TOSHIBA
Carrier

E13-3O1

Heat recovery

Model name:

MMY-MAP_4FT9UL (208/230 V, 60 Hz)
MMY-MAP_4FT6UL (460 V, 60 Hz)

Heat pump

Model name:

MMY-MAP_4HT9UL (208/230 V, 60 Hz)
MMY-MAP_4HT6UL (460 V, 60 Hz)

SHRM i
SUPER HEAT RECOVERY MULTI

SMMS i
SUPER MODULAR MULTI SYSTEM

Engineering Data Book

Notice: Toshiba is committed to continuously improving its products to ensure the highest quality and reliability standards, and to meet local regulations and market requirements. All features and specifications are subject to change without prior notice.

Contents

Warnings on refrigerant leakage

Check of Concentration Limit

The room in which the air conditioner is to be installed requires a design that in the event of refrigerant gas leaking out, its concentration will not exceed a set limit.

The refrigerant R410A which is used in the air conditioner is safe, without the toxicity or combustibility of ammonia, and is not restricted by laws to be imposed which protect the ozone layer. However, since it contains more than air, it poses the risk of suffocation if its concentration should rise excessively. Suffocation from leakage of R410A is almost non-existent. With the recent increase in the number of high concentration buildings, however, the installation of multi air conditioner systems is on the increase because of the need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power etc. Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared with conventional individual air conditioners. If a single unit of the multi conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its concentration does not reach the limit (and in the event of an emergency, measures can be made before injury can occur). In a room where the concentration may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detection device. The concentration is as given below.

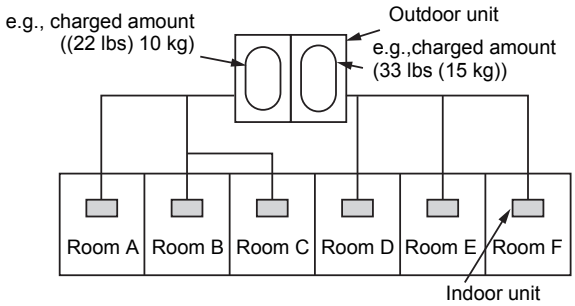
$$\frac{\text{Total amount of refrigerant (lbs (kg))}}{\text{Min. volume of the indoor unit installed room (ft}^3\text{ (m}^3\text{))}} \leq \text{Concentration limit (lbs/ft}^3\text{ (kg/m}^3\text{))}$$

Concentration limit

Compliance to the local applicable regulations and standards for the concentration limit is required.

NOTE 1 :

If there are 2 or more refrigerating systems in a single refrigerating device, the amounts of refrigerant should be as charged in each independent device.



For the amount of charge in this example:

The possible amount of leaked refrigerant gas in rooms A, B and C is 22 lbs (10 kg).

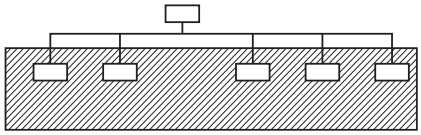
The possible amount of leaked refrigerant gas in rooms D, E and F is 33 lbs (15 kg).

Important

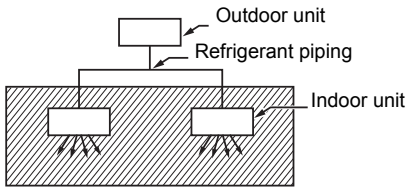
NOTE 2 :

The standards for minimum room volume are as follows.

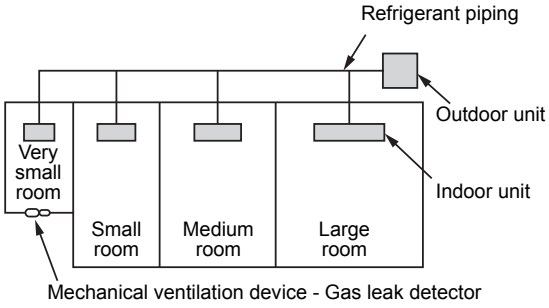
(1) No partition (shaded portion)



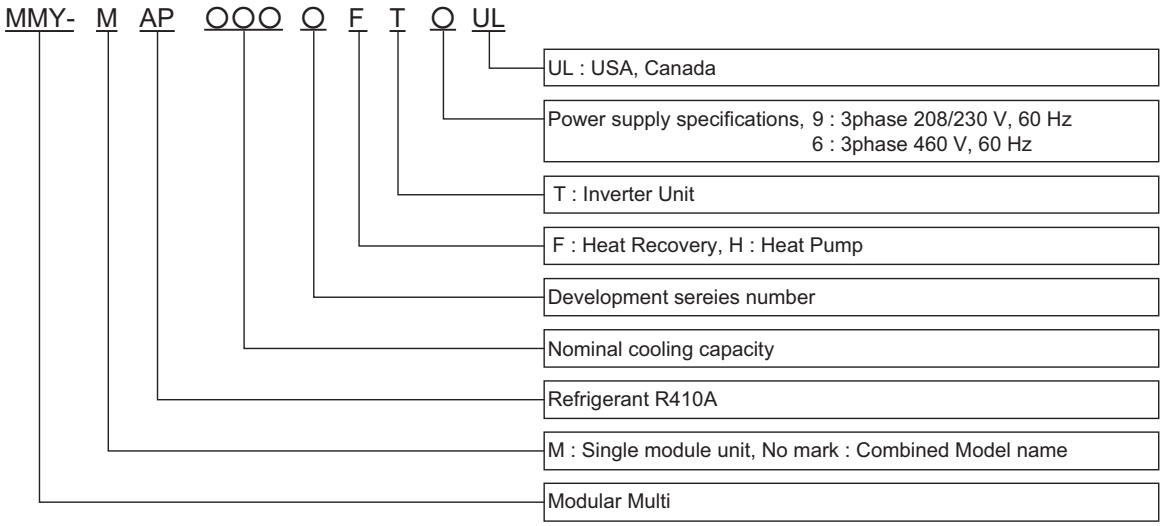
(2) When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas (opening without a door, or an opening 0.15 % or larger than the respective floor spaces at the top or bottom of the door).



(3) If an indoor unit is installed in each partitioned room and the refrigerant piping is interconnected, the smallest room of course becomes the object. But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded, the volume of the next smallest room becomes the object.



1-1. Allocation standard of model name



1-2. Summary of system equipments

1-2-1. Outdoor units

1-2-1-1. Heat recovery

Unit type			Inverter unit			Appearance
Model name	208/230 V, 60 Hz	MMY-	MAP0724FT9UL	MAP0964FT9UL	MAP1204FT9UL	
	460 V, 60 Hz	MMY-	MAP0724FT6UL	MAP0964FT6UL	MAP1204FT6UL	
Capacity type			072 type	096 type	120 type	
Capacity code			72	96	120	

■ **Combination of outdoor units**

Unit type			Inverter unit				
Model name	208/230 V, 60 Hz	MMY-	AP1444FT9UL	AP1684FT9UL	AP1924FT9UL	AP2164FT9UL	AP2404FT9UL
	460 V, 60 Hz	MMY-	AP1444FT6UL	AP1684FT6UL	AP1924FT6UL	AP2164FT6UL	AP2404FT6UL
Capacity type			144 type	168 type	192 type	216 type	240 type
Capacity code			144	168	192	216	240
Combined outdoor units			072 type	096 type	096 type	120 type	120 type
			072 type	072 type	096 type	096 type	120 type

1-2-1-2. Heat pump

Unit type			Inverter unit			Appearance
Model name	208/230 V, 60 Hz	MMY-	MAP0724HT9UL	MAP0964HT9UL	MAP1144FT9UL	
	460 V, 60 Hz	MMY-	MAP0724HT6UL	MAP0964HT6UL	MAP1144FT6UL	
Capacity type			072 type	096 type	114 type	
Capacity code			72	96	114	

■ **Combination of outdoor units**

Unit type			Inverter unit			
Model name	208/230 V, 60 Hz	MMY-	AP1444HT9UL	AP1684HT9UL	AP1924HT9UL	AP2284HT9UL
	460 V, 60 Hz	MMY-	AP1444HT6UL	AP1684HT6UL	AP1924HT6UL	AP2284HT6UL
Capacity type			144 type	168 type	192 type	228 type
Capacity code			144	168	192	228
Combined outdoor units			072 type	096 type	096 type	114 type
			072 type	072 type	096 type	114 type

1-2-2. Indoor unit

Type	Appearance	Model name	Capacity type	Capacity code	Cooling capacity (kBtu/h)	Heating capacity (kBtu/h)
4-Way Cassette type		**MMU-AP0152H2UL**	015 type	15.4	15.4	17
		MMU-AP0182H2UL	018 type	18	18	20
		MMU-AP0212H2UL	021 type	21	21	24
		MMU-AP0242H2UL	024 type	24	24	27
		MMU-AP0302H2UL	030 type	30	30	34
		MMU-AP0362H2UL	036 type	36	36	40
		MMU-AP0422H2UL	042 type	42	42	47.5
Compact 4-Way Cassette type		**MMU-AP0071MH2UL**	007 type	7.5	7.5	8.5
		MMU-AP0091MH2UL	009 type	9.5	9.5	10.5
		MMU-AP0121MH2UL	012 type	12	12	13.5
		MMU-AP0151MH2UL	015 type	15.4	15.4	17
		MMU-AP0181MH2UL	018 type	18	18	20
Ceiling type		**MMC-AP0181H2UL**	018 type	18	18	20
		MMC-AP0241H2UL	024 type	24	24	27
		MMC-AP0361H2UL	036 type	36	36	40
		MMC-AP0421H2UL	042 type	42	42	47.5
High Wall type		**MMK-AP0073H2UL**	007 type	7.5	7.5	8.5
		MMK-AP0093H2UL	009 type	9.5	9.5	10.5
		MMK-AP0123H2UL	012 type	12	12	13.5
		MMK-AP0153H2UL	015 type	15.4	15.4	17
		MMK-AP0183H2UL	018 type	18	18	20
		MMK-AP0243H2UL	024 type	24	24	27
Medium Static Ducted type		**MMD-AP0074BH2UL**	007 type	7.5	7.5	8.5
		MMD-AP0094BH2UL	009 type	9.5	9.5	10.5
		MMD-AP0124BH2UL	012 type	12	12	13.5
		MMD-AP0154BH2UL	015 type	15.4	15.4	17
		MMD-AP0184BH2UL	018 type	18	18	20
		MMD-AP0214BH2UL	021 type	21	21	24
		MMD-AP0244BH2UL	024 type	24	24	27
		MMD-AP0304BH2UL	030 type	30	30	34
		MMD-AP0364BH2UL	036 type	36	36	40
		MMD-AP0424BH2UL	042 type	42	42	47.5
		MMD-AP0484BH2UL	048 type	48	48	54
High Static Ducted type		**MMD-AP0304H2UL**	030 type	30	30	34
		MMD-AP0364H2UL	036 type	36	36	40
		MMD-AP0484H2UL	048 type	48	48	54
Slim Ducted type		**MMD-AP0074SPH2UL**	007 type	7.5	7.5	8.5
		MMD-AP0094SPH2UL	009 type	9.5	9.5	10.5
		MMD-AP0124SPH2UL	012 type	12	12	13.5
		MMD-AP0154SPH2UL	015 type	15.4	15.4	17
		MMD-AP0184SPH2UL	018 type	18	18	20

1-2-3. Branching joints and headers

Name		Model name	Appearance	Remarks
Y-shape branching joint	Heat recovery	RBM-BY55FUL		
		RBM-BY105FUL		
		RBM-BY205FUL		
	Heat pump	RBM-BY55UL		
		RBM-BY105UL		
		RBM-BY205UL		
4-branching header	Heat recovery	RBM-HY1043FUL		
		RBM-HY2043FUL		
	Heat pump	RBM-HY1043UL		
		RBM-HY2043UL		
8-branching header	Heat recovery	RBM-HY1083FUL		
		RBM-HY2083FUL		
	Heat pump	RBM-HY1083UL		
		RBM-HY2083UL		
Branching joint for connection of outdoor units	Heat recovery	RBM-BT14FUL		
	Heat pump	RBM-BT14UL		

1-2-4. FS units (Flow selector units)

Name	Model name	Appearance	Remarks
FS unit	RBM-Y0383FUL		
	RBM-Y0613FUL		
	RBM-Y0963FUL		

1-2-5. Remote control

Name	Model name	Remarks
Wired remote control	RBC-AMT32UL	
Simple wired remote control	RBC-AS21UL	
Wireless remote control kit	RBC-AX31U(W)-UL	For 4-Way Cassette type
	RBC-AX22CUL	For Ceiling type
	TCB-AX21UL	For Compact 4-Way Cassette type, Medium Static Ducted type, High Static Ducted type, Slim Ducted type
Central remote control	BMS-CM1281TLUL	
Wired remote control with weekly timer	RBC-AMS41UL	

