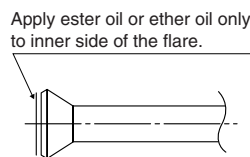
- The outdoor unit is charged with refrigerant.
- For the refrigerant piping and branching, follow the “piping connection procedure”.
- Be sure to use both a spanner and torque wrench together, as shown in the drawing, when connecting or disconnecting piping to/from the unit.
- Refer to the Table 1 for the dimensions of flare nut spaces.
- When connecting the flare nut, apply ether oil or ester oil only to inner side of the flare and initially tighten by hand 3 or 4 turns before tightening firmly.
- Refer to the Table 1 to determine the proper tightening torque.

Table 1

Pipe size	Tightening torque	Flare dimension A (mm)	Flare shape
φ 9.5 (3/8")	32.7 – 39.9N·m (333 – 407 kgf·cm)	12.8 – 13.2	
φ 15.9 (5/8")	61.8 – 75.4N·m (630 – 770 kgf·cm)	19.3 – 19.7	

NOTE

The flare nuts used must be those included with the main body.



CAUTION

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

Not recommendable 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.

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 2

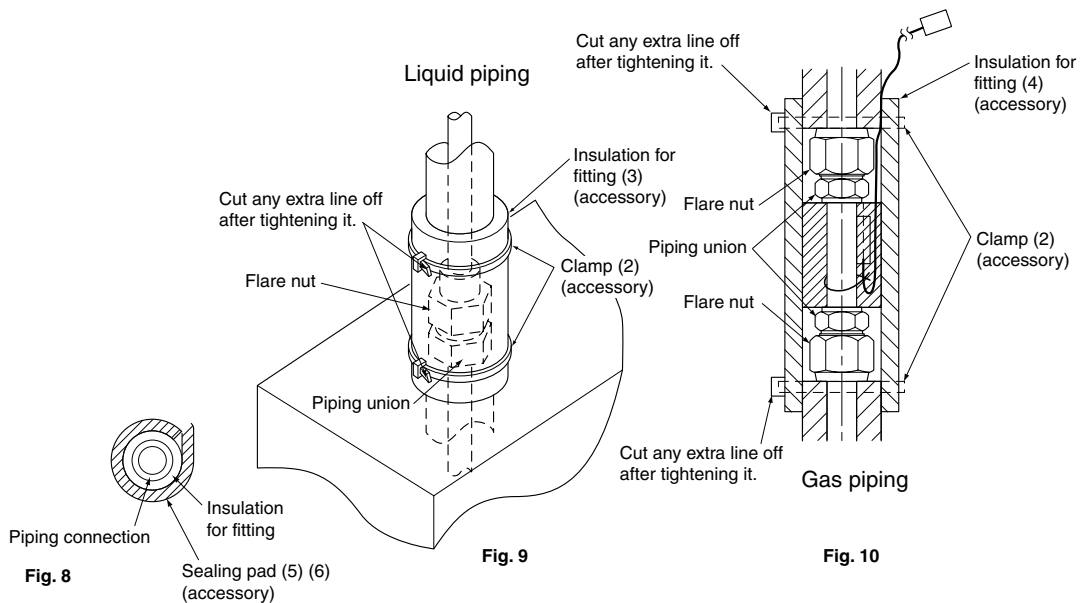
Pipe size	Further tightening angle	Recommended arm length of tool
φ 9.5 (3/8")	60 to 90 degrees	Approx. 200mm
φ 15.9 (5/8")	30 to 60 degrees	Approx. 300mm

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

- Make absolutely sure to execute heat insulation works on the pipe-connecting section after checking gas leakage by thoroughly studying the following figure.
- Wrap the insulation for fitting (3) (4) around the insulation for the joints on the liquid piping side and the gas piping side. **(Refer to Fig. 9, 10)**
- When installing the unit onto the ceiling, make sure that the seam between the insulation for fitting (3) (4) faces up. (Fasten both ends with the clamps (2).) (Fig.9, 10 shows the case of installation on the wall.)
- Wrap the included sealing pad (5) (6) around the insulation for fitting (3) (4). **(Refer to Fig. 8)**

CAUTION

Be sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensation 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) which does not require flux. (Flux has extremely harmful influence on refrigerant piping systems. For instance, if the chlorine based flux is used, it will cause piping 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 indoor unit with a flared connection.
- Nitrogen should be set to 0.02 MPa (0.2 kg/cm²) with a pressure-reducing valve if brazing while inserting nitrogen into the piping.

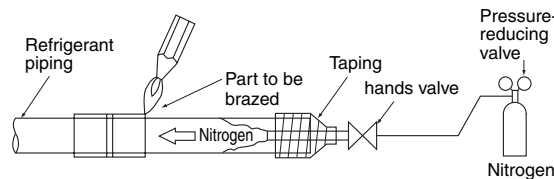


Fig. 11

CAUTION

Do not use anti-oxidants when brazing the piping joints. Residue can clog piping and break equipment.

Piping connection procedure

- Make sure the length of the refrigerant piping between the BEV unit and the indoor unit is no more than 5m and that the difference in height is at least 4m.

(1) Connection example for the indoor unit

- Only one indoor unit may be connected to each BEV unit.

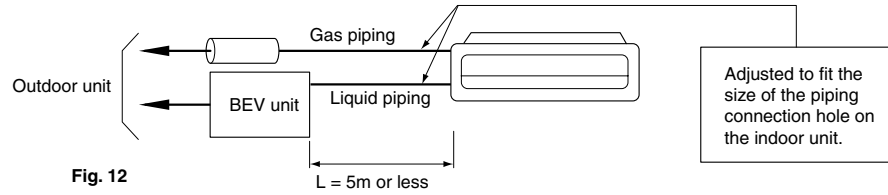


Fig. 12

(2) Height difference between indoor units

- Install the BEV unit in the 15m range of difference in height between the indoor units.
- Make sure the difference in height between the BEV unit and the indoor unit is no more than 4m.

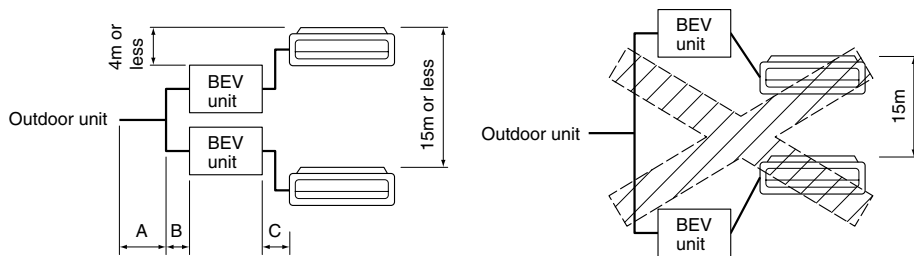


Fig. 13

(3) Allowable length after split (actual piping length)

$B+C \leq 35m$ (length from the first branch piping to the indoor unit)

(4) Additional refrigerant amount

When measuring the amount of additional to refrigerant to fill, include the length of the liquid piping between the BEV unit and the indoor unit.

Additional filling amount = $a+b+c+d+e+f+g+h+i+j+k+l+m+n+p+q$

Refer also to the installation manual included with the outdoor unit.

Example of refrigerant branch using a REFNET joint

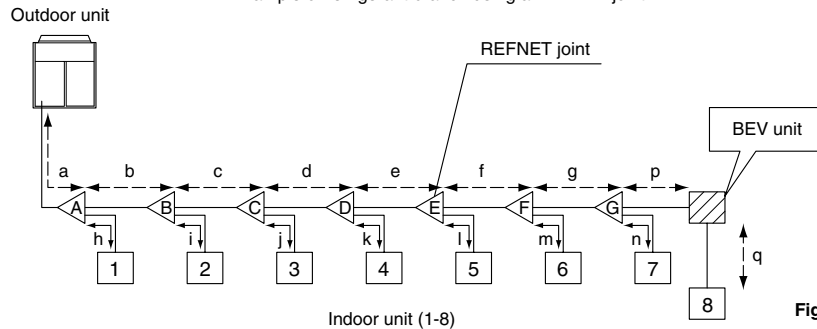


Fig. 14

Wiring Example and How to Set the Remote Controller

1 HOW TO CONNECT WIRINGS

- Connect the piping only after finishing the refrigerant piping work.
- Make sure all power supply is shut down to the unit first.
- As shown in the Fig. 16, loosen the two screws in the control box lid, remove it, and do the wiring work.
- Once all wiring is done, attach the control box lid and secure it with the screws.
If you are using "4. DEF AULT SETTINGS," however, finish that and then attach the control box lid and secure it with the screws.

2 THE GAS PIPING THERMISTOR

- Connect to (X5A) on A1P.
- Bundle the gas piping thermistor lead wire and the branch wiring (transmission) using the included clamping material.
- Tension is not added to the gas pipe thermistor lead wire coming out of the unit.
- **Power supply wiring • Ground wire**
Connect the wiring to R (L) and S (N) on the power supply terminal block (X1M). Also, connect the ground wire to the ground terminal. Take the wiring and the ground wire into the unit through the wiring pass-through hole, and firmly secure them together using the included clamp (1).
- **Indoor unit inter-unit wiring**
Connect the wires to 1, 2, and 3 on the power supply terminal block (X1M). Take the wires into the unit through the wiring pass-through hole, and firmly secure them using the included clamp (1).
- **Transmission wiring**
Connect the wires to F1 and F2 on the transmission terminal block (X2M). Take them into the unit through the wiring pass-through hole, and firmly secure the gas piping thermistor lead wire and the transmission wiring using the included clamp (1).

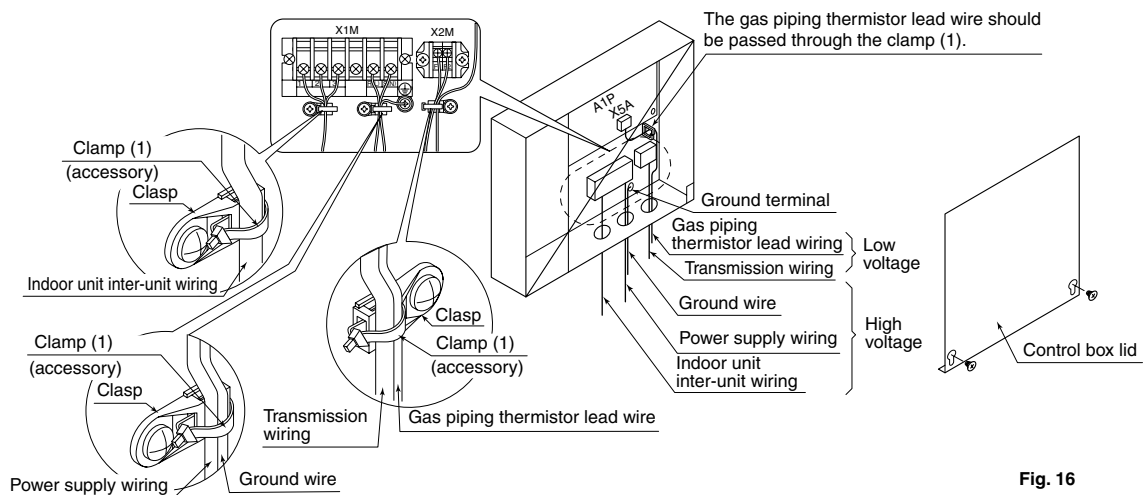


Fig. 16

[CAUTIONS]

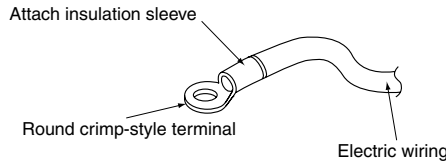
- Do not under any circumstances connect the power supply wiring to the transmission terminal block (F1, F2), as this may cause damage to the entire system.

⚠ CAUTION

- When clamping wiring, use the included clamping material to prevent outside pressure being exerted on the wiring connections and clamp firmly. When doing the wiring, make sure the wiring is neat and does not cause the control box lid to stick up, then close the cover firmly.
- When attaching the control box lid, make sure you do not pinch any wires.
- After all the wiring connections are done, fill in any gaps in the through holes with putty or insulation (procured locally) to prevent small animals and insects from entering the unit from outside. (If any do get in, they could cause short circuits in the control box.)
- Outside the machine, separate the weak wiring (gas piping thermistor lead wire, transmission wiring) and strong wiring (power supply wiring, inter-unit wiring, ground wire, and other power wiring) at least 50mm so that they do not pass through the same place together. Proximity may cause electrical interference, malfunctions, and breakage.