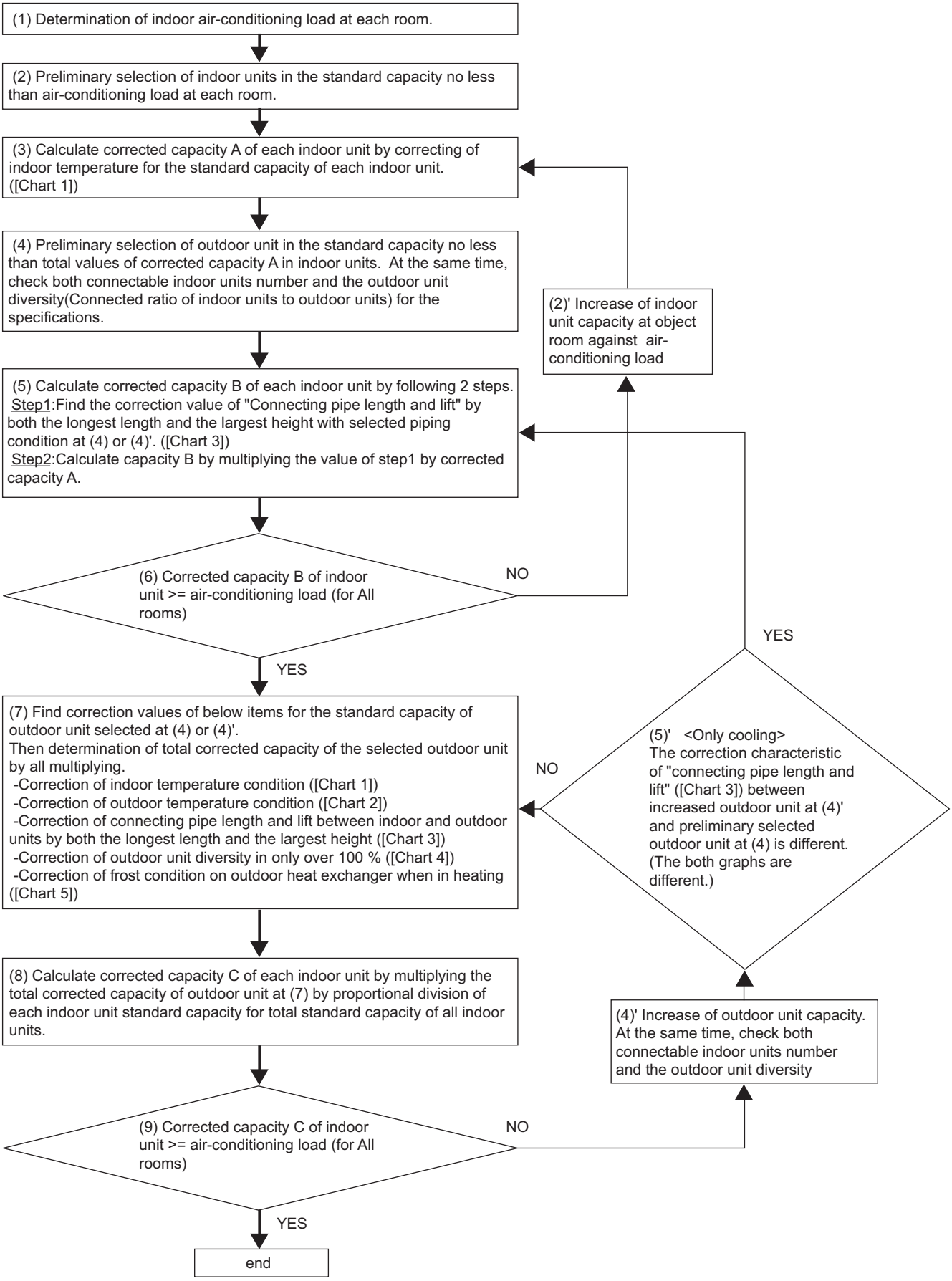
1-2-6. Optional PCB of outdoor unit

Name	Model name	Remarks
Power peak-cut control board	TCB-PCDM4UL	
External master ON/OFF control board	TCB-PCMO4UL	
Output control board	TCB-PCIN4UL	

1-2-7. Controls

Name	Model name	Remarks
Remote location ON/OFF Control Box	TCB-IFCB-4UL	
“1:1 model” Connection Interface	TCB-PCNT31TLUL	
LonWorks LN Interface	TCB-IFLN642TLUL	
Smart manager	BMS-SM1280HTLUL	
Energy Monitoring Relay Interface	BMS-IFWH5UL	
Digital I/O Relay Interface	BMS-IFDD03UL	
BACnet Server	BMS-LSV6UL BMS-STBN09UL	
TCS-NET Relay Interface	BMS-IFLSV4UL	

2-1. Selection flow chart



2-2. Combination conditions for indoor unit and outdoor unit

2-2-1. The capacity code for indoor unit, the capacity code is decided for each capacity rank.

Capacity rank type	007	009	012	015	018	021	024	027	030	036	042	048	054	072	096
Capacity code (Equivalent to capacity)	7.5	9.5	12	15.4	18	21	24	27	30	36	42	48	54	72	96

2-2-2. The capacity codes of outdoor units are decided at each capacity type. The maximum number of connectable indoor units and the total value of capacity codes of the indoor units are also decided.

System	Outdoor unit capacity type	Outdoor capacity code (Equivalent to capacity)	Maximum number of indoor units			
			If "Medium Static Ducted Type (MMD-AP***BH)" is excluded in the system		If "Medium Static Ducted Type (MMD-AP***BH)" is included in the system	
			Height difference between indoor units		Height difference between indoor units	
			49 ft (15 m) or less	Over 49 ft (15 m)	49 ft (15 m) or less	Over 49 ft (15 m)
Heat recovery	072 type	72	12	10	11	10
	096 type	96	16	13	15	13
	120 type	120	20	16	19	16
	144 type	144	24	20	23	20
	168 type	168	28	23	26	23
	192 type	192	32	26	30	26
	216 type	216	36	30	34	30
	240 type	240	40	33	38	33
Heat pump	072 type	72	12	10	11	10
	096 type	96	16	13	15	13
	114 type	114	19	15	18	15
	144 type	144	24	20	23	20
	168 type	168	28	23	26	23
	192 type	192	32	26	30	26
	228 type	228	38	31	36	31

NOTE

Compared with the capacity code of the outdoor unit, the total value of capacity codes of the connectable indoor units differs based on the height difference between the indoor units.

When the height difference between the indoor units is 49 ft (15 m) or less

If "Medium Static Ducted Type (MMD-AP***BH)" is excluded in the system: Total indoor capacity code is between 80 % and 125 % of the capacity of the outdoor unit.

If "Medium Static Ducted Type (MMD-AP***BH)" is included in the system: Total indoor capacity code is between 80 % and 120 % of the capacity of the outdoor unit.

When the height difference between the indoor units is over 49 ft (15 m)

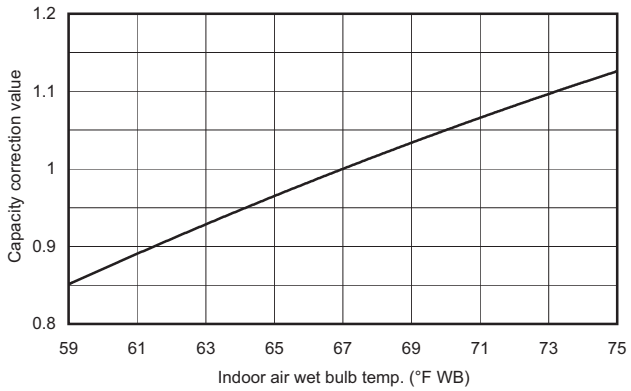
Total indoor unit capacity code (Equivalent to Capacity) is between 80 % and 105 % of the capacity of the outdoor unit.

2-3. Cooling/heating capacity characteristics

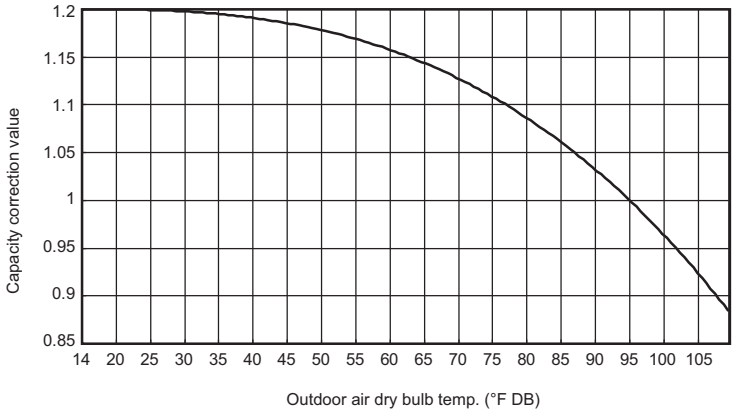
2-3-1. Heat recovery

2-3-1-1. Correction charts for cooling capacity calculation

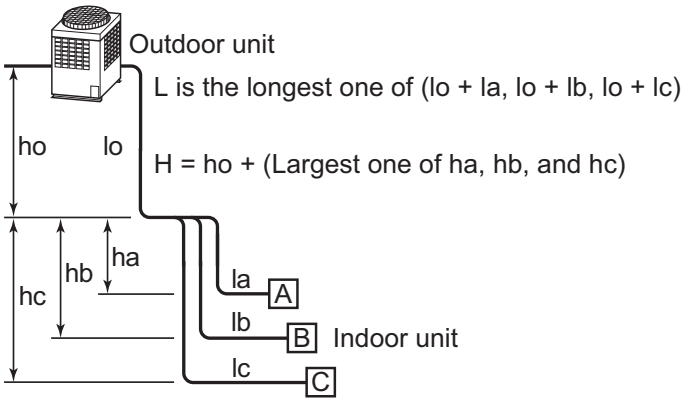
[Chart 1] Indoor air wet bulb temperature vs. capacity correction value



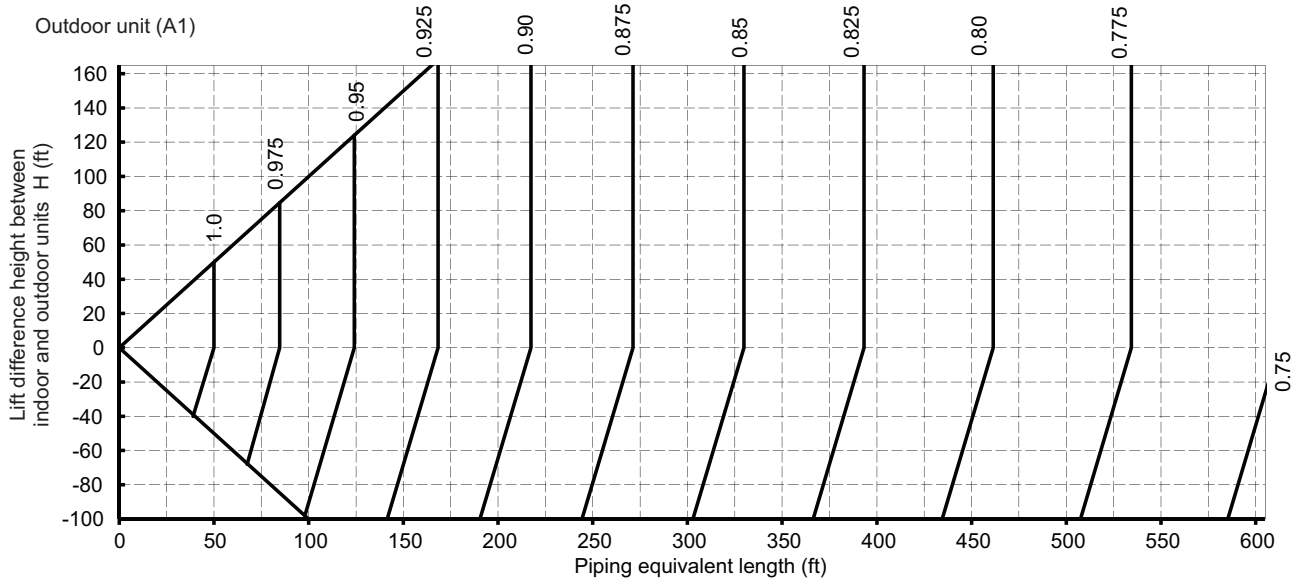
[Chart 2] Outdoor air dry bulb temperature vs. capacity correction value