[PRECAUTIONS]

1. Use round crimp-style terminals for connecting wiring to the power supply terminal block. If unavailable, observe the following points when wiring.
 - Do not connect wiring of different gauge to the same power supply terminal. (Looseness in the connection may cause overheating.)
 - Use the specified electric wiring. Connect the wiring securely to the terminal. Lock the wiring down without applying excessive force to the terminal. (Tightening torque: 131N·cm ±10 %)



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 (2P)	M3.5	0.79 – 0.97N·m
Power supply and inter-unit wiring terminal block (6P)	M4	1.18 – 1.44N·m
Ground terminal	M4	1.44 – 1.94N·m

3. Do not connect wiring of different gauge to the same grounding terminal. Looseness in the connection may deteriorate protection.
4. Outside of the unit, keep the weak wiring (gas piping thermistor lead wire, transmission wiring) at least 50 mm away from strong wiring (power supply wiring, inter-unit wiring, ground wire, and other power wiring). The equipment may malfunction if subjected to electrical (external) noise.
5. For remote controller wiring, refer to the “INSTALLATION MANUAL OF REMOTE CONTROLLER” attached to the remote controller.
6. **Never connect power supply wiring to the terminal block for remote controller wiring. A mistake of the sort could damage the entire system.**
7. Use only specified wiring and tightly connect wiring to terminals. Be careful wiring do not place external stress on terminals. Keep wiring in neat order and so as not to obstruct other unit such as popping open the control 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)

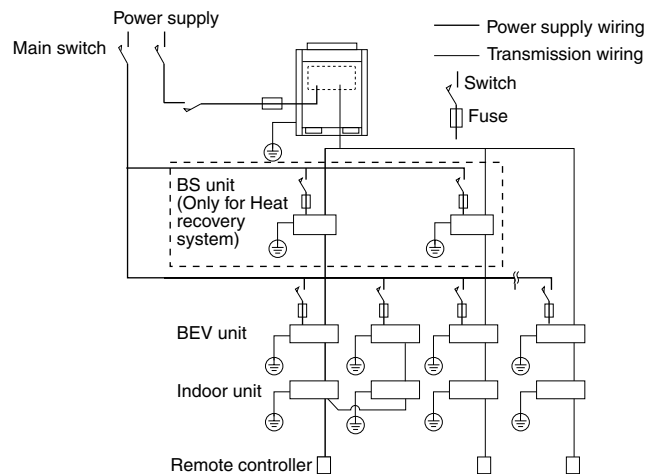


Fig. 17

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

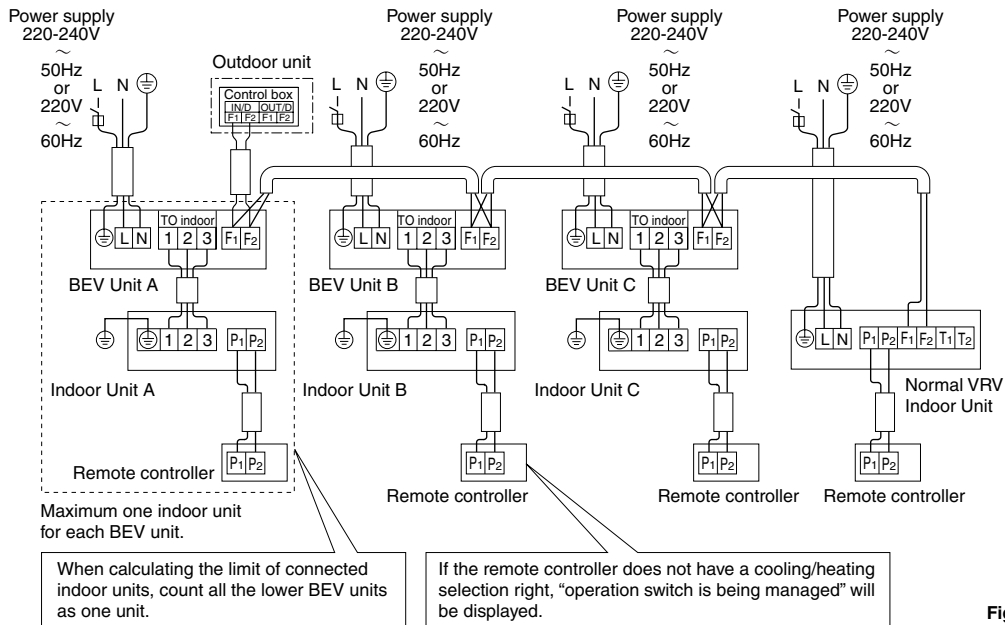


Fig. 18

<Caution>

Group control is not possible between ceiling suspended cassette type units and normal VRV indoor units.

2. For group control or use with 2 remote controllers

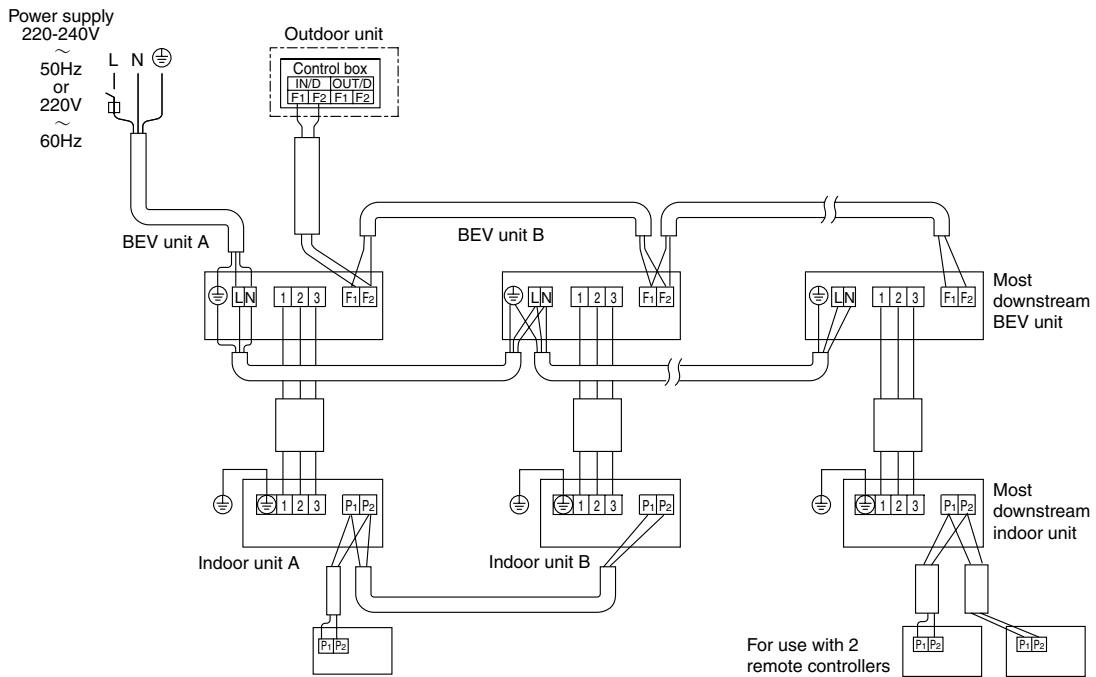


Fig. 19

3. When including BS unit

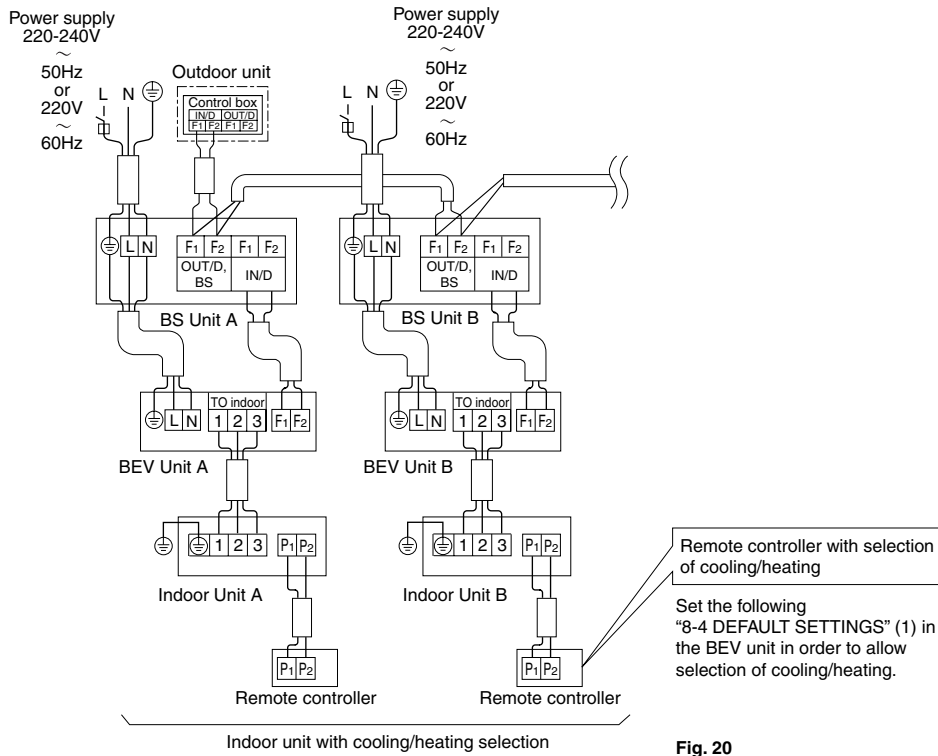
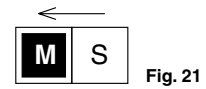


Fig. 20

4. DEFAULT SETTINGS















1. Once piping work is completed, conduct the following settings as needed.
 - (1) When connecting the BEV unit to the BS unit in the heating/cooling free system, turn the SS1 on the A1P to M (Main) for only one of the BEV units connected to the remote controller on which heating/cooling switching is made possible. **(Refer to Fig. 21)**
 - (2) For BEV unit-only systems
The Cool/Heat SELECTOR is needed.
Refer to the installation manual included with the Cool/Heat SELECTOR for details on how to set it.
2. Once all piping work is done, screw the control box lid shut using the mounting screws.



11. Accessories

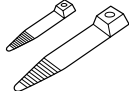
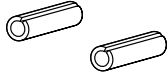
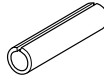


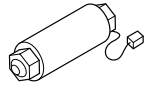
Standard Accessories (Indoor Unit)



Check the following accessories are included with the unit.

Name	1) Drain hose	2) Metal Clamp	3) Washer for looking hanger	4) Clamp	5) Wahers fixing plate
Quantity	1 pc.	1 pc.	8 pcs.	6 pcs.	4 pcs.
Shape					
Name	Insulation for fitting	Sealing pad	10) Elbow	11) Paper pattern for installation	12) Blocking pad
Quantity	1 each	2 pcs.	1 pc.	1 pc.	2 pcs.
Shape	6) For gas pipe  7) For liquid pipe	8) Large  9) Small 		Also used as packing material 	
Name	13) Retainer for blocking pad	14) Retainer for blocking pad	15) Center retainer for blocking pad	(Other) • Operation manual • Installation manual	
Quantity	2 pcs.	2 pcs.	2 pcs.		
Shape					

Standard Accessories (Connecting Unit)

Check if the following accessories are included with your unit.

Name	Clamp	Insulation for fitting	Sealing pad	(7) Gas piping connection piping
Quantity	9 pcs.	3 pcs.	3 pcs.	1 pc.
Shape	(1) 3 short pieces  (2) 6 long pieces	(3) For liquid piping × 2  (4) For gas piping × 1 	(5)  Small × 2 (6)  × 1	

Name	(8) Installation manual	(9) Nameplate
Quantity	1 pc.	1 pc.
Shape		

Optional Accessories (For Indoor Unit)

No.	Type	FXUQ71MAV1	FXUQ100MAV1	FXUQ125MAV1
	Item			
1	Sealing Member of Air Discharge Outlet	KDBHJ49F80	KDBHJ49F140	
2	Decoration Panel for Air Discharge	KDBTJ49F80	KDBTJ49F140	
3	Vertical Flap Kit	KDGJ49F80	KDGJ49F140	
4	Replacement Long Life Filter	KAFJ495F140		
5	L Connection Piping Kit	KHFP49M140		

C: 3D045452A

Optional Accessories (For Controls) Refer to P.645

Sealing Member of Air Discharge Outlet – KDBHJ49F80 · 140

Dimension

Model	A	B
KDBHJ49F80	100	100
KDBHJ49F140	155	155

Model	Material
KDBHJ49F80	Galvanized Steel Plate
KDBHJ49F140	(with Flocking)

Decoration Panel for Air Discharge – KDBTJ49F80 · 140

Dimension

Model	A	B
KDBTJ49F80	100	100
KDBTJ49F140	155	155

Model	Material
KDBTJ49F80	Galvanized Steel Plate
KDBTJ49F140	(with Flocking)

Vertical Flap Kit – KDGJ49F80 · 140

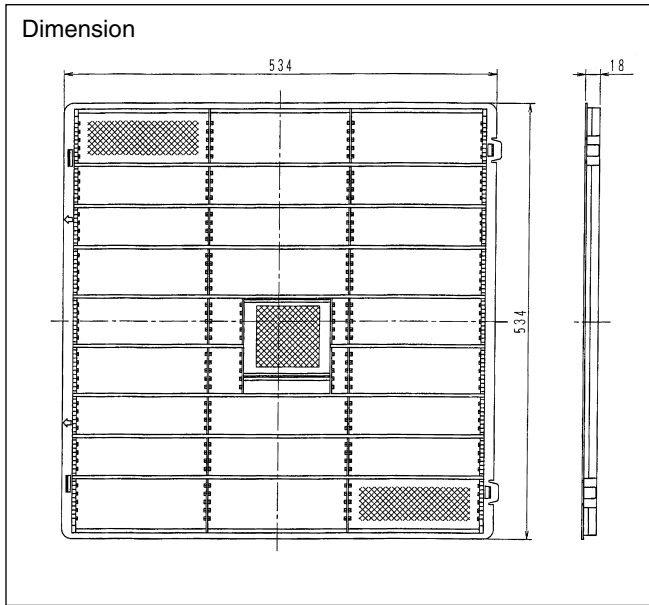
Dimension

KDGJ49F80

KDGJ49F140

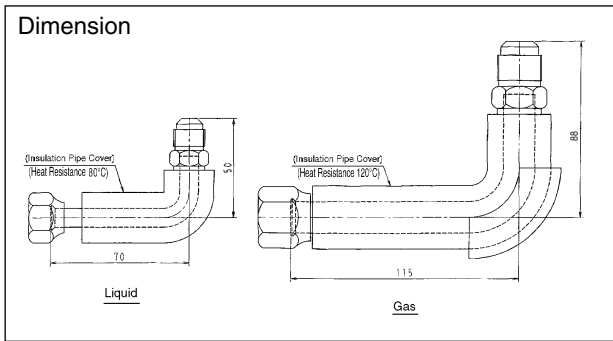
Model	Packing Quantity
KDGJ49F80	4(each 2x2)
KDGJ49F140	