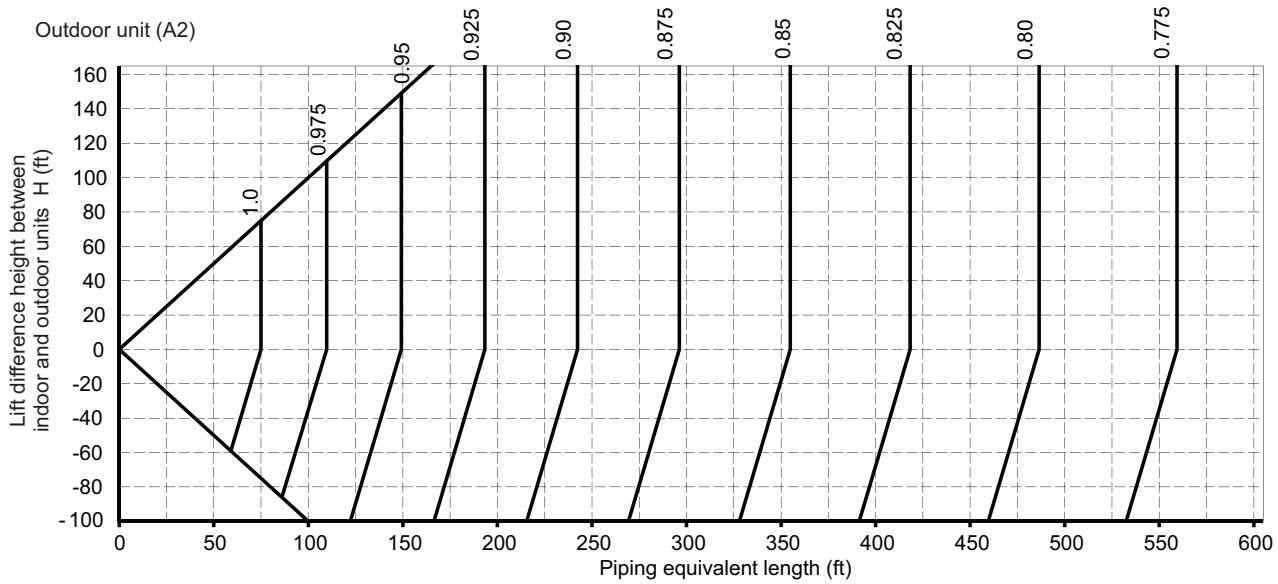


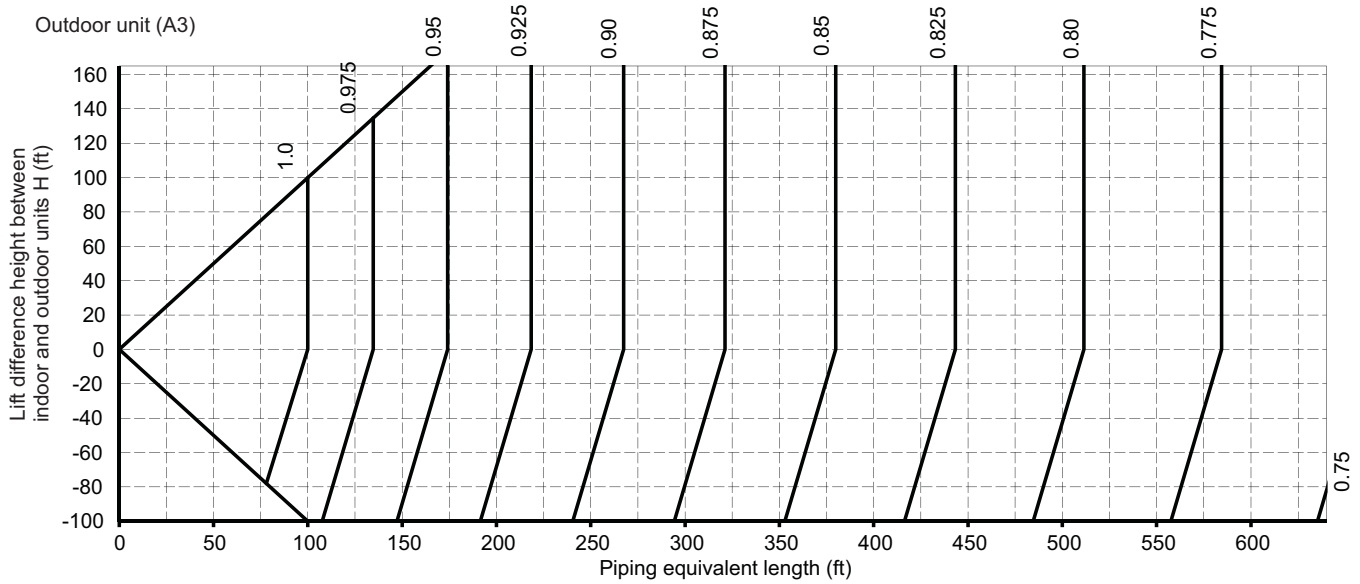
[Chart 3] Connecting pipe length and lift difference between indoor and outdoor units vs. capacity correction value

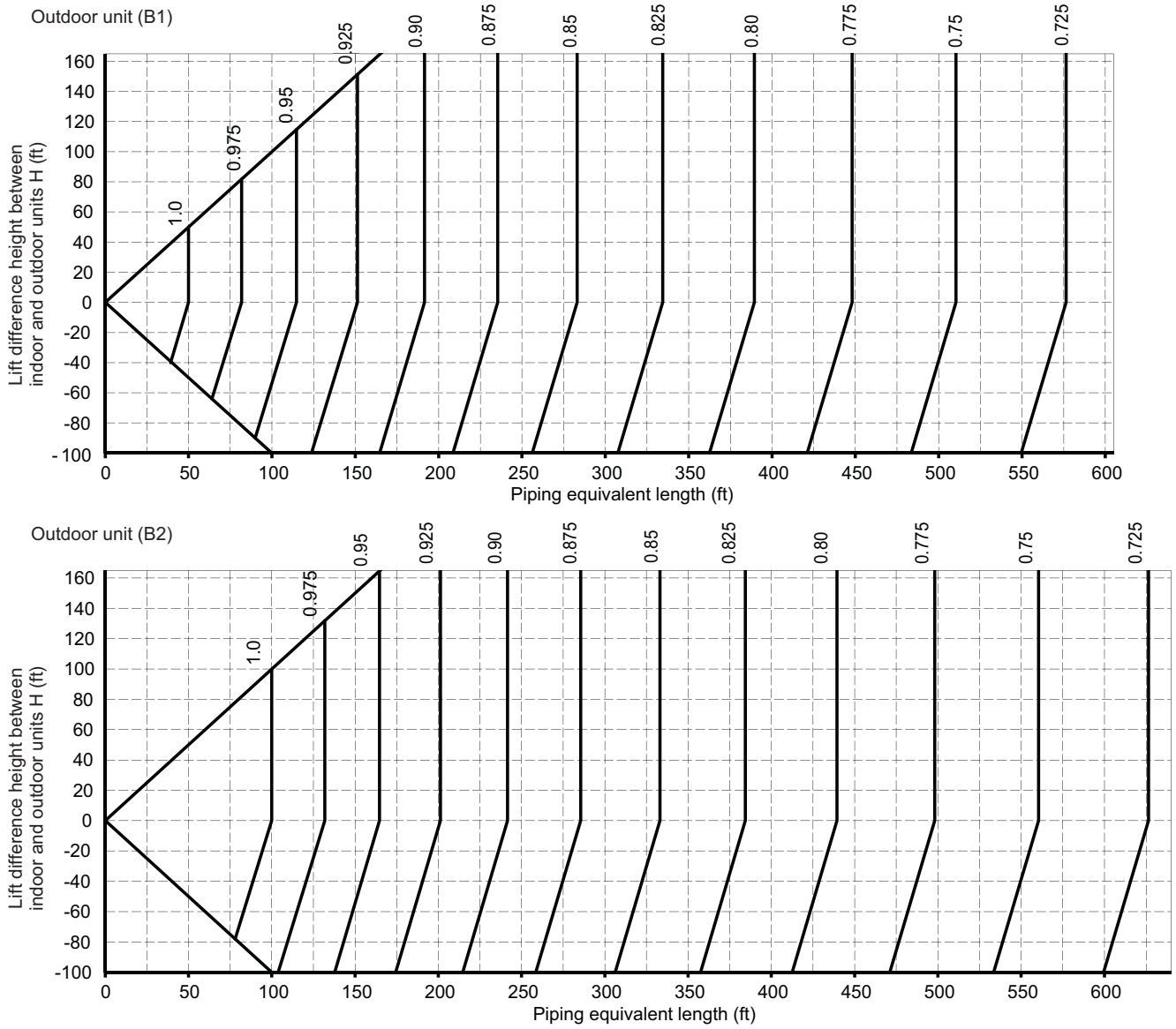


Outdoor unit capacity type	Graph
072	A1
096	B1
120	A2
144	A3
168	B2
192	
216	A3
240	B2

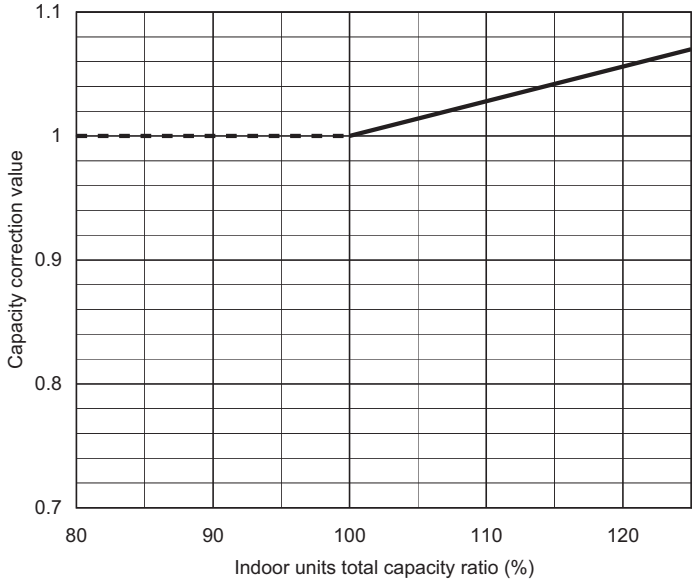

Outdoor unit (A1)
Lift difference height between indoor and outdoor units H (ft)
Piping equivalent length (ft)
1.0
0.975
0.95
0.925
0.90
0.875
0.85
0.825
0.80
0.775
0.75


Outdoor unit (A2)
Lift difference height between indoor and outdoor units H (ft)
Piping equivalent length (ft)
1.0
0.975
0.95
0.925
0.90
0.875
0.85
0.825
0.80
0.775


Outdoor unit (A3)
Lift difference height between indoor and outdoor units H (ft)
Piping equivalent length (ft)
1.0
0.975
0.95
0.925
0.90
0.875
0.85
0.825
0.80
0.775
0.75



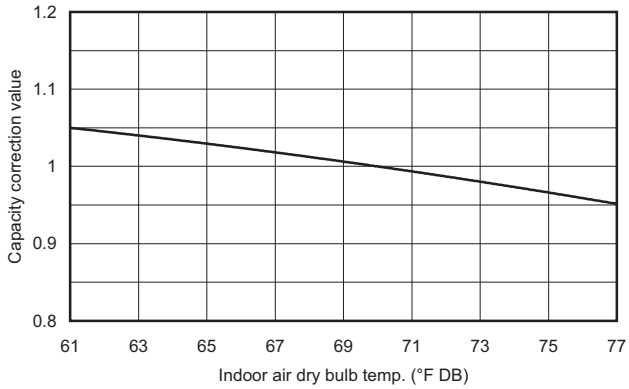
[Chart 4]* Correction of outdoor unit diversity



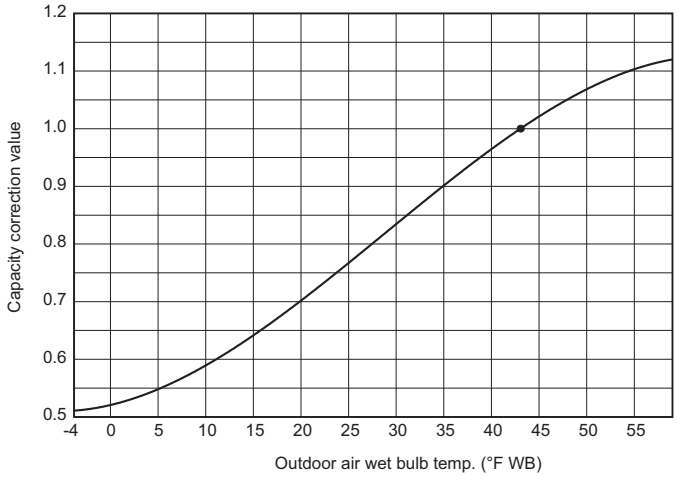
* Coefficient to use for the correction of the outdoor unit capacity when the total capacity of the indoor units are not equal to the outdoor unit capacity.

2-3-1-2. Correction charts for heating capacity calculation

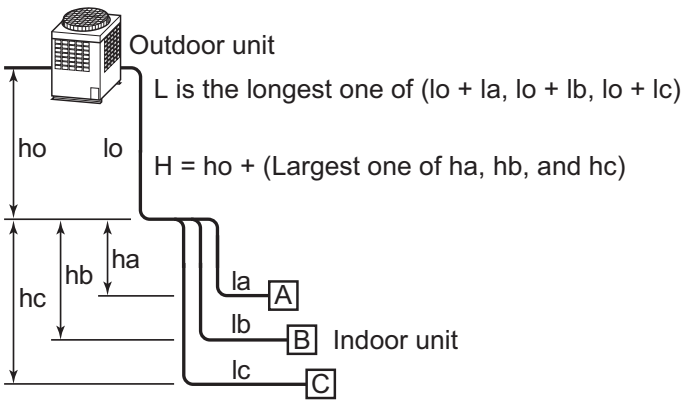
[Chart 1] Indoor air dry bulb temperature vs. capacity correction value