Replacement Long Life Filter – KAFJ495F140



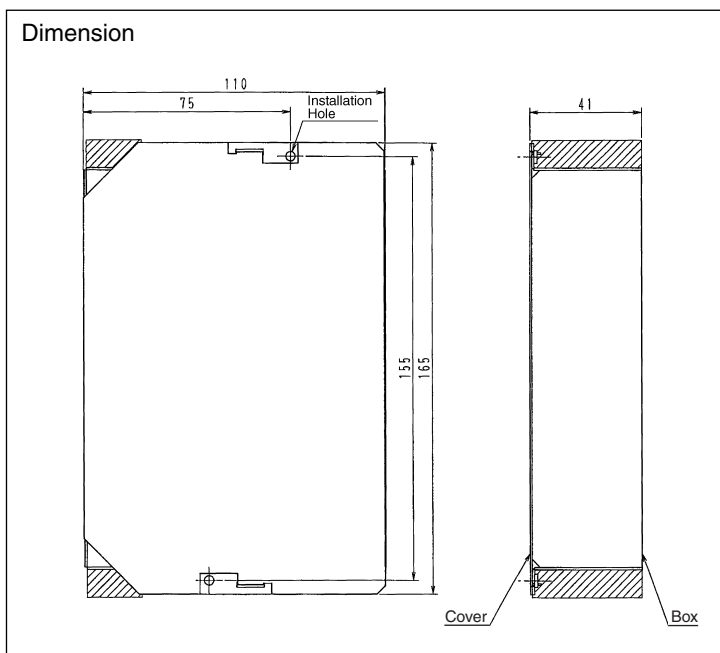
Item	Model	KAFJ495F140
Initial Pressure Loss (Pa)		Less Than 7
Final Pressure Loss (Pa)		Less Than 49
Average Efficiency (%)		50 (Gravity Method)
Life Time (h)		2,500 (Dust Particle Concentration at 0.15mg/m ³)
Filter Pass Air Flow Rate		18.5m ³ /min
Materials		Mildew Proof Resin Net
Number Required Per Model		1
Weight (kg)		0.4

L Connection Piping Kit – KHFP49M140



Model	Liquid Side	Gas Side
KHFP49M140	φ 9.5	φ 15.9

Installation Box for Adaptor PC board – KRP1B97



Item	Model No.	KRP1B97
Adaptor for Wiring		KRP4A53

Part 3 Outdoor Air Processing Unit

FXMQ-MF	
Outdoor Air Processing Unit	417

FXMQ-MF

Outdoor Air Processing Unit

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1. Features

Outdoor-Air Processing Unit

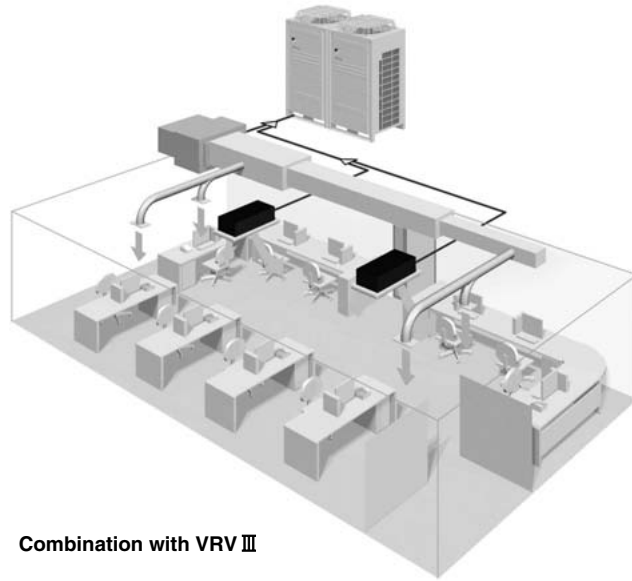
50 Hz only
For outdoor units of 8 HP and above

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

Model Names
FXMQ125MFV1, FXMQ200MFV1, FXMQ250MFV1

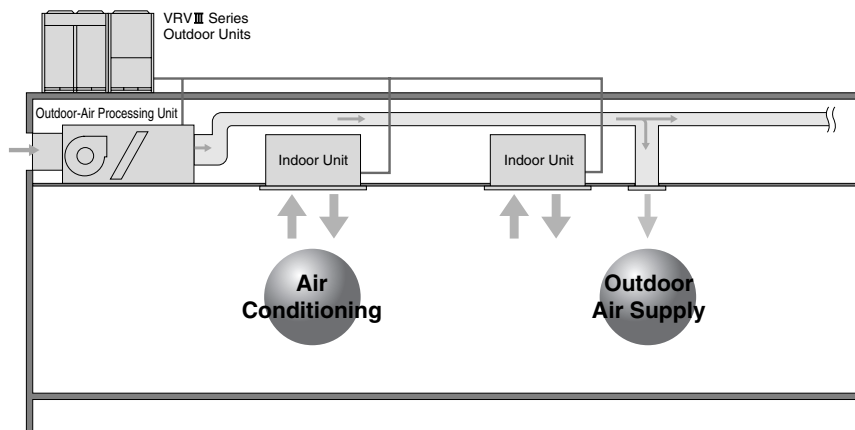


Fresh air treatment and air conditioning can be achieved with a single system by using heat pump technology—without the usual troublesome air supply and air discharge balance design. Fan coil units for air conditioning and an outdoor-air processing unit can be connected to the same refrigerant line. 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: VRV II and III systems.

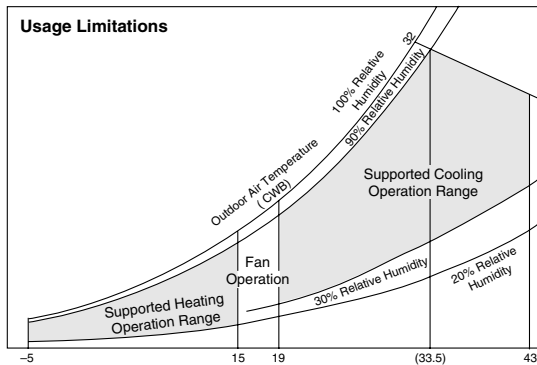
- The unit introduces outdoor air and adjusts the outdoor air temperature via fixed discharge temperature control, thereby reducing the air conditioning load.
- * The system can operate with outdoor-air temperatures ranging from -5 to 43°C. Heating performance is somewhat adversely affected when the outdoor-air temperature is 0°C or below.
- * When shipped from the factory, the thermostat is set at 18°C for cooling and 25°C for heating. The set temperature can be varied within the range of 13–25°C during cooling operation, and 18–30°C 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

FXMQ125MFV1	1,080 m ³ /h
FXMQ200MFV1	1,680 m ³ /h
FXMQ250MFV1	2,100 m ³ /h

- Optional equipment includes long-life filters.
- Compatible with outdoor temperatures from -5°C to 43°C.



- Notes
1. The data shown in the graph illustrates the supported operation ranges under the following conditions.
Indoor and Outdoor Unit
Effective piping length: 7.5 m
Height differential: 0 m
 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 5°C 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 500 m.



BRC1C62
Wired remote controller (option)

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

- 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.



DCS302CA61
Central remote controller (option)

- * 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.

- 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 5°C 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			FXMQ125MFV1	FXMQ200MFV1	FXMQ250MFV1
★1 Cooling Capacity	kcal/h		12,000	19,300	24,100
	Btu/h		47,800	76,400	95,500
	kW		14.0	22.4	28.0
Casing			Galvanized Steel Plate	Galvanized Steel Plate	Galvanized Steel Plate
Dimensions: (HxWxD)		mm	470x744x1,100	470x1,380x1,100	470x1,380x1,100
Coil (Cross Fin Coil)	Rows×Stages×Fin Pitch	mm	3x26x2.0	3x26x2.0	3x26x2.0
	Face Area	m ²	0.28	0.65	0.65
Fan	Model		D13/4G2DA1	D13/4G2DA1	D13/4G2DA1
	Type		Sirocco Fan	Sirocco Fan	Sirocco Fan
	Motor Output × Number of Units	W	380x1	380x1	380x1
	Air Flow Rate (H/L)	m ³ /min	18	28	35
		cfm	635	988	1,236
	External Static Pressure ★4	Pa	185	225	205
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			★2	★2	★2
Piping Connections	Liquid Pipes		9.5mm (Flare Connection)	9.5mm (Flare Connection)	9.5mm (Flare Connection)
	Gas Pipes		15.9mm (Flare Connection)	19.1mm (Brazing Connection)	22.2mm (Brazing Connection)
	Drain Pipe	(mm)	PS1B (female thread)	PS1B (female thread)	PS1B (female thread)
Machine Weight (Mass)	kg	86	123	123	
Sound Level (220V) ★3,★4	dBA	42	47	47	
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			RXQ8-54PAY1	RXQ8-54PAY1	RXQ10-54PAY1
Drawing No.			C : 3D046147A	C : 3D046147A	C : 3D046147A

Notes:

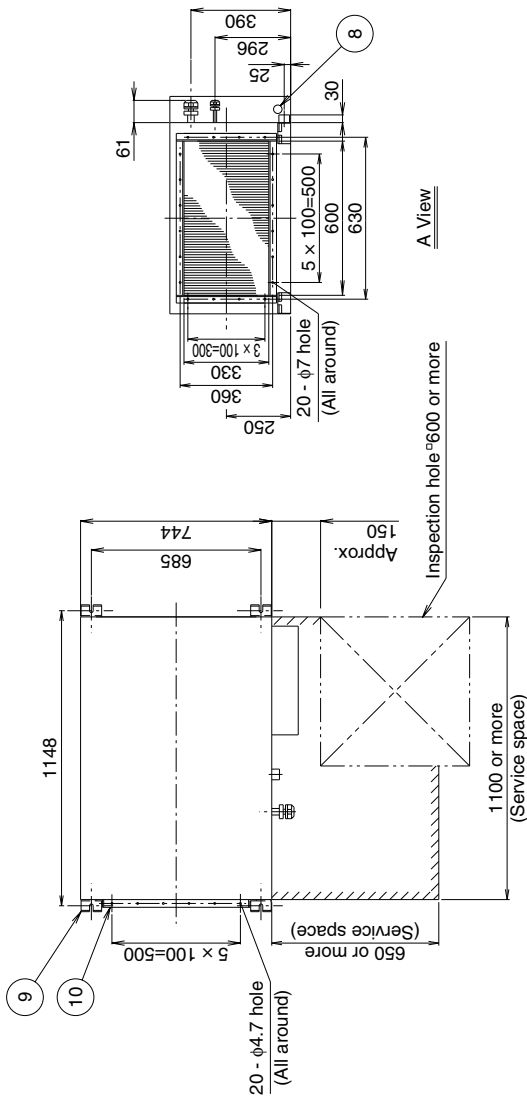
- ★1. Specifications are based on the following conditions:
 - Cooling: Outdoor temp. of 33°CDB, 28°CWB (68% RH), and discharge temp. of 18°CDB
 - Equivalent reference piping length: 7.5m (0m Horizontal)
 - At 220V
- ★2. Air intake filter is not supplied, so be sure to install the optional long-life filter or high-efficiency filter. Please mount it in the duct system of the suction side. Select its colorimetric method (gravity method) 50% or more.
- ★3. Anechoic chamber conversion value, measured at a point 1.5m downward from the unit center. These values (measured at 220V) are normally somewhat higher during actual operation as a result of ambient conditions.
- ★4. Values measured at 220 V.
- ★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. It is not possible to connect to the 5 HP outdoor unit. Not available for Heat Recovery type and VRV III-S series.
 - This equipment cannot be incorporated into the remote group control of the VRV III system.

Conversion Formulae
kcal/h=kW×860
Btu/h=kW×3412
cfm=m ³ /min×35.3

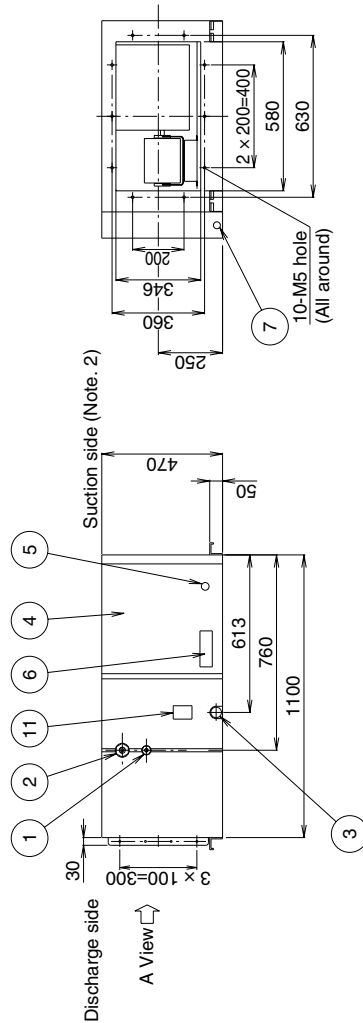
3. Dimensions

3.1 Indoor Units

FXMQ125MFV1



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



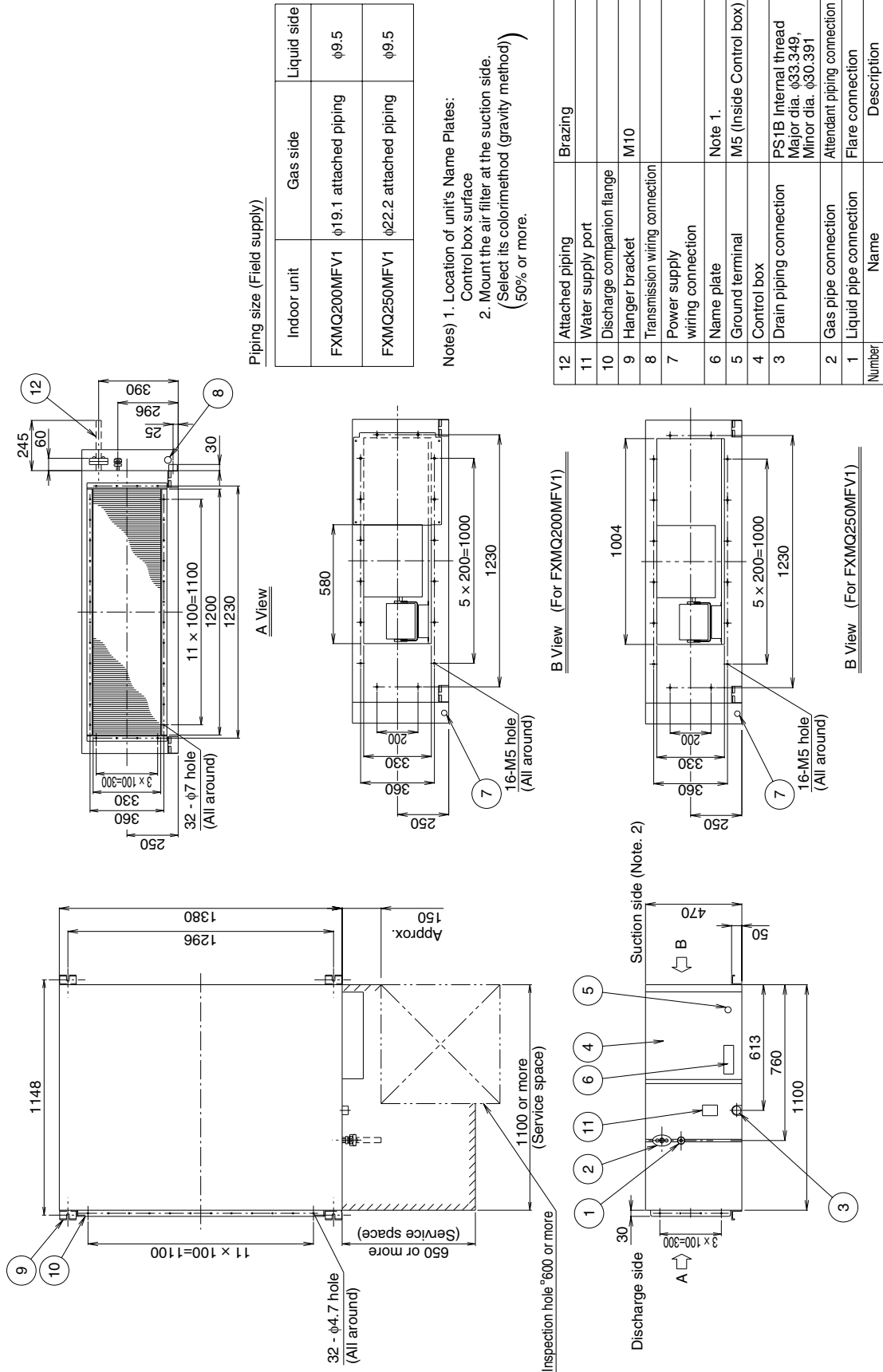
Unit (mm)