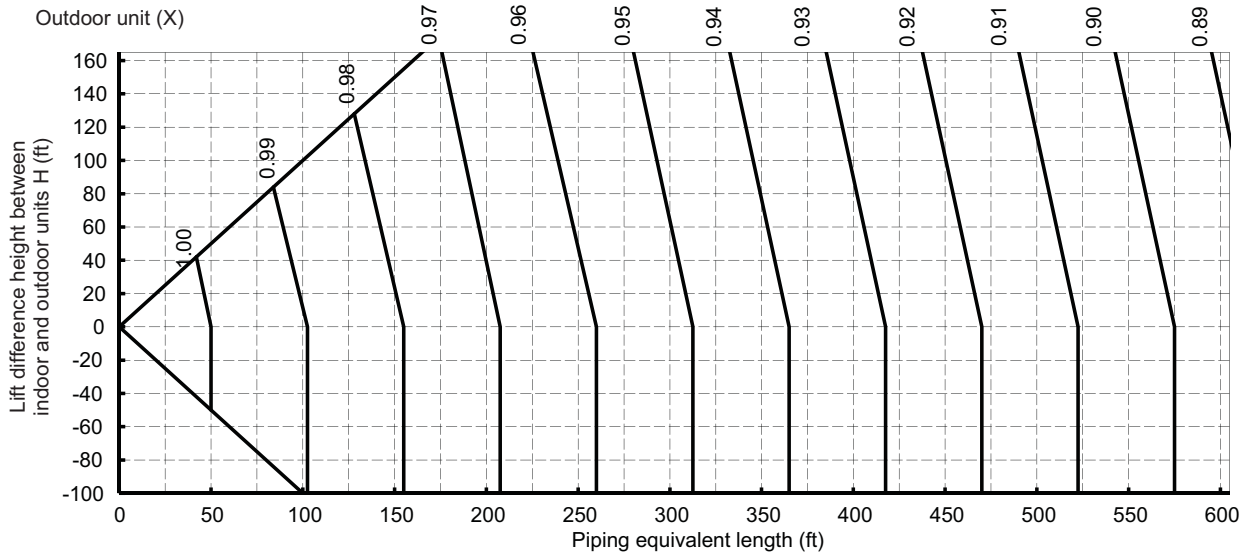
[Chart 2] Outdoor air wet bulb temperature vs. capacity correction value

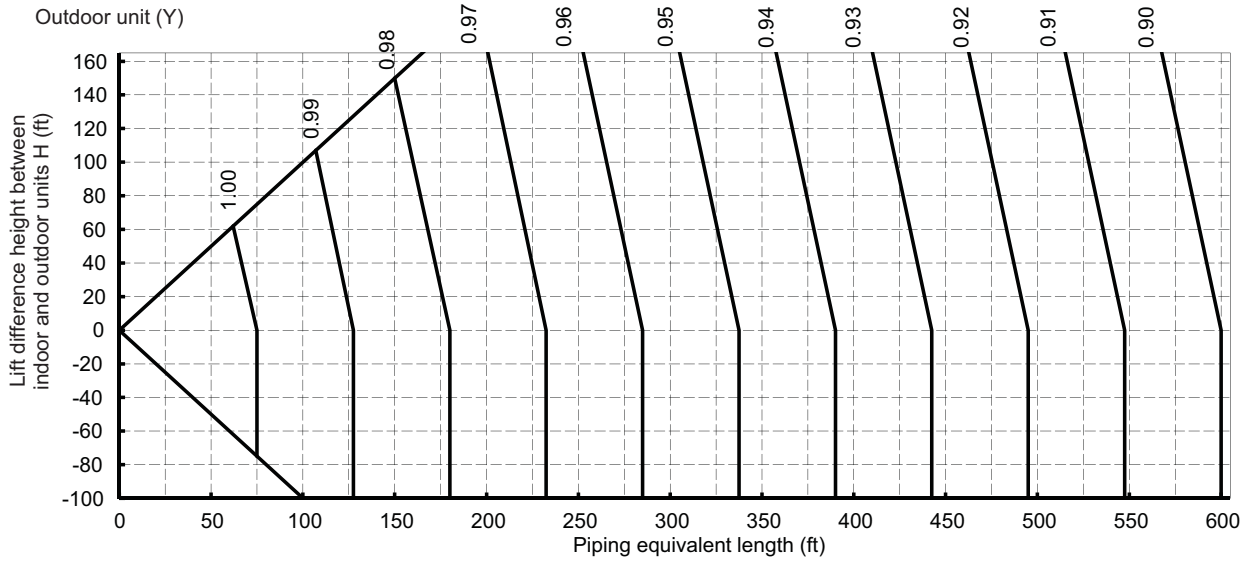


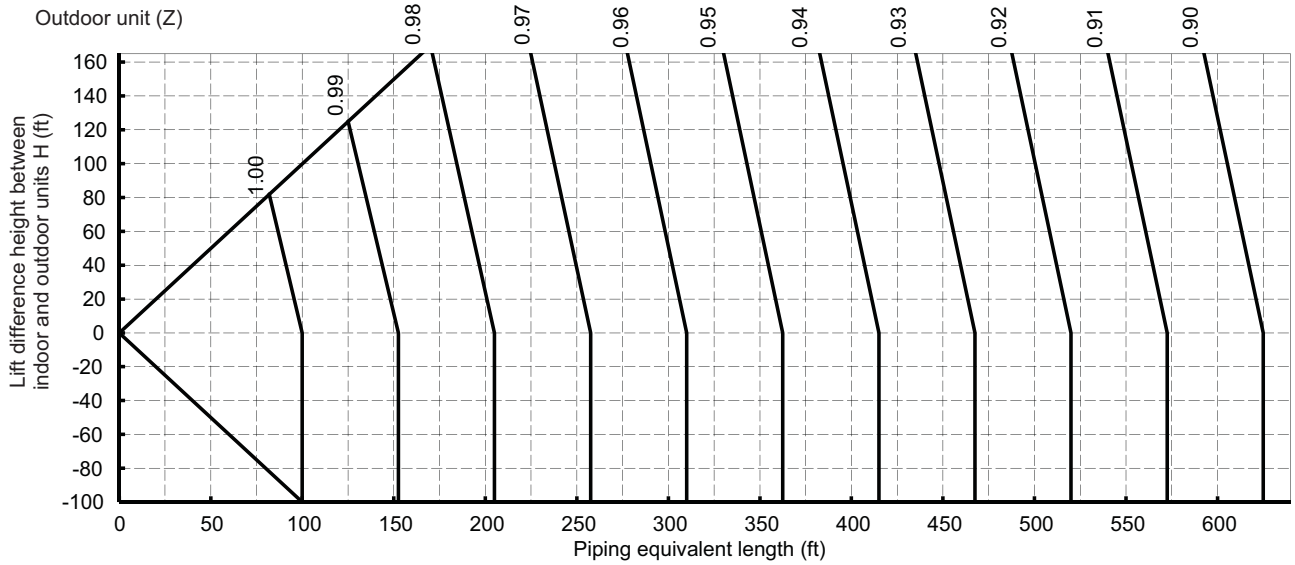
[Chart 3] Connecting pipe length and lift difference between indoor and outdoor units vs. capacity correction value



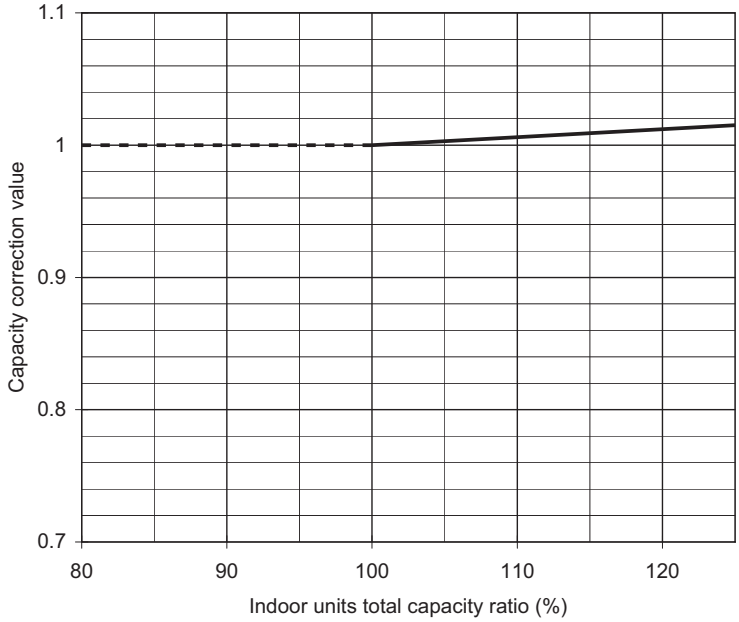
Outdoor unit capacity type	Graph
072	X
096	
120	Y
144	Z
168	
192	
216	
240	


Outdoor unit (X)
0.97
0.96
0.95
0.94
0.93
0.92
0.91
0.90
0.89
0.98
0.99
1.00
Lift difference height between indoor and outdoor units H (ft)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
0
50
100
150
200
250
300
350
400
450
500
550
600
Piping equivalent length (ft)


Outdoor unit (Y)
0.98
0.97
0.96
0.95
0.94
0.93
0.92
0.91
0.90
0.99
1.00
Lift difference height between indoor and outdoor units H (ft)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
0
50
100
150
200
250
300
350
400
450
500
550
600
Piping equivalent length (ft)


Outdoor unit (Z)
0.98
0.97
0.96
0.95
0.94
0.93
0.92
0.91
0.90
0.99
1.00
Lift difference height between indoor and outdoor units H (ft)
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
0
50
100
150
200
250
300
350
400
450
500
550
600
Piping equivalent length (ft)

[Chart 4]* Correction of outdoor unit diversity

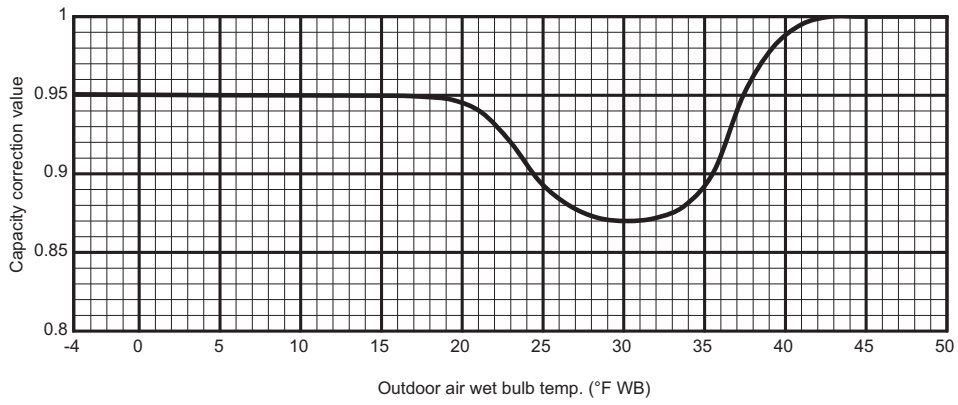


* Coefficient to use for the correction of the outdoor unit capacity when the total capacity of the indoor units are not equal to the outdoor unit capacity.

2-3-1-3. Capacity correction in case of frost on the outdoor heat exchanger when in heating

Correct the heating capacity when frost can be found on the outdoor heat exchanger.
Heating capacity =Capacity after correction of outdoor unit x Correction value of capacity resulted from frost (Capacity after correction of outdoor unit: Heating capacity calculated in the above item 2.)

[Chart 5] Capacity correction in case of frost on the outdoor heat exchanger



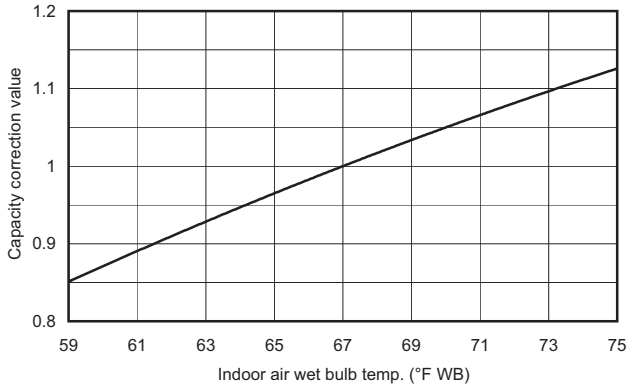
2-3-1-4. Rated conditions

Cooling: Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating: Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb

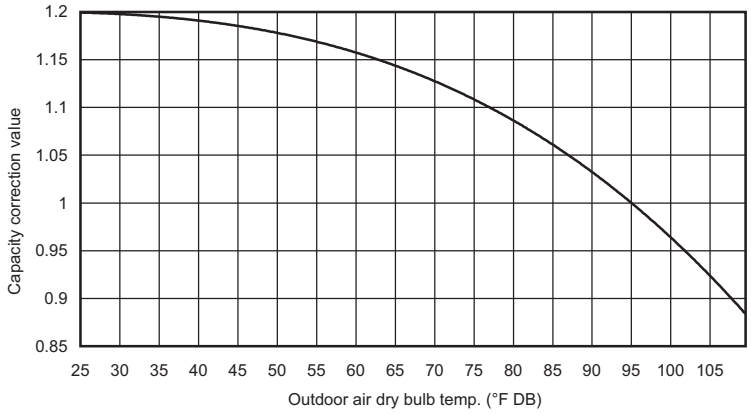
2-3-2. Heat pump

2-3-2-1. Correction charts for cooling capacity calculation

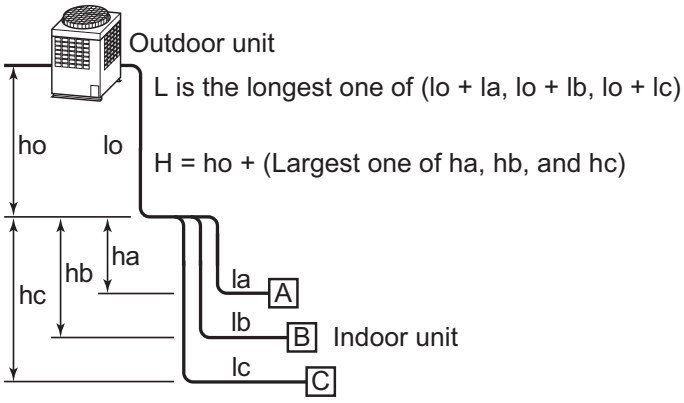
[Chart 1] Indoor air wet bulb temperature vs. capacity correction value