Number	Name	Description
11	Water supply port	
10	Discharge companion flange	
9	Hanger bracket	M10
8	Transmission wiring connection	
7	Power supply wiring connection	Note. 1
6	Name plate	M5 (Inside Control box)
5	Ground terminal	
4	Control box	PS1B Internal thread Major dia. ø33.349, Minor dia. ø30.391
3	Drain piping connection	ø15.9 Flare connection ø9.5 Flare connection
2	Gas pipe connection	
1	Liquid pipe connection	

3D045129A

FXMQ200MFV1
FXMQ250MFV1

Unit (mm)



Piping size (Field supply)

Indoor unit	Gas side	Liquid side
FXMQ200MFV1	φ19.1 attached piping	φ9.5
FXMQ250MFV1	φ22.2 attached piping	φ9.5

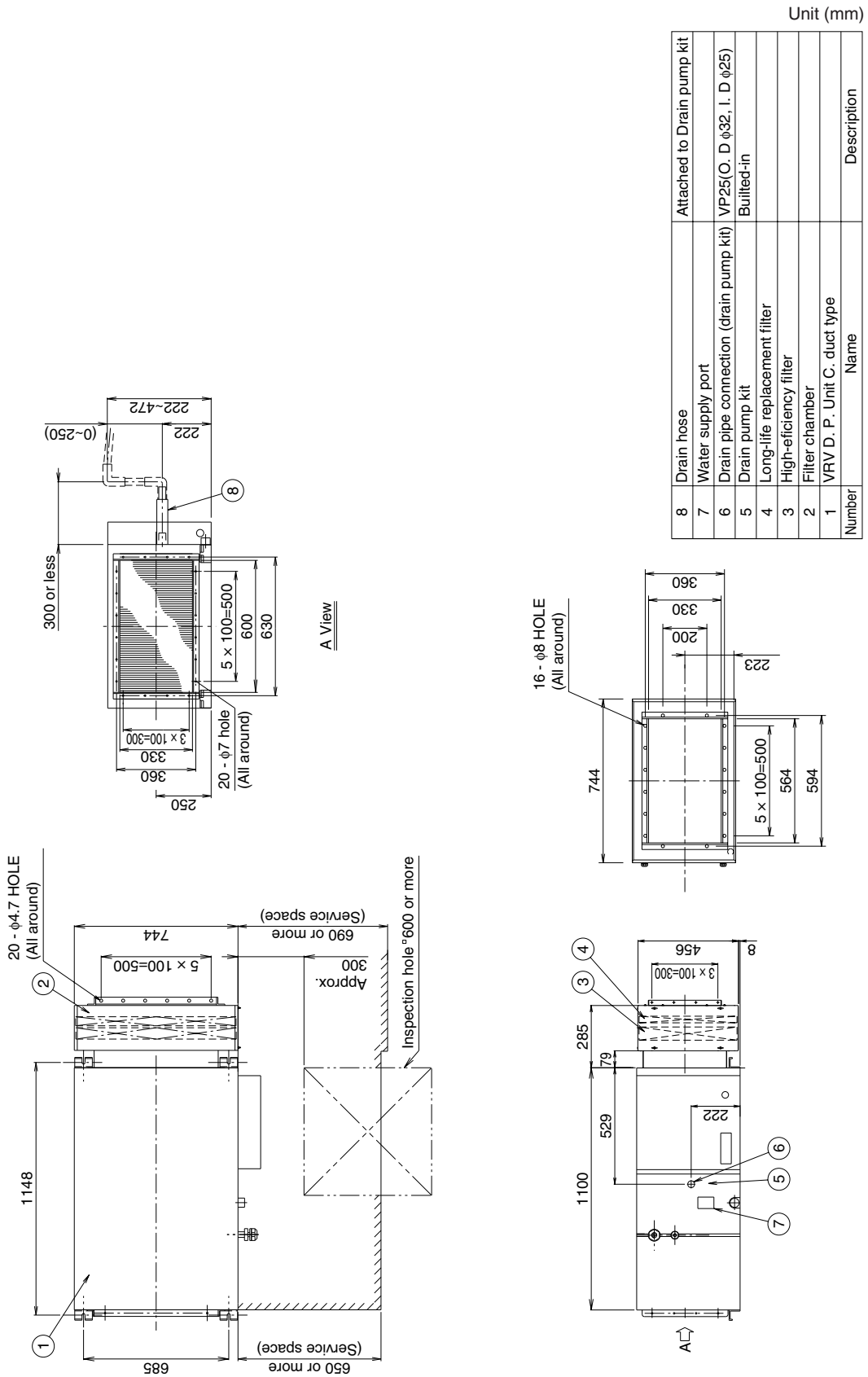
- Notes) 1. Location of unit's Name Plates:
Control box surface
2. Mount the air filter at the suction side.
(Select its color/method (gravity method))
(50% or more.)

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	Note 1.
6	Name plate	M5 (inside Control box)
5	Ground terminal	
4	Control box	PS1B Internal thread Major dia. φ33.349, Minor dia. φ30.391
3	Drain piping connection	Attendant piping connection
2	Gas pipe connection	Flare connection
1	Liquid pipe connection	

C : 3D045128A

3.2 Dimensions with Option

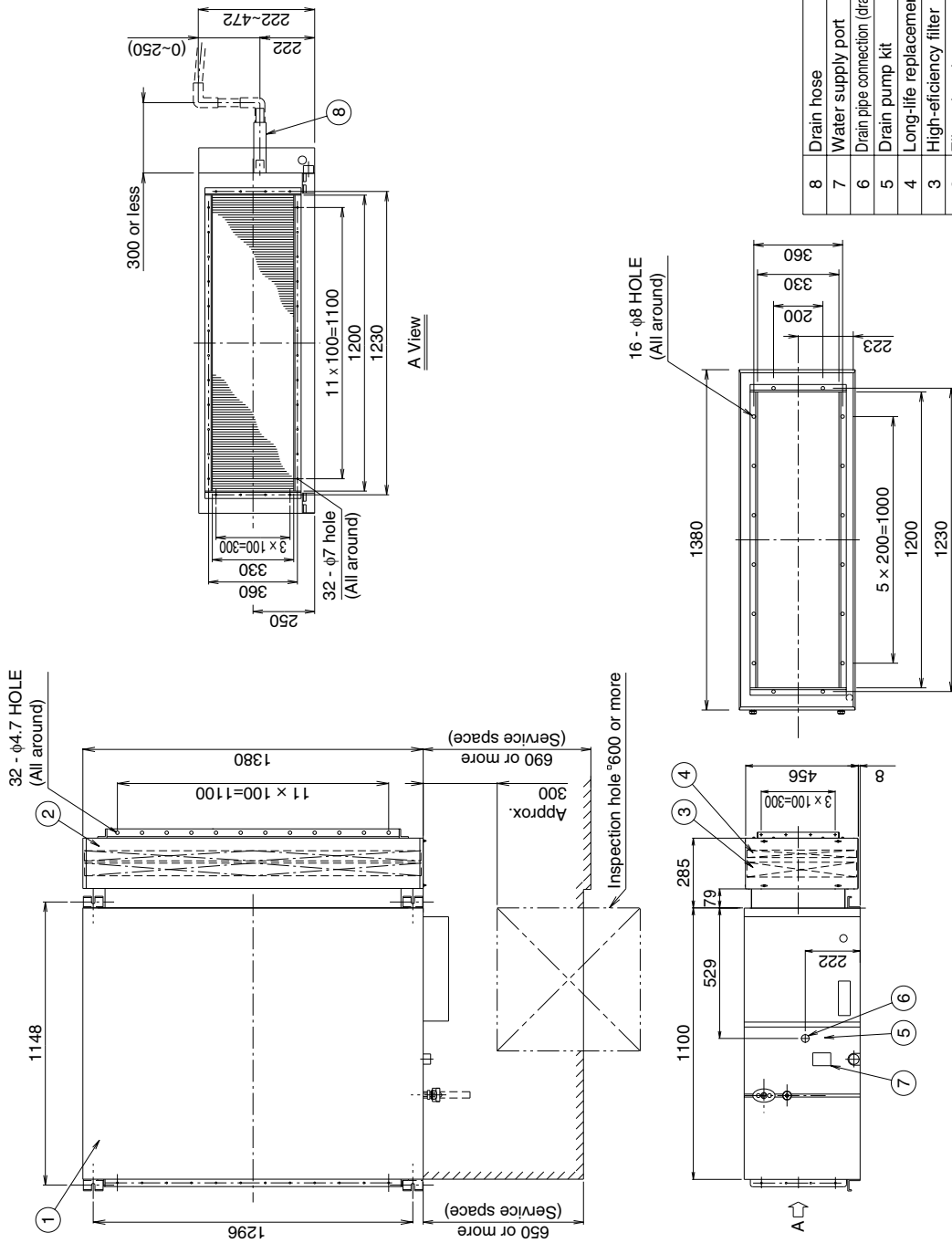
FXMQ125MFV1



3D046155

FXMQ200MFV1
FXMQ250MFV1

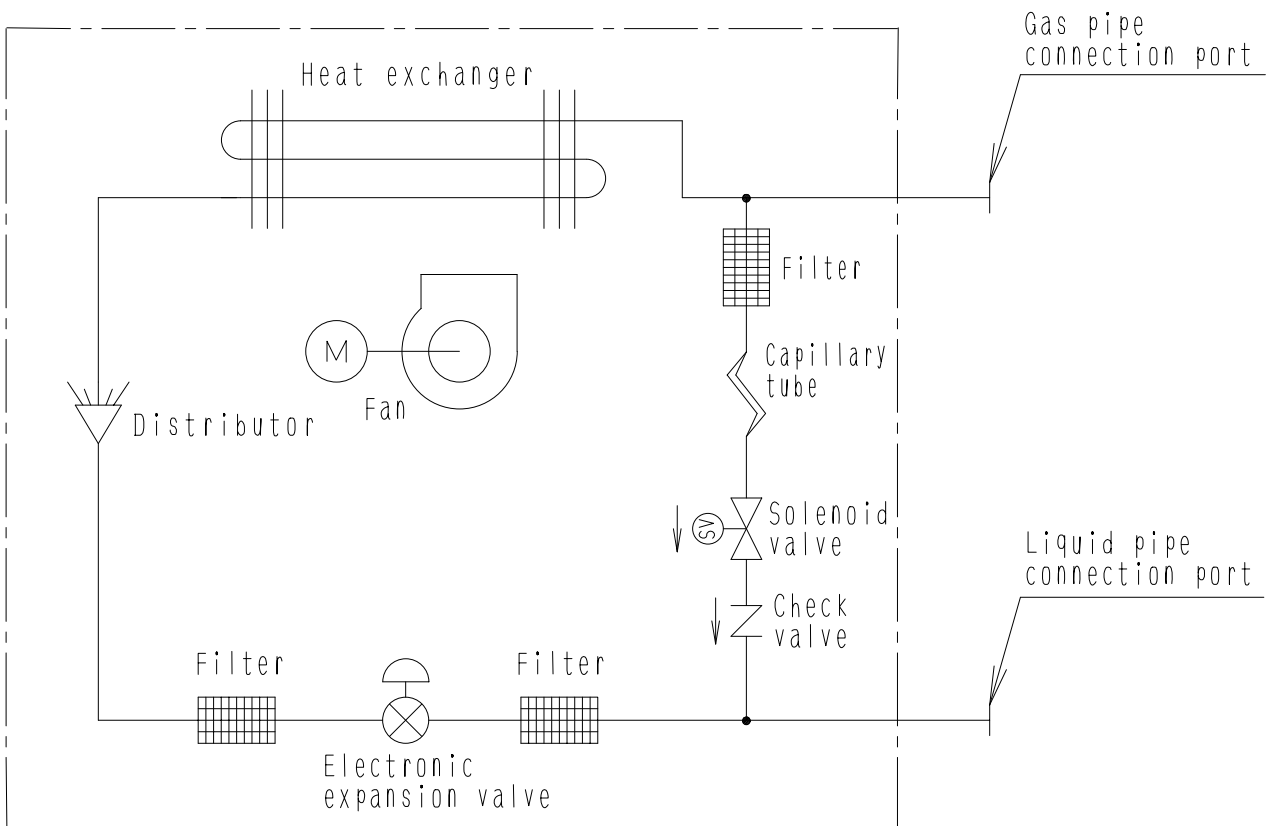
Unit (mm)