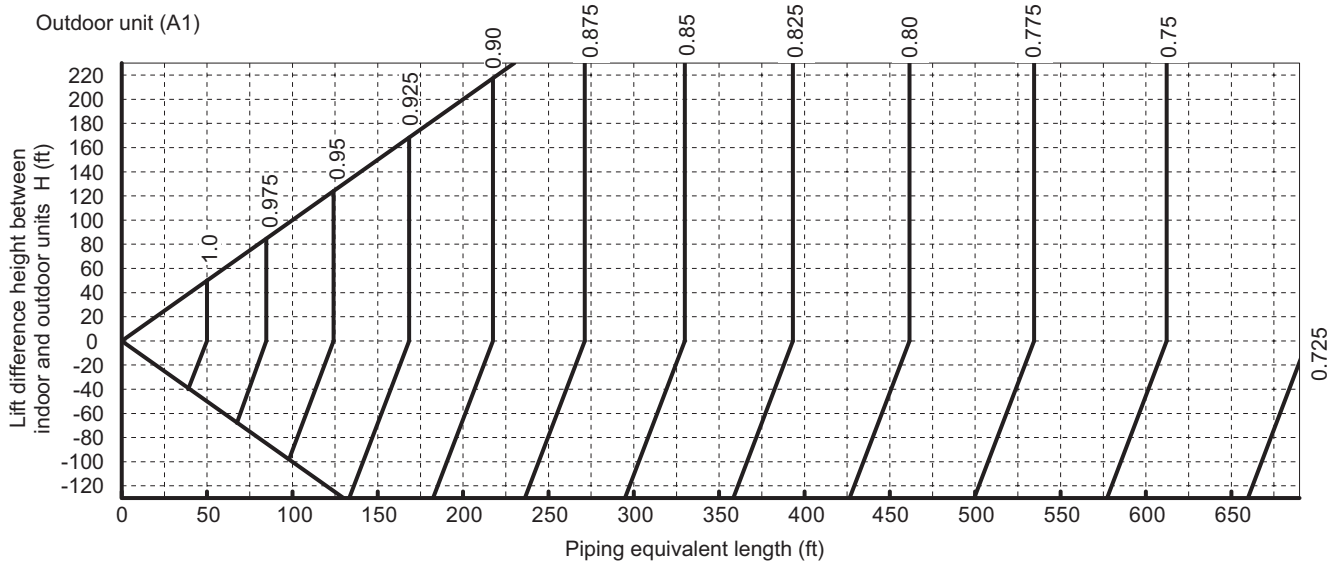
[Chart 2] Outdoor air dry bulb temperature vs. capacity correction value

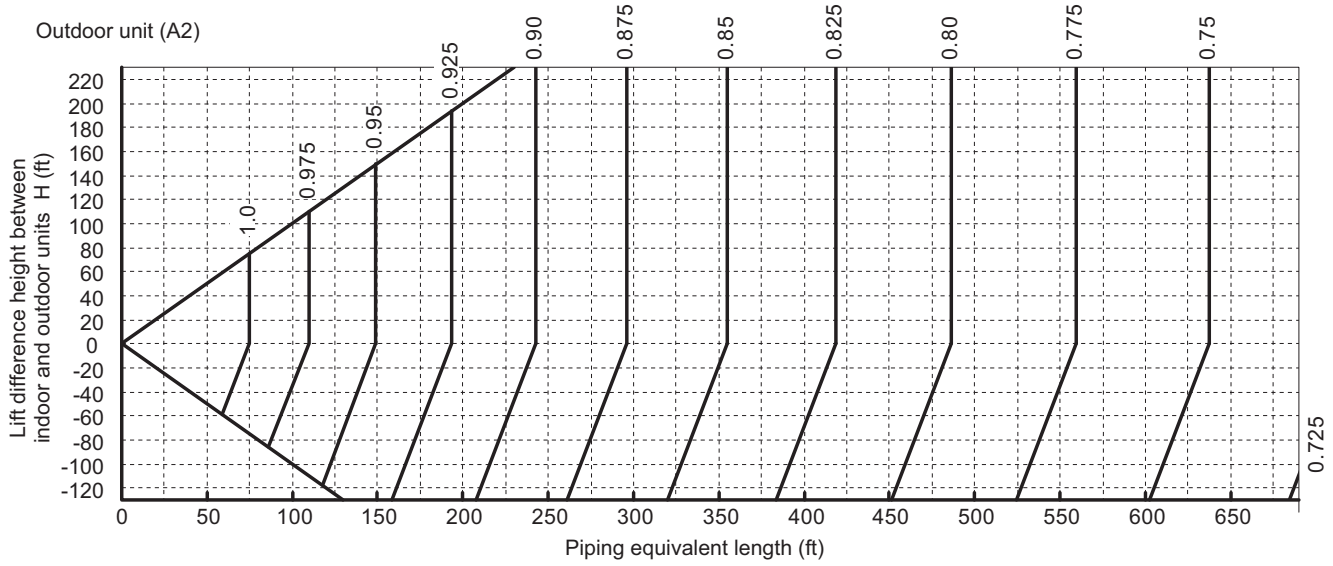


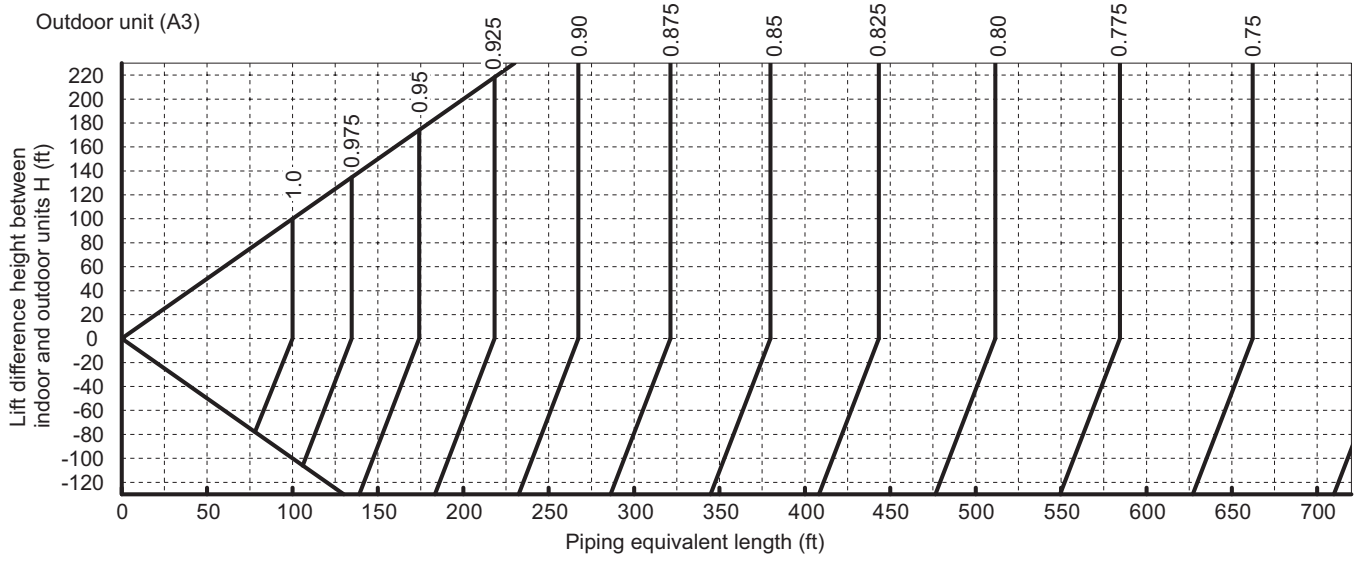
[Chart 3] Connecting pipe length and lift difference between indoor and outdoor units vs. capacity correction value

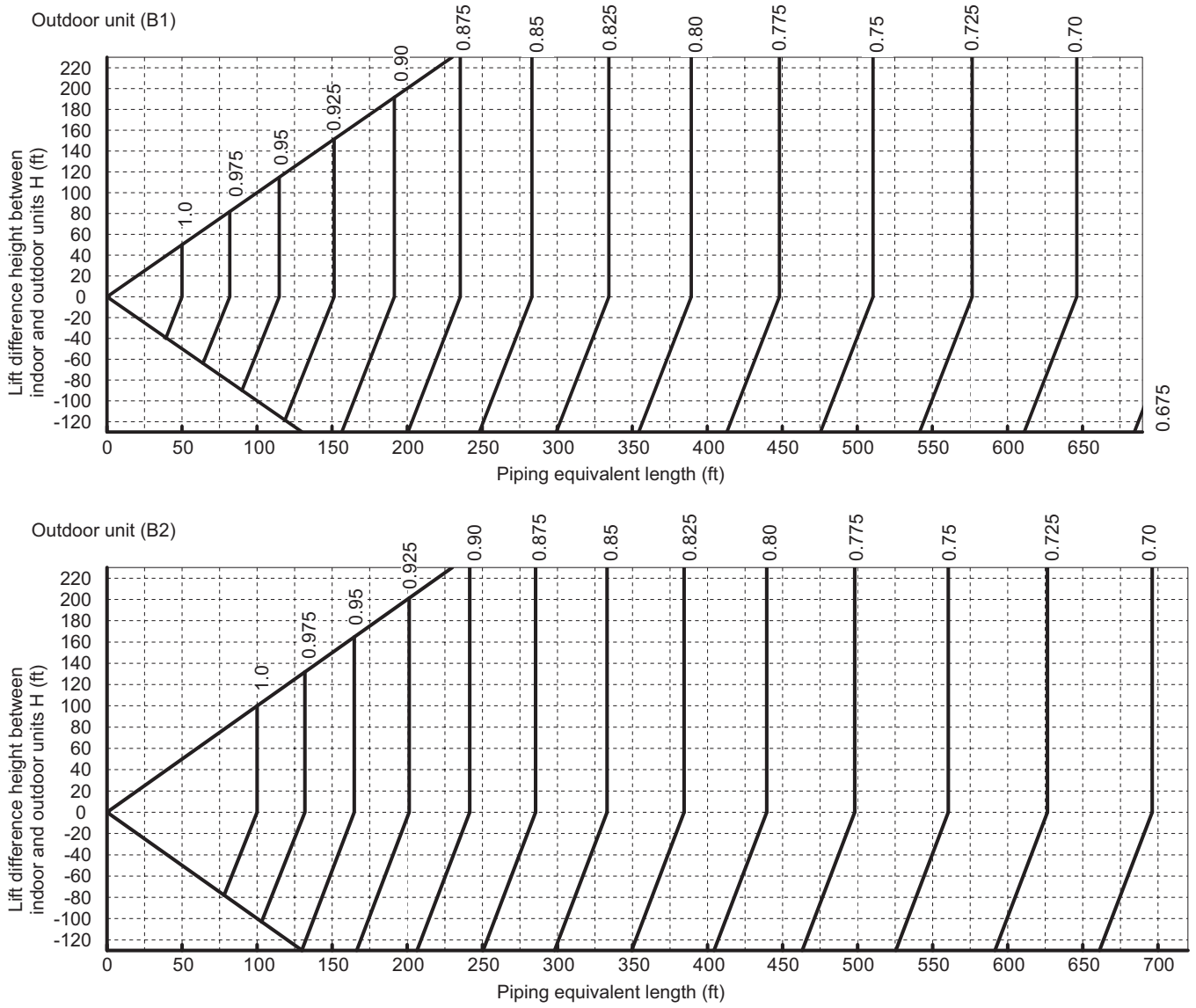


Outdoor unit capacity type	Graph
072	A1
096	B1
114	A2
144	A3
168	B2
192	
228	A3

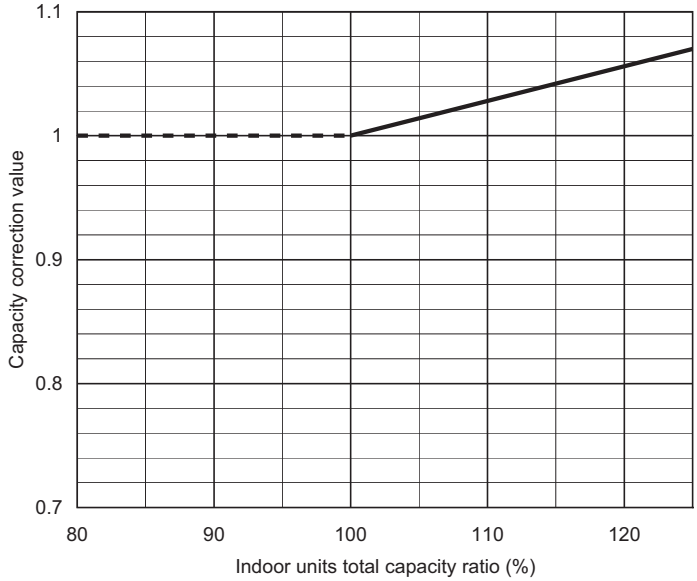

Outdoor unit (A1)
Lift difference height between indoor and outdoor units H (ft)
Piping equivalent length (ft)
1.0
0.975
0.95
0.925
0.90
0.875
0.85
0.825
0.80
0.775
0.75
0.725


Outdoor unit (A2)
Lift difference height between indoor and outdoor units H (ft)
Piping equivalent length (ft)
1.0
0.975
0.95
0.925
0.90
0.875
0.85
0.825
0.80
0.775
0.75
0.725