Number	Name	Description
1	VRV D.P. Unit C. duct type	
2	Filter chamber	
3	High-efficiency filter	
4	Long-life replacement filter	
5	Drain pump kit	Built-in
6	Drain pipe connection (drain pump kit)	VP25 (O. D. φ32, I. D. φ25)
7	Water supply port	
8	Drain hose	Attached to Drain pump kit

3D046154

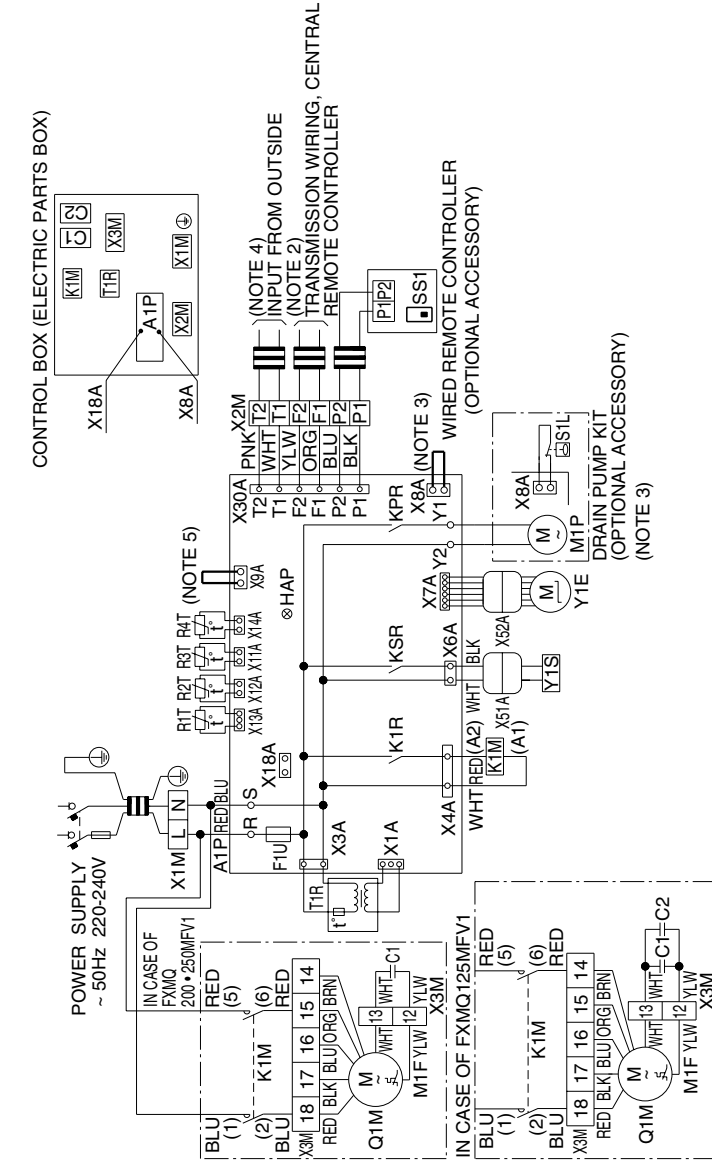
4. Piping Diagrams



4D018650B

5. Wiring Diagrams

FXMQ125MFV1
 FXMQ200MFV1
 FXMQ250MFV1



NOTES

1. : TERMINAL BLOCK, : D-CONNECTOR, : TERMINAL.
2. : SHORT CIRCUIT CONNECTOR, : FIELD WIRING.
3. IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTRUCTION MANUAL.
4. IN CASE INSTALLING THE DRAIN PUMP KIT, REMOVE THE SHORT CIRCUIT CONNECTOR OF X8A AND EXECUTE THE ADDITIONAL WIRING FOR FLOAT SWITCH AND DRAIN PUMP.
5. 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.

INDOOR UNIT	
A1P	PRINTED CIRCUIT BOARD
C1, C2	CAPACITOR (M1F)
F1U	FUSE (⊕, 5A, 250V) (A1P)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)
K1M	MAGNETIC RELAY (M1F)
K1R	MAGNETIC RELAY (M1P)
KPR	MAGNETIC RELAY (M1P)
KSR	MAGNETIC RELAY (Y1S)
M1F	MOTOR (FAN)
Q1M	THERMAL PROTECTOR (M1F EMBEDDED 135 C)
R1T	THERMISTOR (SUCTION AIR)
R2T	THERMISTOR (COIL, LIQUID)
R3T	THERMISTOR (COIL, GAS)
R4T	THERMISTOR (DISCHARGE AIR)
T1R	TRANSFORMER (220-240V/22V)
X1M	TERMINAL BLOCK (POWER)
X2M	TERMINAL BLOCK (CONTROL)
X3M	TERMINAL BLOCK
X51A, X52A	CONNECTOR
Y1E	ELECTRIC EXPANSION VALVE
Y1S	SOLENOID VALVE (HOT GAS)
OPTIONAL PARTS	
M1P	MOTOR (DRAIN PUMP)
S1L	FLOAT SWITCH (DRAIN PUMP)
WIRED REMOTE CONTROLLER	
SS1	SELECT SWITCH (MAIN/SUB)
CONNECTOR FOR OPTIONAL PARTS	
X18A	CONNECTOR (WIRING ADAPTOR FOR ELECTRICAL APPENDICES)

3D044996C

6. Capacity Tables

FXMQ125MFV1

Cooling

Outdoor temperature °C DB	°C WB							
	15.0	17.0	20.0	23.0	26.0	28.0	30.0	32.0
Capacity								
	kW	kW	kW	kW	kW	kW	kW	kW
20.0	3.6	3.8	-	-	-	-	-	-
22.0	3.6	3.8	5.1	-	-	-	-	-
25.0	3.6	3.8	5.1	6.8	-	-	-	-
27.0	-	3.8	5.1	6.7	-	-	-	-
29.0	-	-	5.1	6.7	11.0	-	-	-
31.0	-	-	5.0	6.6	10.9	14.1	-	-
33.0	-	-	5.0	6.5	10.8	14.0	16.4	-
35.0	-	-	-	6.4	10.7	13.9	16.3	17.4

Notes

- The above capacities are based on the following conditions:
 Air discharge temperature setting: 18°C for cooling operation (Factory setting).
 Equivalent piping length: 7.5m
 Level difference: 0m
- The above capacities values are general average values which can be generated by each compressor operation level.
- A value enclosed in 14.0 means rated capacity.

4D046308

FXMQ200MFV1

Cooling

Outdoor temperature °C DB	°C WB							
	15.0	17.0	20.0	23.0	26.0	28.0	30.0	32.0
Capacity								
	kW	kW	kW	kW	kW	kW	kW	kW
20.0	5.7	6.1	-	-	-	-	-	-
22.0	5.7	6.1	8.2	-	-	-	-	-
25.0	5.7	6.1	8.2	10.8	-	-	-	-
27.0	-	6.1	8.1	10.7	-	-	-	-
29.0	-	-	8.1	10.6	17.6	-	-	-
31.0	-	-	8.0	10.5	17.4	22.6	-	-
33.0	-	-	8.0	10.3	17.3	22.4	26.2	-
35.0	-	-	-	10.2	17.1	22.2	26.1	27.8

Notes

- The above capacities are based on the following conditions:
Air discharge temperature setting: 18°C for cooling operation (Factory setting).
Equivalent piping length: 7.5m
Level difference: 0m
- The above capacities values are general average values which can be generated by each compressor operation level.
- A value enclosed in means rated capacity.

4D046309

FXMQ250MFV1

Cooling

Outdoor temperature °C DB	°C WB							
	15.0	17.0	20.0	23.0	26.0	28.0	30.0	32.0
	Capacity							
	kW	kW	kW	kW	kW	kW	kW	kW
20.0	7.1	7.6	-	-	-	-	-	-
22.0	7.1	7.6	10.2	-	-	-	-	-
25.0	7.1	7.6	10.2	13.5	-	-	-	-
27.0	-	7.6	10.1	13.4	-	-	-	-
29.0	-	-	10.1	13.3	22.0	-	-	-
31.0	-	-	10.0	13.1	21.8	28.2	-	-
33.0	-	-	10.0	12.9	21.6	28.0	32.8	-
35.0	-	-	-	12.8	21.4	27.8	32.6	34.8

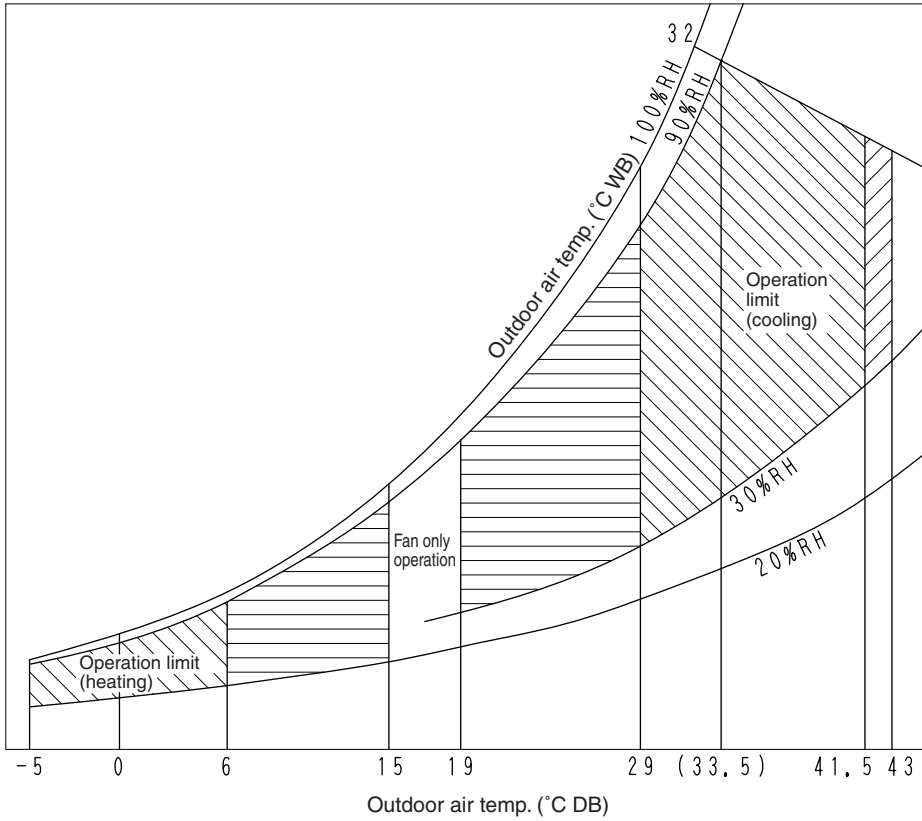
Notes

- The above capacities are based on the following conditions:
 Air discharge temperature setting: 18°C for cooling operation (Factory setting).
 Equivalent piping length: 7.5m
 Level difference: 0m
- The above capacities values are general average values which can be generated by each compressor operation level.
- A value enclosed in means rated capacity.

4D046310

7. Operation Limit

FXMQ125MFV1

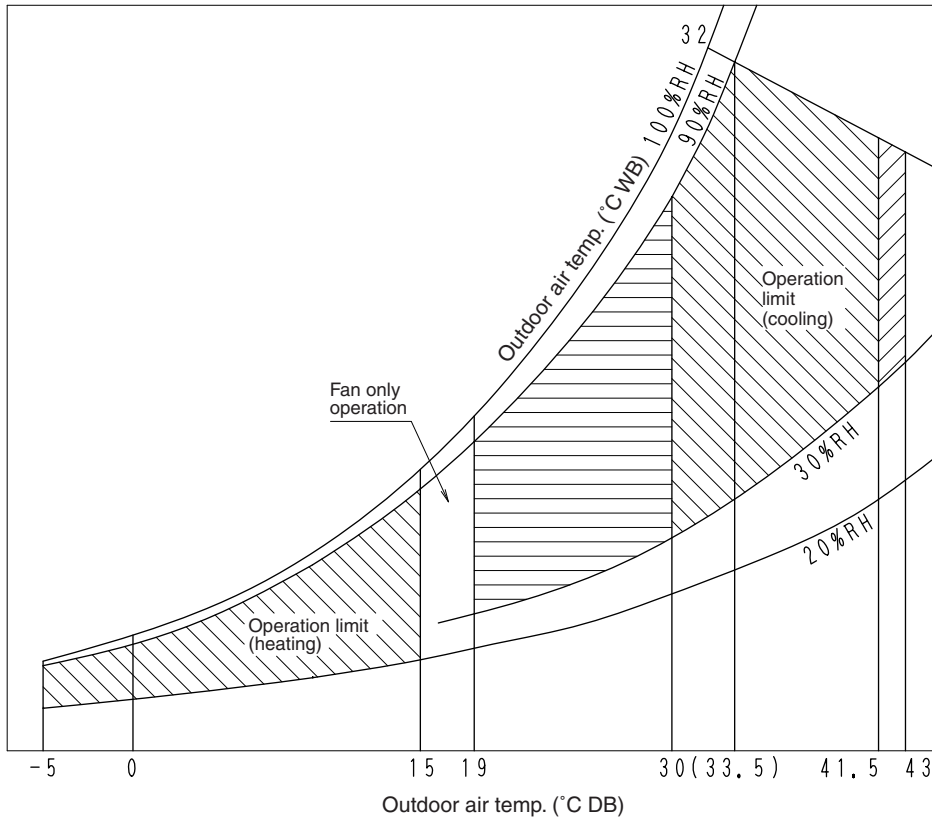


NOTE

- 1) These figures assume the following operating conditions.
(Indoor and outdoor units)
Equivalent pipe length: 7.5m
Level difference: 0m
- 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 5°C or below.