Outdoor unit (A3)
Lift difference height between indoor and outdoor units H (ft)
Piping equivalent length (ft)
1.0
0.975
0.95
0.925
0.90
0.875
0.85
0.825
0.80
0.775
0.75



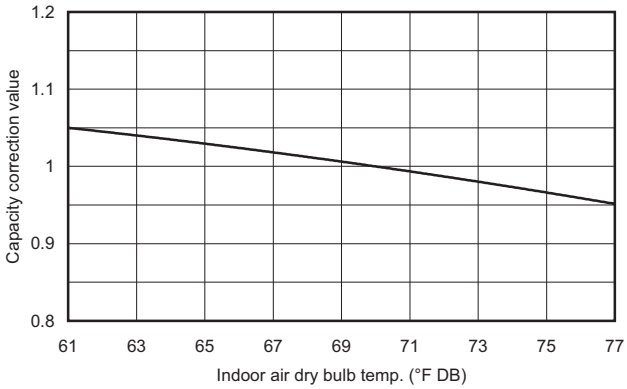
[Chart 4]* Correction of outdoor unit diversity



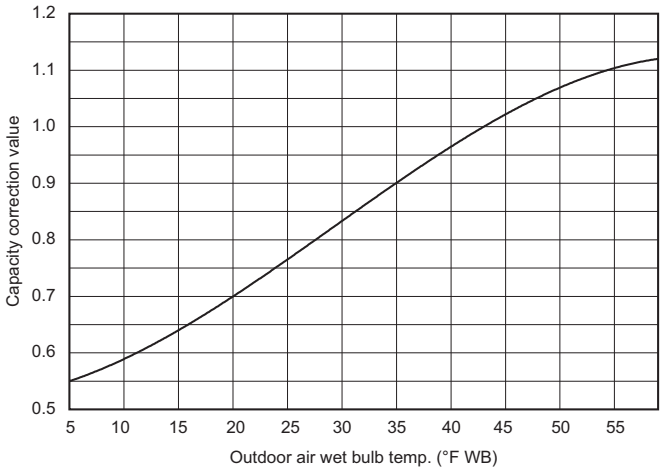
* Coefficient to use for the correction of the outdoor unit capacity when the total capacity of the indoor units are not equal to the outdoor unit capacity.

2-3-2-2. Correction charts for heating capacity calculation

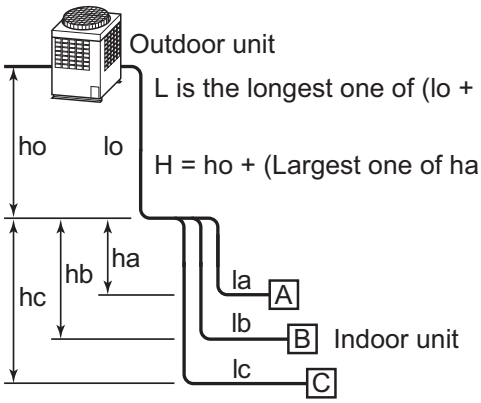
[Chart 1] Indoor air dry bulb temperature vs. capacity correction value



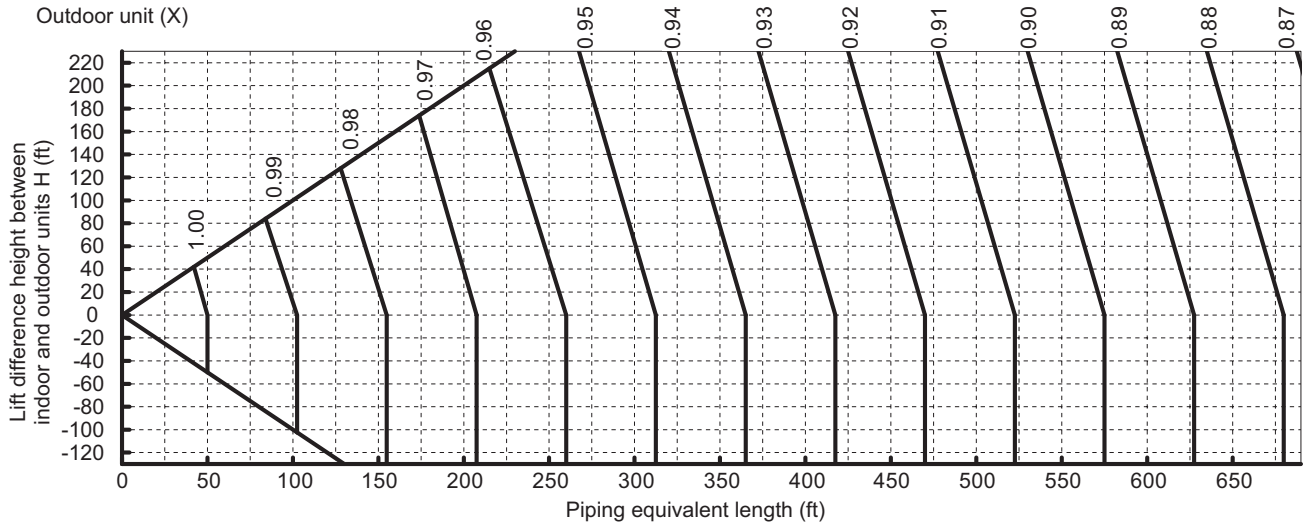
[Chart 2] Outdoor air wet bulb temperature vs. capacity correction value

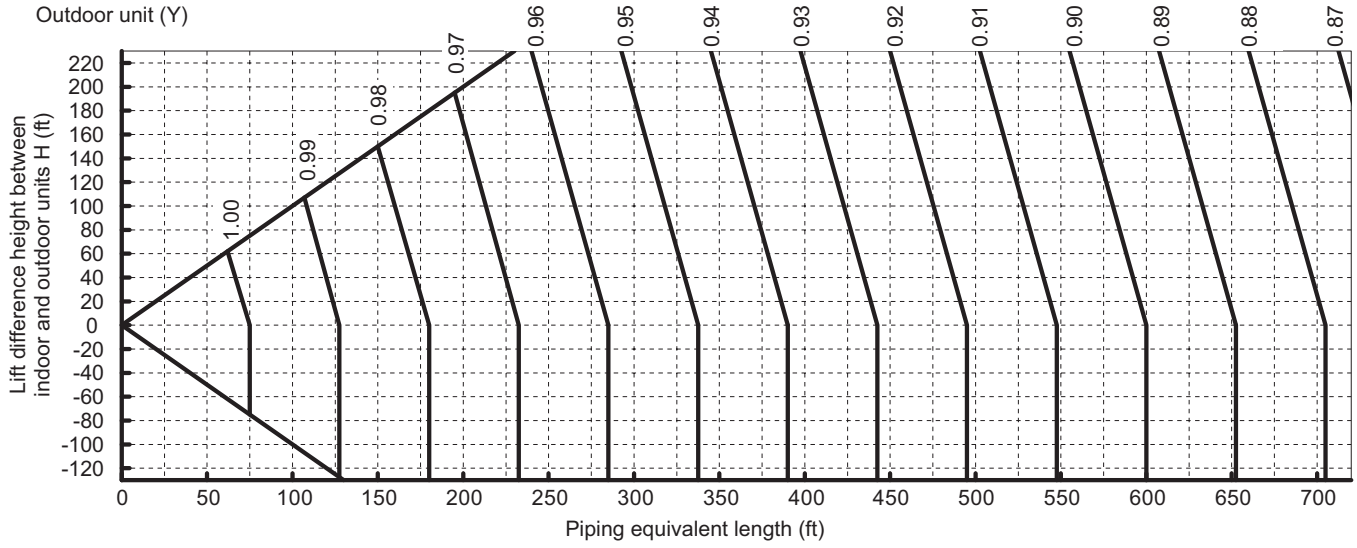


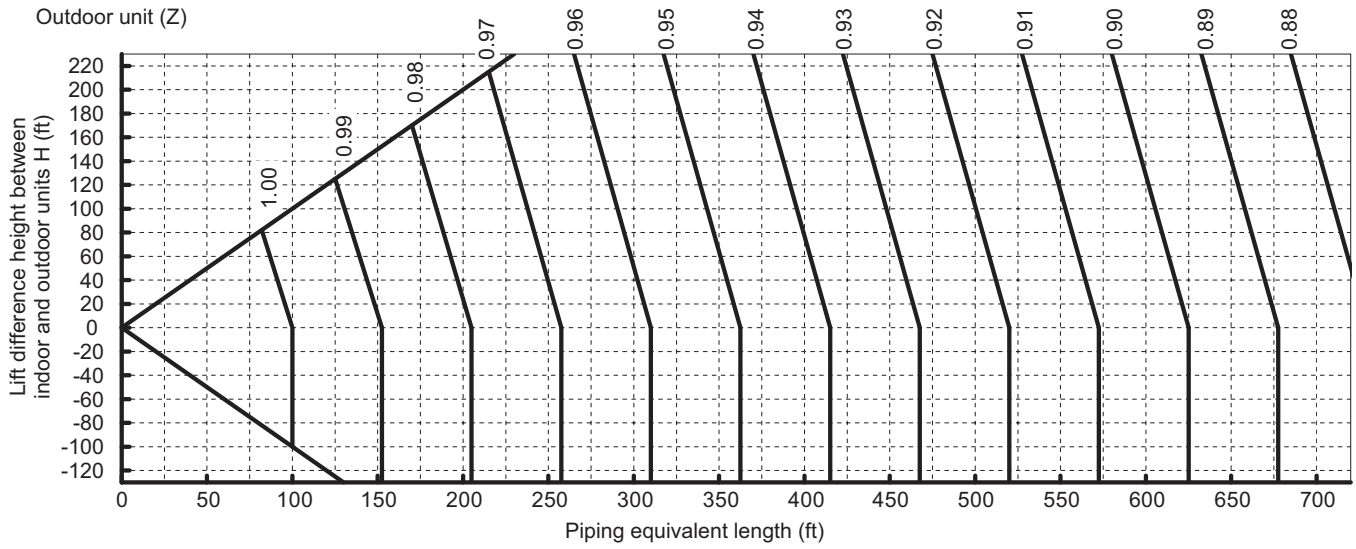
[Chart 3] Connecting pipe length and lift difference between indoor and outdoor units vs. capacity correction value



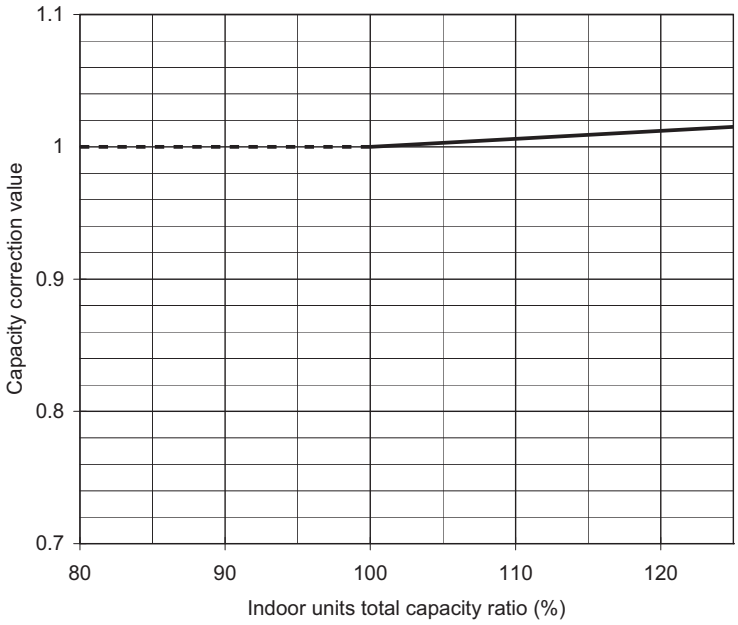
Outdoor unit capacity type	Graph
072	X
096	
114	Y
144	Z
168	
192	
228	


Outdoor unit (X)
Lift difference height between indoor and outdoor units H (ft)
220 200 180 160 140 120 100 80 60 40 20 0 -20 -40 -60 -80 -100 -120
1.00 0.99 0.98 0.97 0.96 0.95 0.94 0.93 0.92 0.91 0.90 0.89 0.88 0.87
0 50 100 150 200 250 300 350 400 450 500 550 600 650
Piping equivalent length (ft)


Outdoor unit (Y)
Lift difference height between indoor and outdoor units H (ft)
220 200 180 160 140 120 100 80 60 40 20 0 -20 -40 -60 -80 -100 -120
1.00 0.99 0.98 0.97 0.96 0.95 0.94 0.93 0.92 0.91 0.90 0.89 0.88 0.87
0 50 100 150 200 250 300 350 400 450 500 550 600 650 700
Piping equivalent length (ft)


Outdoor unit (Z)
Lift difference height between indoor and outdoor units H (ft)
220 200 180 160 140 120 100 80 60 40 20 0 -20 -40 -60 -80 -100 -120
1.00 0.99 0.98 0.97 0.96 0.95 0.94 0.93 0.92 0.91 0.90 0.89 0.88
0 50 100 150 200 250 300 350 400 450 500 550 600 650 700
Piping equivalent length (ft)

[Chart 4]* Correction of outdoor unit diversity

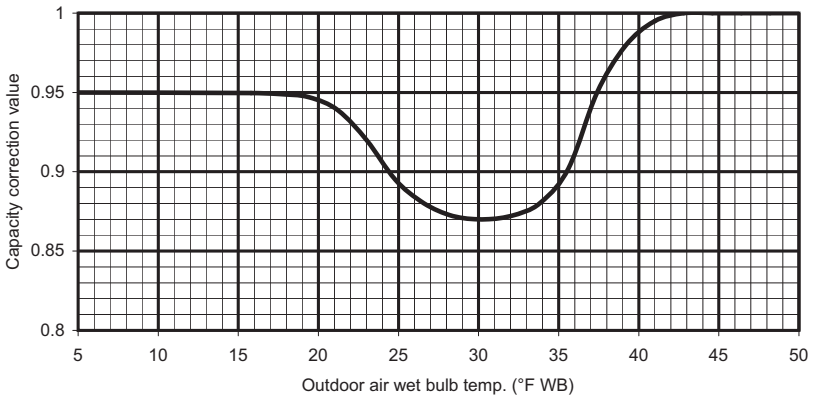


* Coefficient to use for the correction of the outdoor unit capacity when the total capacity of the indoor units are not equal to the outdoor unit capacity.