3D046312

FXMQ200MFV1

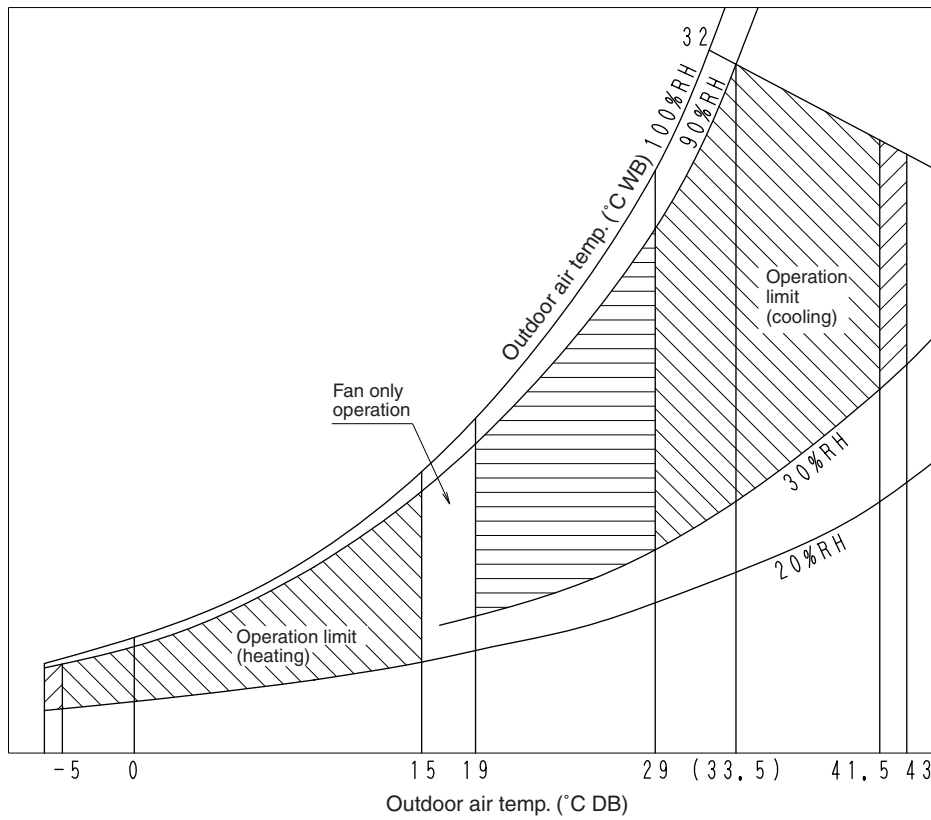


NOTE

- 1) These figures assume the following operating conditions.
(Indoor and outdoor units)
Equivalent pipe length: 7.5m
Level difference: 0m
- 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 5°C or below.

3D047750

FXMQ250MFV1



NOTE

- 1) These figures assume the following operating conditions.
(Indoor and outdoor units)
Equivalent pipe length: 7.5m
Level difference: 0m
- 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 5°C or below.

C: 3D046313

8. Electric Characteristics

Model	Units				Power supply		IFM		Input(W)	
	Type	Hz	Volts	Voltage range	MCA	MFA	KW	FLA	Cooling	Heating
FXMQ125MFV1	V1	50	220-240	MAX. 264 Min. 198	1.9	15	0.380	1.5	359	359
FXMQ200MFV1					3.3	15	0.380	2.6	548	548
FXMQ250MFV1					3.8	15	0.380	3.0	638	638

Symbols :

MCA : Min. Circuit Amps (A)
 MFA : Max. Fuse Amps (See note 5)
 KW : Fan Motor Rated Output(KW)
 FLA : Full Load Amps(A)
 IFM : Indoor Fan Motor

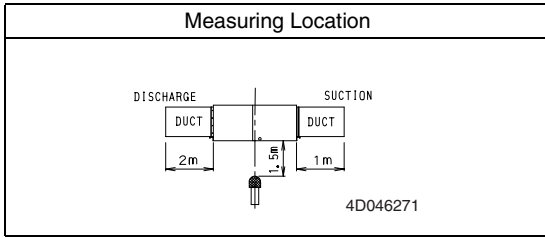
Note :

- Voltage range
Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits,
- Maximum allowable voltage unbalance between phases is 2%.
- MCA/MFA
 $MCA = 1.25 \times FLA$
 $MFA \leq 4 \times FLA$
 (Next lower standard fuse rating. Min.15A)
- Select wire size based on the MCA.
- Instead of fuse, use Circuit Breaker.

4D046146A

9. Sound Levels

Overall



Notes:

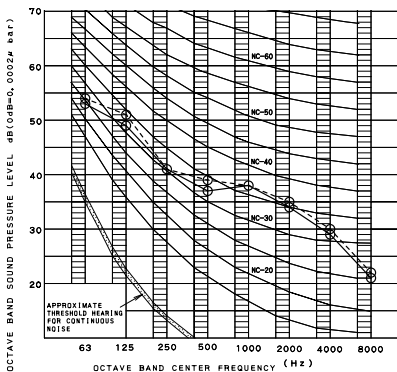
1. The operating conditions are assumed to be standard (JIS conditions)
2. These operating values were obtained in a dead room (conversion values).
Sound level will vary depending on a range of factors such as the construction (acoustic absorption coefficient) of the particular room in which the equipments installed.

Model	50Hz	
	220V	240V
FXMQ125MFV1	42	43
FXMQ200MFV1	47	48
FXMQ250MFV1	47	48

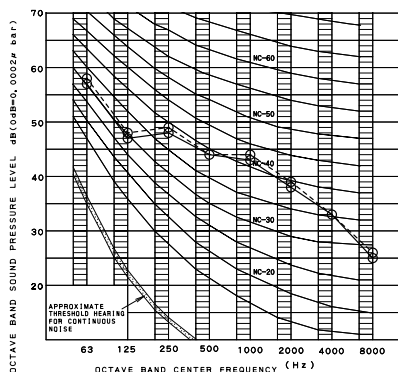
Octave Band Level

- — ○ 220V
- - - - ○ 240V

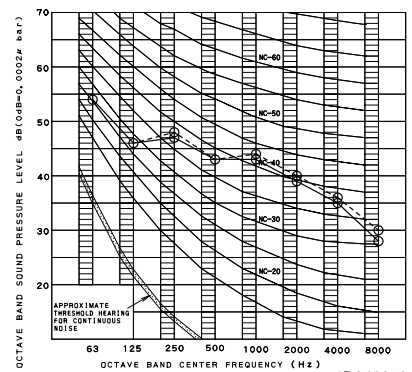
FXMQ125MFV1



FXMQ200MFV1

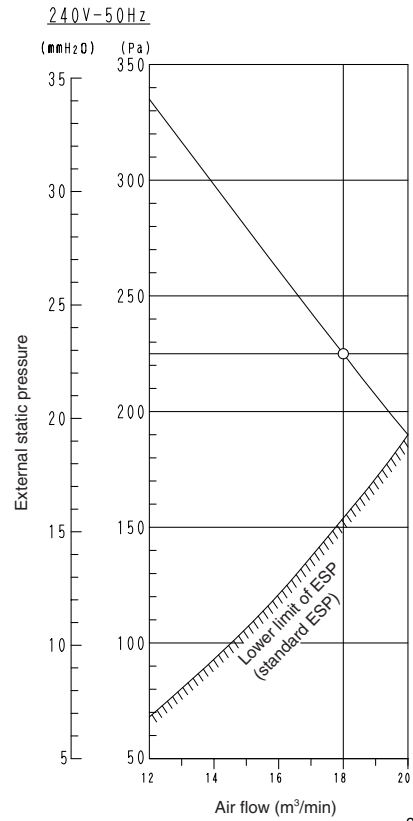
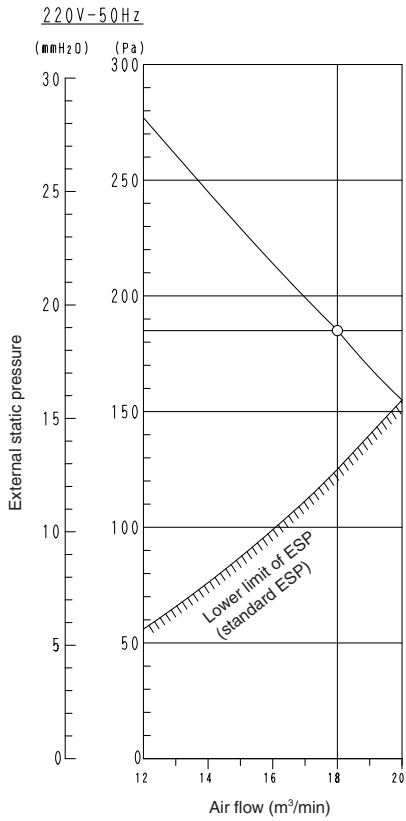


FXMQ250MFV1



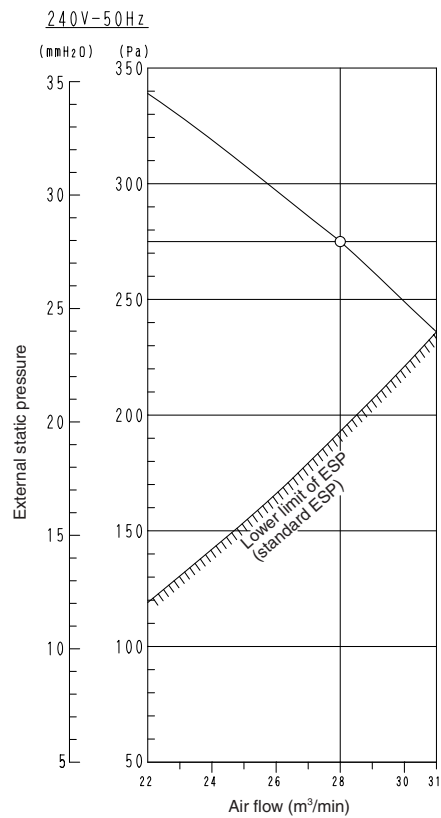
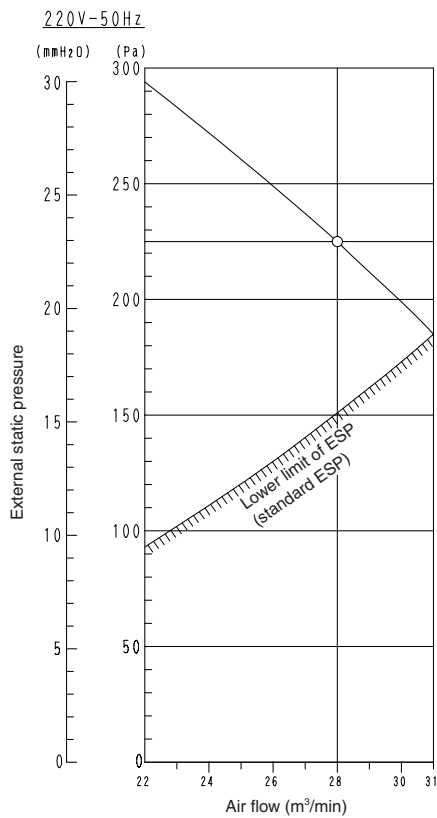
10. Fan Performances

FXMQ125MFV1



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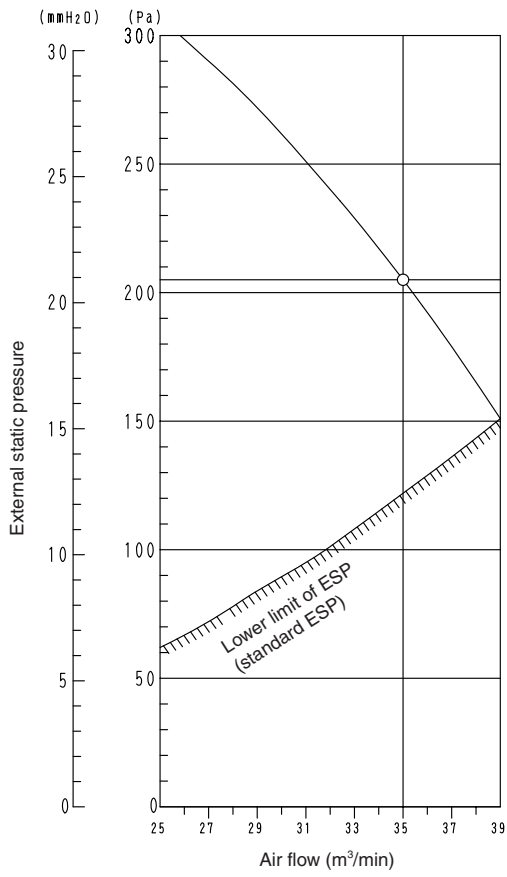
FXMQ200MFV1



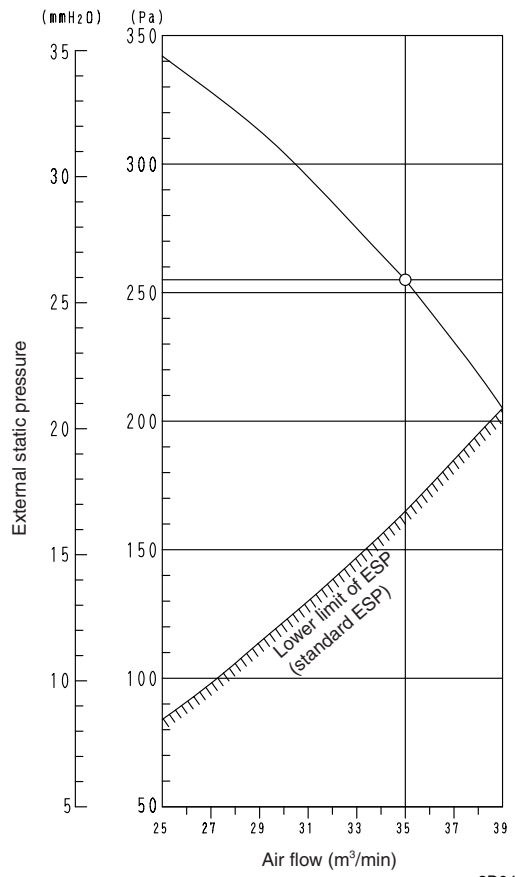
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FXMQ250MFV1