2-3-2-3. Capacity correction in case of frost on the outdoor heat exchanger when in heating

Correct the heating capacity when frost can be found on the outdoor heat exchanger.
Heating capacity =Capacity after correction of outdoor unit x Correction value of capacity resulted from frost (Capacity after correction of outdoor unit: Heating capacity calculated in the above item 2.)

[Chart 5] Capacity correction in case of frost on the outdoor heat exchanger

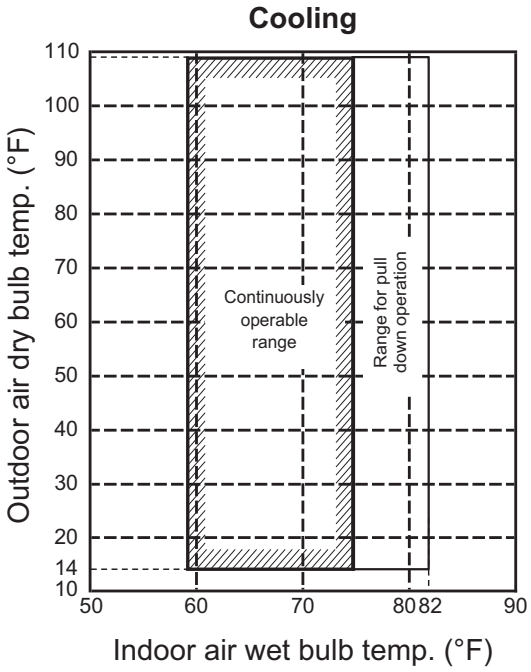


2-3-2-4. Rated conditions

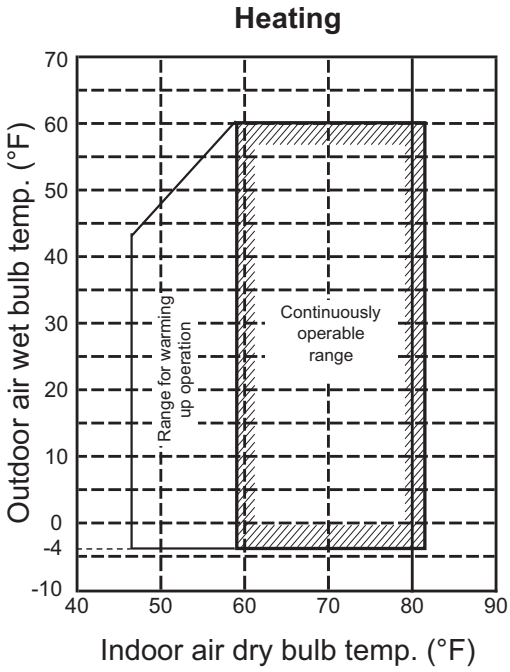
Cooling: Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating: Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb

2-4. Operational temperature range

2-4-1. Heat recovery

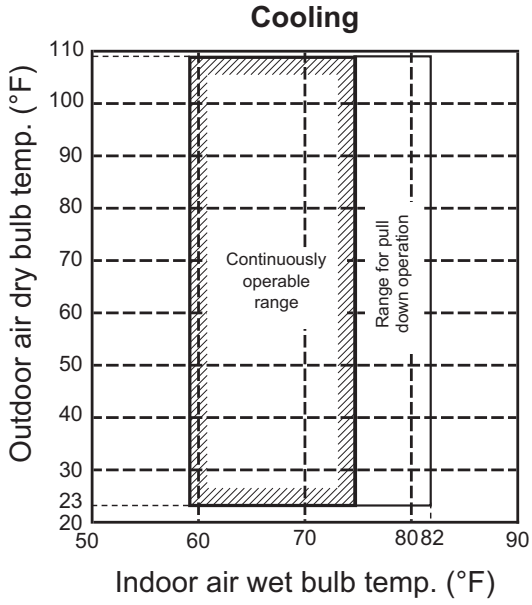


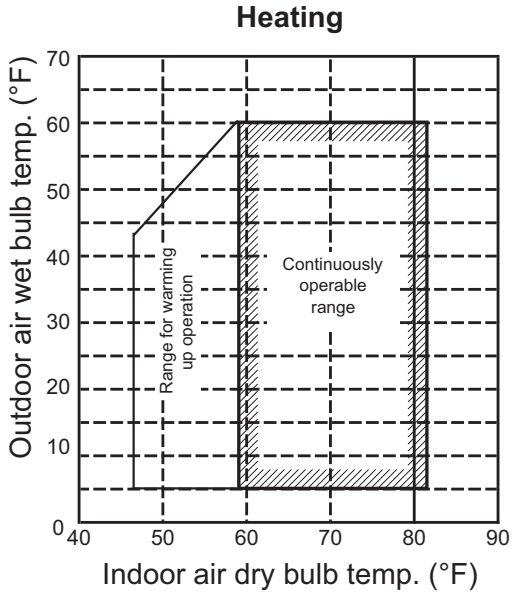
The cooling performance may decline considerably when total operating capacity of cooling indoor units is less than 38 kBtu/h while ambient temperature is below 32 °F.



Avoid the following place
Places where ambient temperature falls below 5 °F for more than 72 hours running. The outdoor heat exchanger may be damaged by the frost.

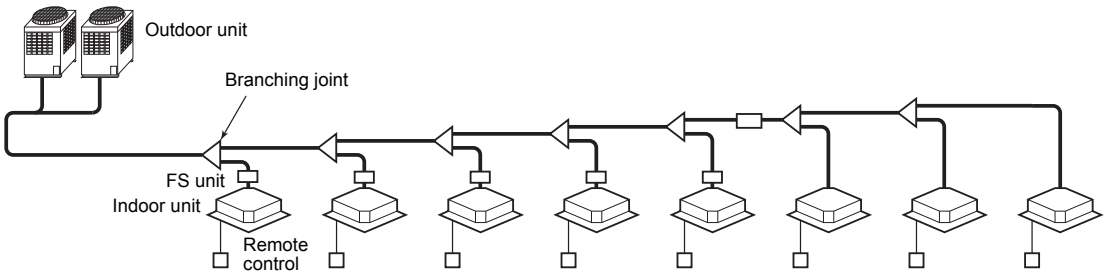
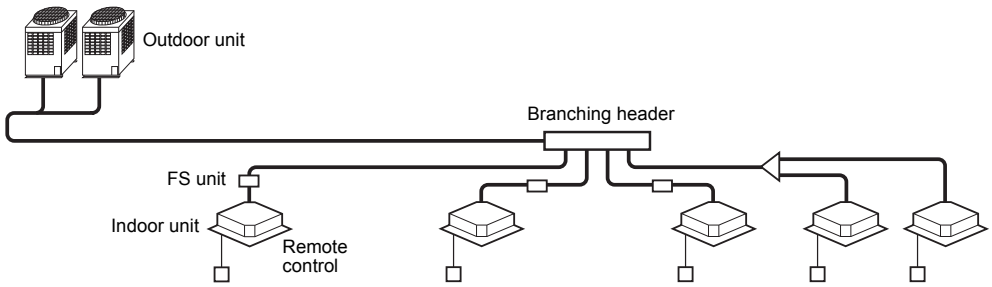
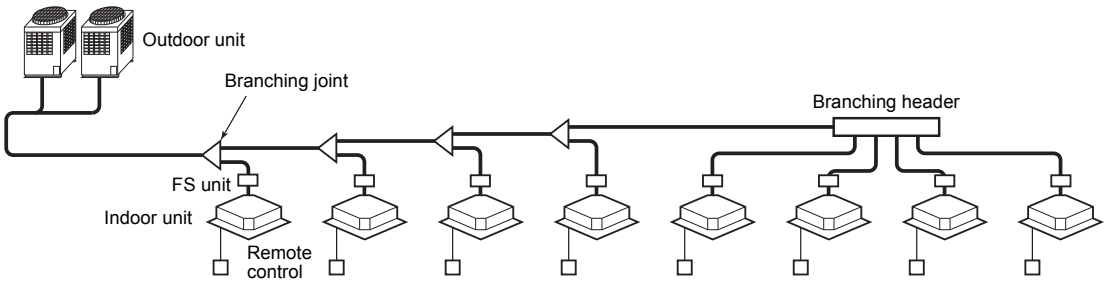
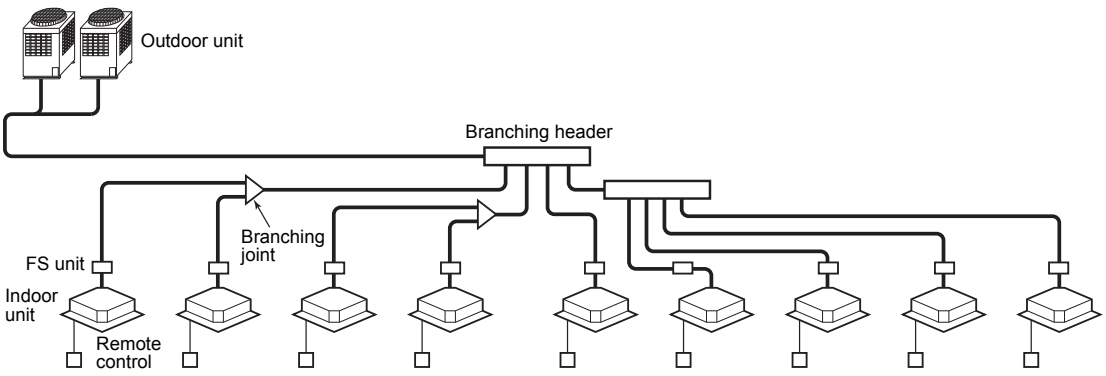
2-4-2. Heat pump





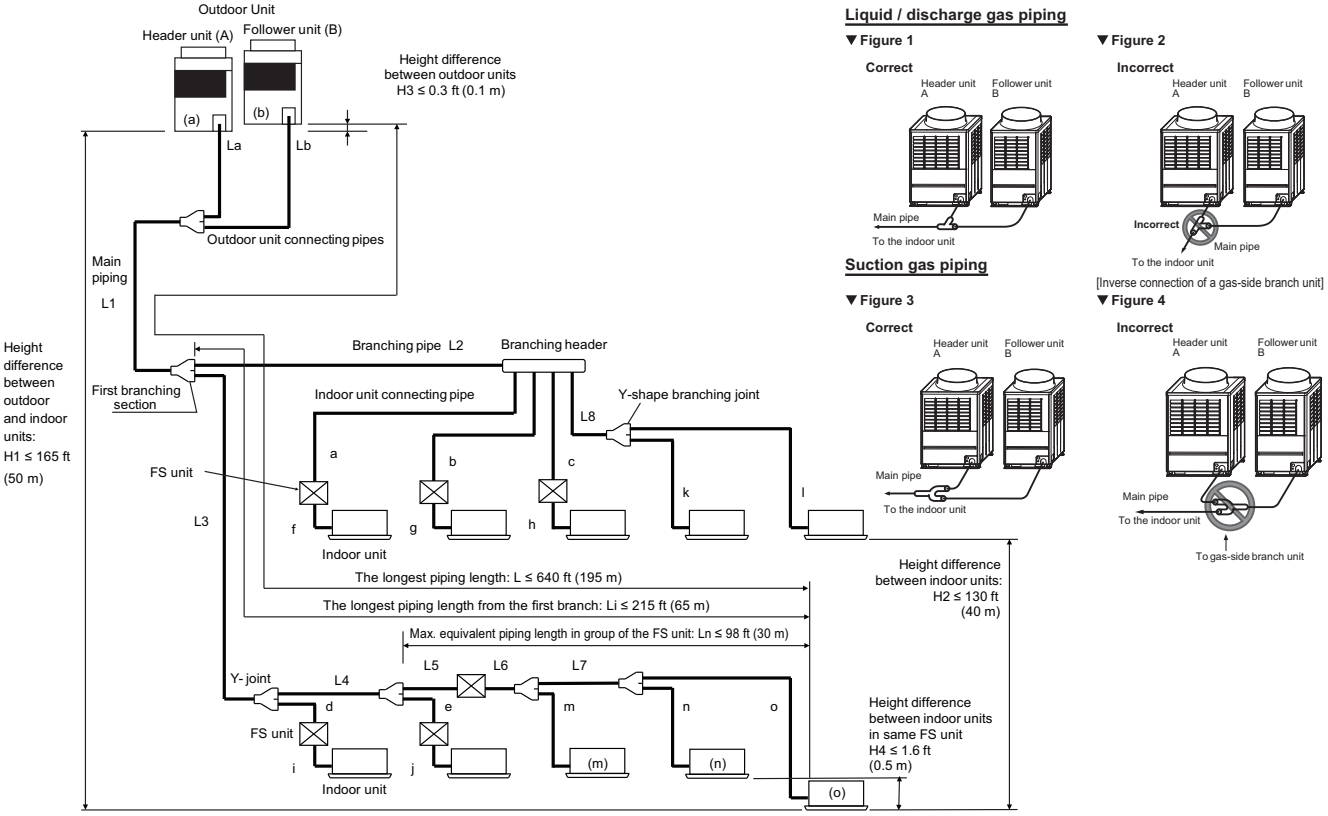
3-1. Free branching system

[1] Line branching system
[2] Header branching system
[3] Header branching system after line branching
[4] Line branching system after header branching
[5] Header branching system after header branching
The above five branching systems enable to dramatically increase the flexibility of refrigerant piping design.