220V-50Hz



240V-50Hz



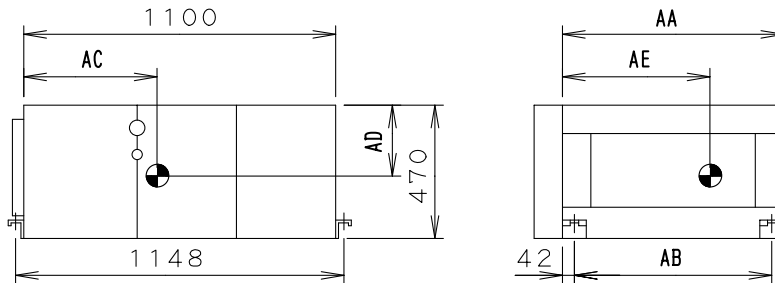
3D046265

11. Installation

Center of Gravity

FXMQ125MFV1
 FXMQ200MFV1
 FXMQ250MFV1

Unit (mm)



MODEL	PRODUCT WEIGHT (Mass)	AA	AB	AC	AD	AE
FXMQ125MFV1	86kg	780	696	600	250	330
FXMQ200MFV1	123kg	1380	1296	570	250	600
FXMQ250MFV1	123kg	1380	1296	570	250	600

C: 4D046143B

Service Space

Selecting Installation Site

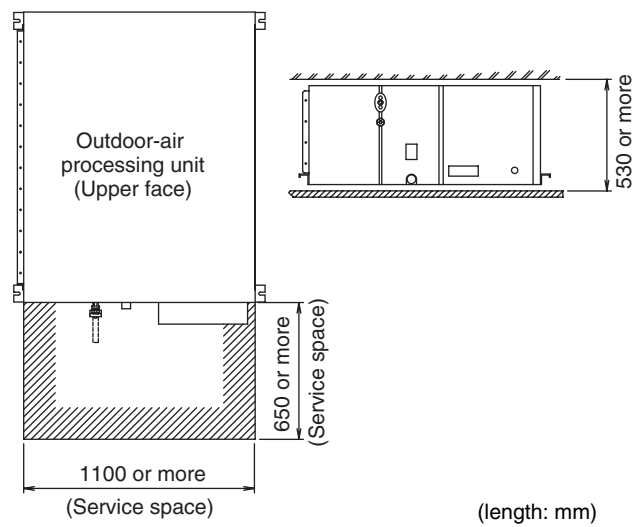
When it may exceed 30°C and RH80% in the ceiling or fresh air is inducted into the ceiling, an additional insulation (Thickness 10mm or more of glass wool or polyethylene form) is required.

- 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 manual included with the outdoor unit for "Refrigerant Piping Work")
 - 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 1 meter away from televisions or radios in order to prevent image interference or noise. (Depending on the radio waves, a distance of 1 meter may not be sufficient enough to eliminate the noise.)

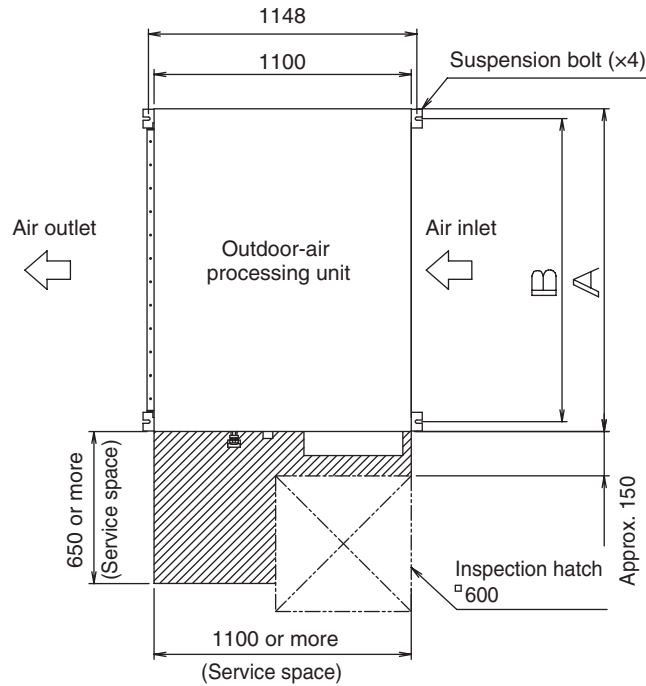
2. Use suspension bolts for installation. Check whether the ceiling is strong enough to support the weight of the unit or not. If there is a risk, reinforce the ceiling before installing the unit.

**Fig. 1**

Bolt Pitch

Preparations Before Installation

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

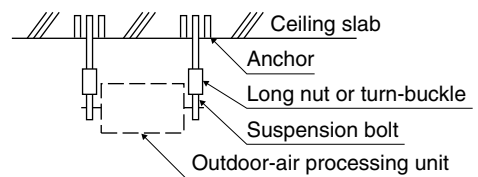


Unit	A	B
FXMQ125MFV1	744	685
FXMQ200-250MFV1	1380	1296

Fig. 2 (length: mm)

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 10 mm 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 9).

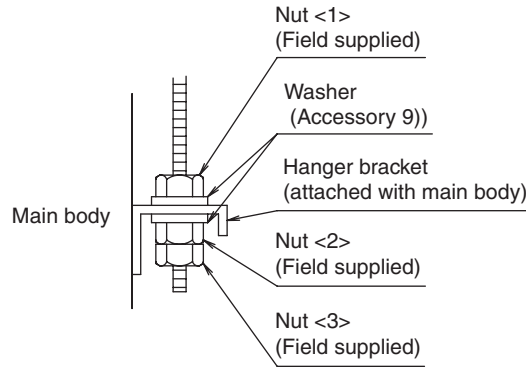


Fig. 4

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)

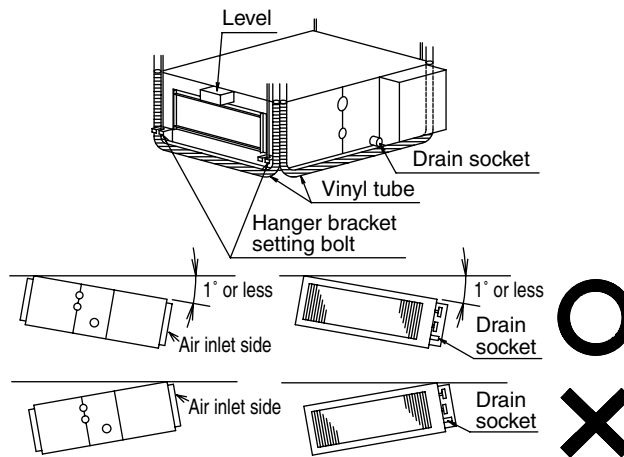


Fig. 5

4. Tighten both upper and lower nuts <1>, <3>.

(Refer to Fig. 4)

- 5. Insulate the four hanger brackets with the sealing pad. (accessory 5) Insulate the hanger brackets so that the surface and edges of the hanger brackets cannot be seen. (Refer to Fig. 6)

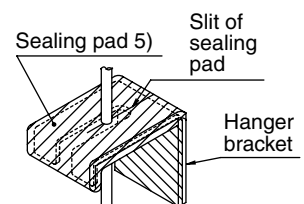


Fig. 6



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.>
- <When using a heat pump, the temperature of the gas pipe can reach up to approximately 120°C, so use insulation which is sufficiently resistant.>
- <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 around 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 air, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.
-
- The 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, apply ether oil or ester oil only to inner side of the flare, 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
FXMQ125MFV1	15.9	φ9.5
FXMQ200MFV1	19.1 Use attached pipe.	φ9.5
FXMQ250MFV1	22.2 Use attached pipe.	φ9.5

Table 2

Pipe size	Tightening torque	Flare dimensions A (mm)	Flare shape
φ 9.5 (3/8")	32.7 – 39.9N·m (333 – 407 kgf·cm)	12.8 – 13.2	
φ 15.9 (5/8")	61.8 – 75.4N·m (630 – 770 kgf·cm)	19.3 – 19.7	

Note:

Use the flare nuts attached with the unit.

CAUTION

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

Apply ester oil or ether oil only to inner side of the flare.

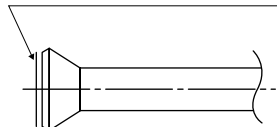


Fig. 7

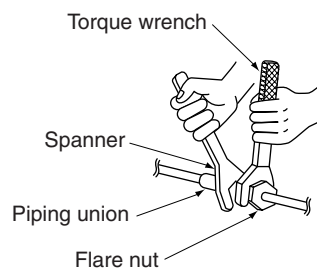


Fig. 8

Not recommendable 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
9.5 (3/8")	60 to 90 degrees	Approx. 200mm
15.9 (5/8")	30 to 60 degrees	Approx. 300mm

- 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.

FXMQ125MFV1

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

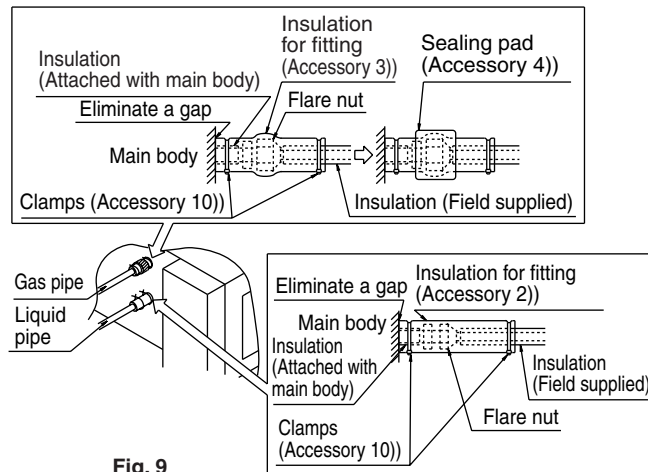


Fig. 9

FXMQ200 · 250MFV1

1. Insulate the liquid pipe using the insulation for fitting (Accessory 2)). (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 7)) to connect the attached pipe (Accessory 1)) to the unit is 21.5 – 28.9 N/m.

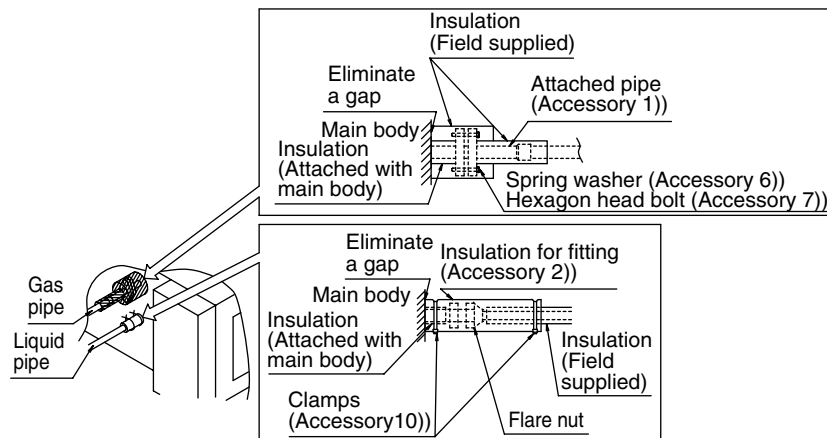


Fig. 10

—  **CAUTION** —

Be sure to insulate any field pipe all the way to the pipe connection inside the unit. Any exposed pipe may cause condensate 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:JIS Z 3264/B-Cu93P-710/795: ISO 3677) which does not require flux.

(Flux has extremely harmful influence 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 0.02 MPa (0.2 kg/cm²) with a pressure-reducing valve if brazing while inserting nitrogen into the piping.

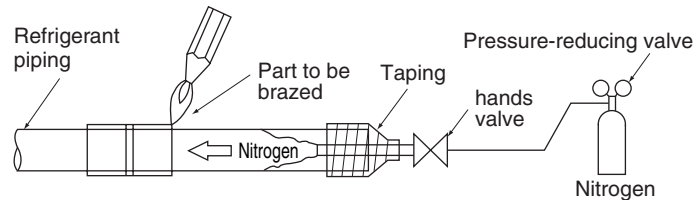


Fig. 11

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.)

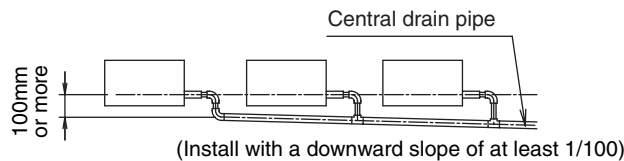


Fig. 12

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

- Open the water supply port, add approximately 1 liter 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.

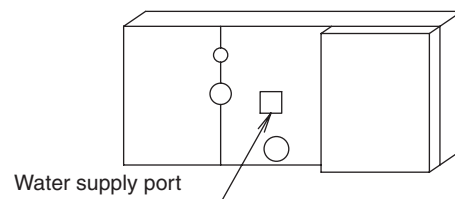


Fig. 13



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


- All 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 electric parts 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 circuit breaker 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 circuit breaker 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

Model	Units			Power supply		Fan motor	
	Hz	Volts	Voltage range	MCA	MFA	KW	FLA
FXMQ125MFV1	50	220 - 240	Max. 264 Min. 198	1.9	15	0.380	1.5
FXMQ200MFV1				3.3	15	0.380	2.6
FXMQ250MFV1				3.8	15	0.380	3.0

MCA: Min. Circuit Amps (A); MFA: Max. Fuse Amps (A)
 KW: Fan Motor Rated Output (kW); FLA: Full Load Amps (A)

SPECIFICATIONS FOR FIELD SUPPLIED FUSES AND WIRE

Model	Power supply wiring			Transmission wiring	
	Field fuses 	Wire	Size	Wire	Size
FXMQ125MFV1	15A	H05VV-U3G	Size must comply with local codes.	Sheathed wire (2 wire)	0.75 - 1.25 mm²
FXMQ200MFV1					
FXMQ250MFV1					

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/out-door units and between the indoor unit and the remote con-troller is as follows.
 - (1) Outdoor unit – Indoor unit:
Max. 1000 m (Total wiring length: 2000 m)
 - (2) Indoor unit – Remote controller:
Max. 500 m
 - (3) Max. branches No. of branches :16
3. Insulated thickness: 1mm or more
4. Up to 16 branches are possible for unit-to unit cabling. No branch is allowed after first branch. **(Refer to Fig. 15)**

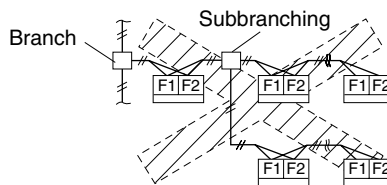


Fig. 15

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.)

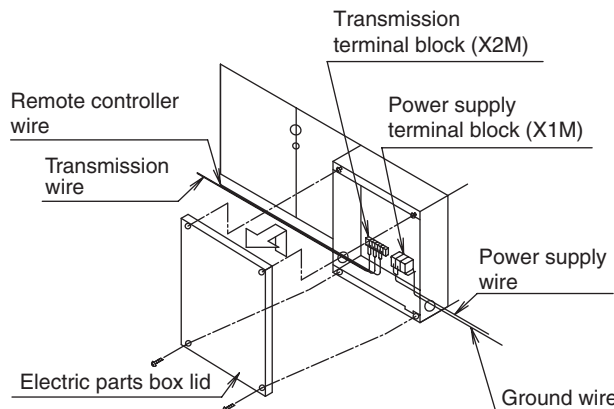


Fig. 16

■ **Power supply wire, Ground wire (Refer to Fig. 17)**

Connect the wire to L and N 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 10)).

■ **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 10)).

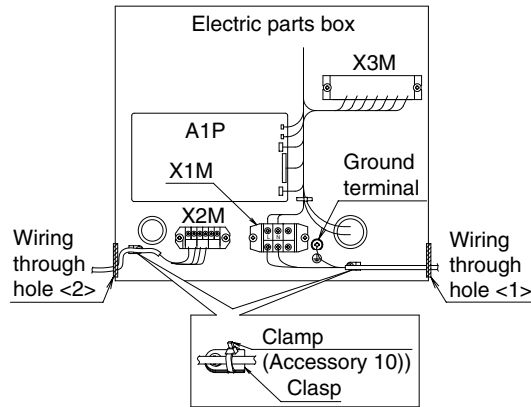


Fig. 17



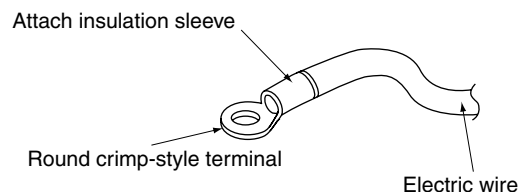
CAUTION

- Wire the electric parts box so that the wiring is at least 10 mm above the bottom of the electric parts 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 electric parts 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 electric parts box fits snugly by arranging the wires neatly and attaching the electric parts box lid firmly. When attaching the electric parts 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 50mm, otherwise electrical noise (external static) could cause mistaken operation or breakage.

13

PRECAUTIONS

1. Use round crimp-style terminals for connecting wires to the power supply terminal block. If unavailable, observe the following points when wiring.
 - 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	0.79 – 0.97 N·m
Power supply terminal block (X1M)	M4	1.18 – 1.44 N·m
Ground terminal	M5	3.02 – 4.08 N·m

- Do not connect wires of different gauge to the same ground terminal. Looseness in the connection may deteriorate protection.
- Outside of the unit, keep transmission wire and remote controller wire at least 50 mm away from power supply wire and ground wire. The unit may malfunction if subjected to electrical noise (external static).
- For remote controller wiring, refer to the “INSTALLATION MANUAL OF REMOTE CONTROLLER” attached to the remote controller.
- Never connect power supply wire to the transmission terminal block (X2M). A mistake of the sort could damage the entire system.
- 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 electric parts 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)

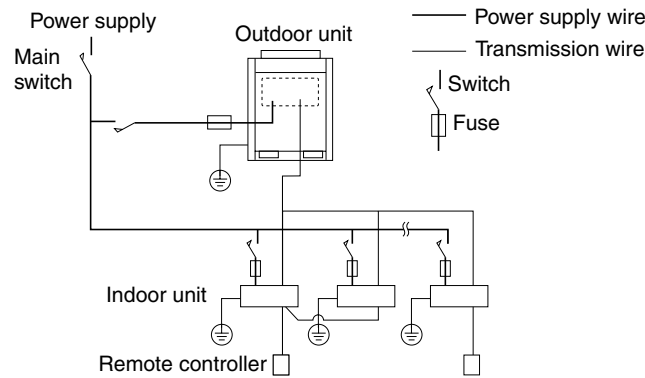


Fig. 18

- When using 1 remote controller for 1 indoor unit. (Normal operation)
- For group control or control by 2 remote controllers

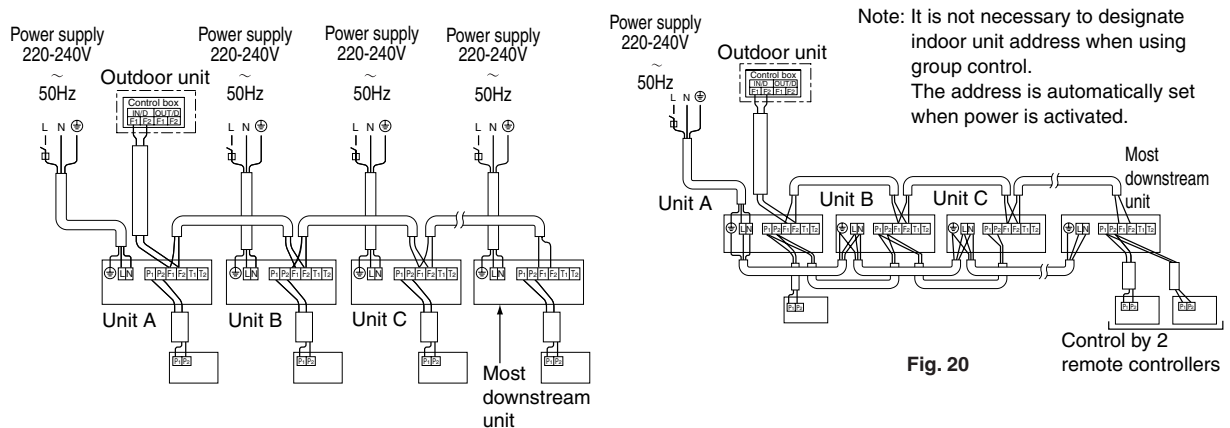


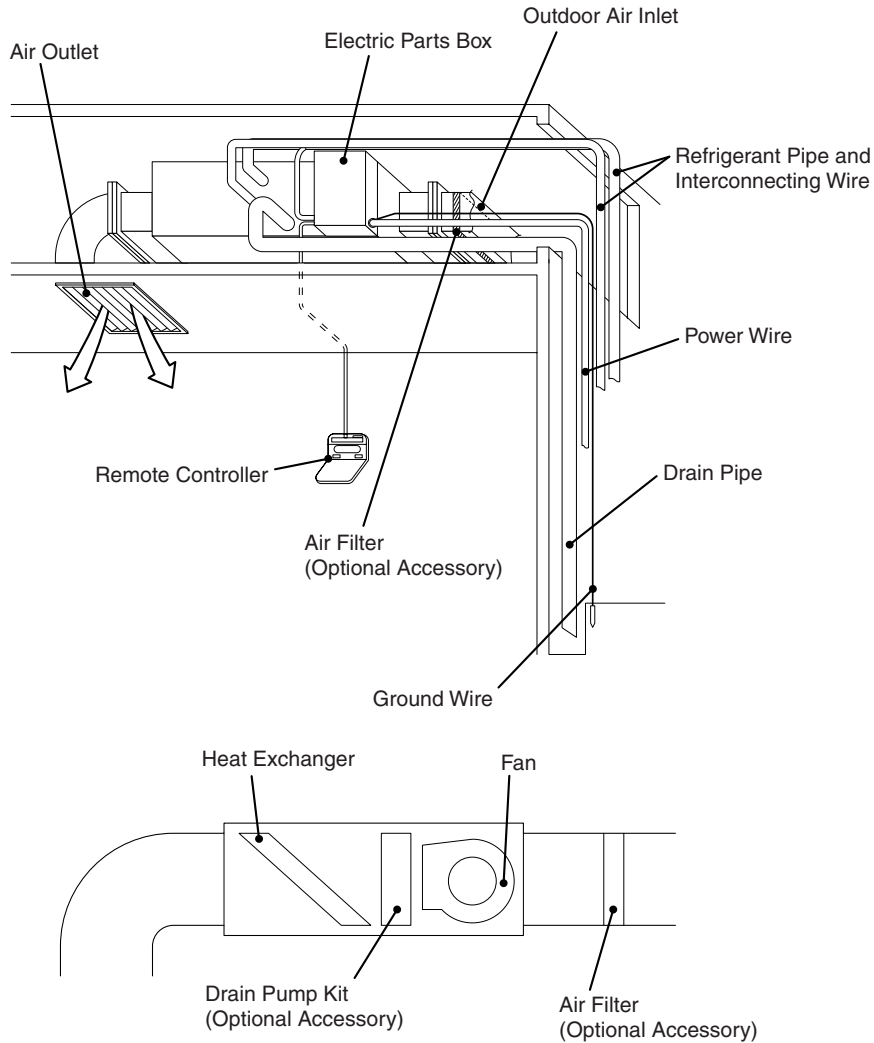
Fig. 19

Fig. 20

[PRECAUTIONS]

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

Name of Each Part



3P086155-6G-3

Operation Range

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

COOLING		[°C]
OUTDOOR TEMPERATURE		
TEMPERATURE		HUMIDITY
DB	19 to 43 (Notes)	30% to 90%
WB	32 or below	Long time operation in a humidity over 90% may cause condensation on the unit and dripping.

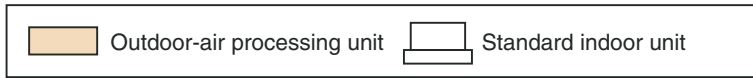
DB: Dry Bulb Temperature
WB: Wet Bulb Temperature

Notes:

- The FAN OPERATION mode is set automatically for DB temperatures of 19°C and below.
- Do not use the COOLING OPERATION or FAN OPERATION modes when outdoor temperature is 5°C or lower. The unit will stop running to protect itself against cold damage. In such case, set the AUTOMATIC OPERATION or HEATING OPERATION mode.

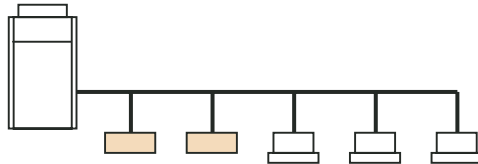
If the temperature or the humidity is beyond these conditions, safety devices may work and the air conditioner may not operate.

Restrictions in case of mixture connection with standard indoor units



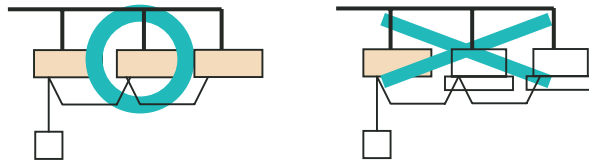
1. Restrictions of the refrigerant piping system

- 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.

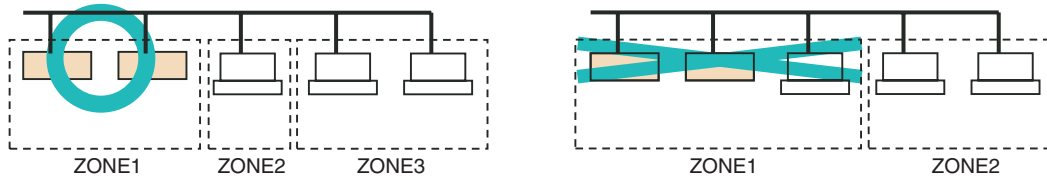


2. Restrictions of the control system

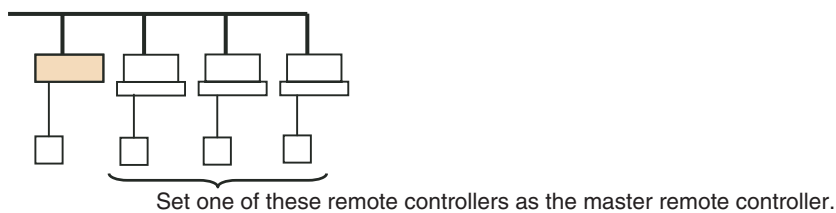
- 1) In case of wiring is mixed with standard indoor units, group control by remote controller is not available, because the setting temperature are different.



- 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.

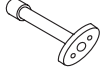

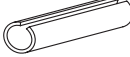
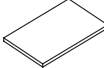
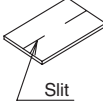


- 3) Don't set the R/C of Outdoor-air processing unit as the master remote controller.



12. Accessories

Standard Accessories

Name	Attached pipe	Insulation for fitting	Sealing pad	Sealing pad	Others
Quantity	1	1 each	1	4	
Shape	1)  (Only FXMQ200 - 250MFV1)	2) for liquid pipe  Inside diameter $\phi 25.4$ 3) for gas pipe  Inside diameter $\phi 31.8$ (Only FXMQ125MFV1)	4)  (Only FXMQ125MFV1)	5)  Slit	6) Spring washer (M10) (2 pieces only for FXMQ200 - 250MFV1) 7) Hexagon head bolt (M10x40) (2 pieces only for FXMQ200 - 250MFV1) 8) Screws for flange connection (M5) (16 pieces for FXMQ125MFV1, 28 pieces for FXMQ200 250MFV1) 9) Washers (8 pieces) 10) Clamps (6 pieces) 11) Installation manual 12) Operation manual

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Optional Accessories (For Unit)

No.	Item	Type	FXMQ125MFV1	FXMQ200MFV1	FXMQ250MFV1
1	Drain pump kit		KDU30L250VE		
2	High efficiency filter	65%	KAFJ372L140	KAFJ372L280	
		90%	KAFJ373L140	KAFJ373L280	
3	Filter chamber ★1		KDJ3705L140	KDJ3705L280	
4	Long life replacement filter		KAFJ371L140	KAFJ371L280	

3D046270

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-MF
1	Wired remote controller		BRC1C62
2	Central remote controller		DCS302CA61
3	Unified ON/OFF controller		DCS301BA61
4	Schedule timer		DST301BA61
5	Wiring adaptor for electrical appendices (1)		KRP2A61
6	Wiring adaptor for electrical appendices (2)		KRP4AA51
7	Adaptor for wiring		KRP1B61