Line branching system	
Header branching system	
Header branching system after line branching	
Line branching system after header branching Header branching system after header branching	

3-2. Allowable length/height difference of refrigerant piping

3-2-1. Heat recovery



Liquid / discharge gas piping

▼Figure 1

▼Figure 2

[Inverse connection of a gas-side branch unit]

Suction gas piping

▼Figure 3

▼Figure 4

System restrictions

Max. No. of combined outdoor units	2 units	
Max. capacity of combined outdoor units	20 ton	
Max. No. of connected indoor units	40 units	
Max. capacity of combined indoor units	H2 ≤ 49 ft (15 m)	125 % (*1)
	H2 > 49 ft (15 m)	105 %

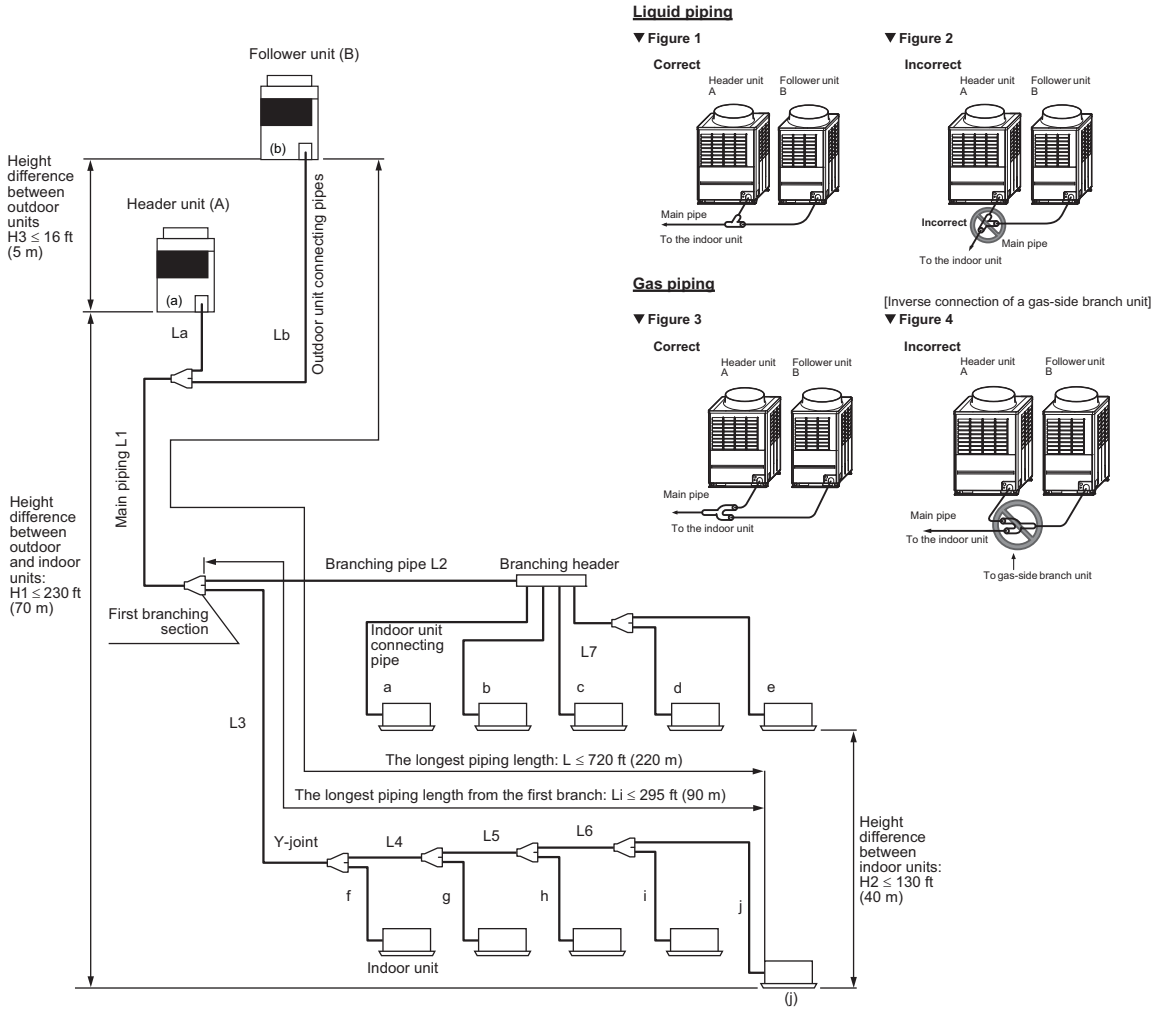
Note 1) The header unit is connected to main piping to indoor units.
Note 2) The header unit is the one with the highest capacity code. A (header unit) ≥ B
Note 3) To connect suction gas pipes to indoor units, use Y-shaped branching joints to keep pipes level.

Allowable length and height difference of refrigerant piping

Item				Allowable value (ft (m))	Pipes
Pipe length	Total extension of pipe (liquid pipe)		Actual length	985 (300)	La + Lb + L1 + L2 + L3 + L4 + L5 + L6 + L7 + L8 + a + b + c + d + e + f + g + h + i + j + k + l + m + n + o
	Farthest piping length L (*2)(*4)		Equivalent length	640 (195)	Lb + L1 + L3 + L4 + L5 + L6 + L7 + o
			Actual length	575 (175)	
	Main piping length	H2 > 9.8 ft (3 m)	Equivalent length	330 (100)	L1
			Actual length	280 (85)	
		H2 ≤ 9.8 ft (3 m)	Equivalent length	395 (120)	
			Actual length	330 (100)	
	Farthest equivalent piping length from the first branch Li (*2)		H1 > 9.8 ft (3 m)	165 (50)	L3 + L4 + L5 + L6 + L7 + o
			H1 ≤ 9.8 ft (3 m)	215 (65)	
	Maximum equivalent piping length of pipes connected to outdoor units			33 (10)	La, Lb
	Maximum actual length of pipes connected to indoor units			98 (30)	a + f, b + g, c + h, d + i, e + j, k, l
	Max. real length between FS unit and indoor unit			49 (15)	f, g, h, i, j
	Maximum equivalent length between branching sections			165 (50)	L2, L3, L4, L8
Height difference	Height between outdoor and indoor units H1		Upper outdoor units	165 (50)	–
			Lower outdoor units	98 (30)	–
	Height between indoor units H2		Upper outdoor units	130 (40)	–
			Lower outdoor units	9.8 (3)	–
	Height between outdoor units H3			0.3 (0.1)	–
<In case of two or more indoor units are connected with FS unit>					
Max. equivalent piping length in group of the FS unit				98 (30)	L5 + L6 + m, L5 + L6 + L7 + n, L5 + L6 + L7 + o
Max. real length between FS unit and the wired indoor unit (*3)				49 (15)	L6 + m, L6 + L7 + n, L6 + L7 + o
Height difference between indoor units in same FS unit H4				1.6 (0.5)	–

*1: If “Medium Static Ducted Type (MMD-AP***BH)” is included in the system: Total indoor capacity code is between 80 % and 120 % of the capacity of the outdoor unit.
*2: Farthest outdoor unit from the first branch: (B), farthest indoor unit: (o).
*3: Run wires to one indoor unit and flow selector unit linked with one of those remote controls if flow selector unit is connected to multiple indoor units.
*4: Allowable values for length equivalent to furthest pipe are shown below and they vary according to performance rank of outdoor unit.
072 to 120 type: Equivalent length 605 ft (185 m), Actual length: 540 ft (165 m)
144 to 240 type: Equivalent length 640 ft (195 m), Actual length: 575 ft (175 m)

3-2-2. Heat pump



System restrictions

Max. No. of combined outdoor units	2 units	
Max. capacity of combined outdoor units	19 ton	
Max. No. of connected indoor units	38 units	
Max. capacity of combined indoor units	H2 ≤ 49 ft (15 m)	125 % (*1)
	H2 > 49 ft (15 m)	105 %

Note 1) The header unit is connected to main piping to indoor units.
Note 2) The header unit is the one with the highest capacity code. A (header unit) ≥ B
Note 3) To connect suction gas pipes to indoor units, use Y-shaped branching joints to keep pipes level.

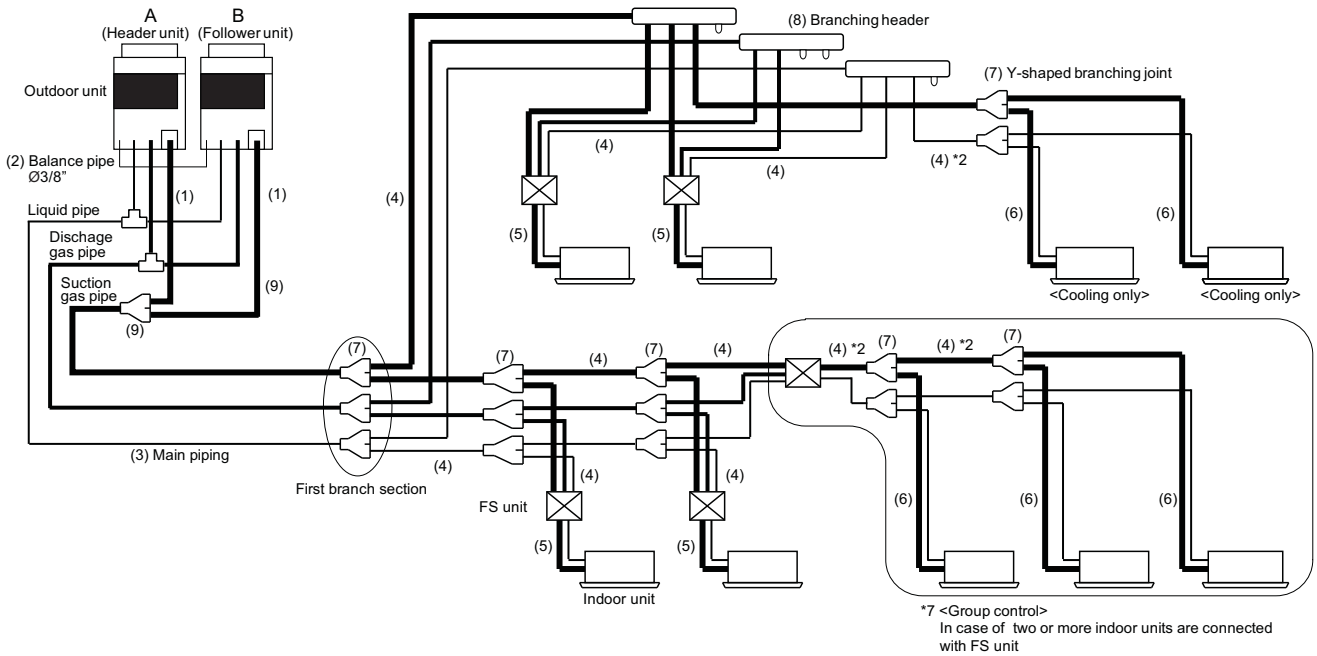
Allowable length and height difference of refrigerant piping

Item				Allowable value (ft (m))	Pipes
Pipe length	Total extension of pipe (liquid pipe)		Actual length	985 (300)	La + Lb + L1 + L2 + L3 + L4 + L5 + L6 + L7 + a + b + c + d + e + f + g + h + i + j
	Farthest piping length L (*1)		Equivalent length	720 (220)	Lb + L1 + L3 + L4 + L5 + L6 + j
			Actual length	590 (180)	
	Main piping length		Equivalent length	395 (120)	L1
			Actual length	330 (100)	
	Farthest equivalent piping length from the first branch Li (*2)		H1 > 9.8 ft (3 m)	215 (65)	L3 + L4 + L5 + L6 + j
			H1 ≤ 9.8 ft (3 m)	295 (90)	
	Maximum equivalent piping length of pipes connected to outdoor units			33 (10)	La, Lb
	Maximum actual length of pipes connected to indoor units			98 (30)	a, b, c, d, e, f, g, h, i, j
	Maximum equivalent length between branching sections			165 (50)	L2, L3, L4, L5, L6, L7
Height difference	Height between outdoor and indoor units H1	Upper outdoor units	H2 > 9.8 ft (3 m)	165 (50)	–
			H2 ≤ 9.8 ft (3 m)	230 (70)	
		Lower outdoor units	H2 > 9.8 ft (3 m)	98 (30)	–
			H2 ≤ 9.8 ft (3 m)	130 (40)	
	Height between indoor units H2			130 (40)	–
	Height between outdoor units H3			16 (5)	–

*1: If “Medium Static Ducted Type (MMD-AP***BH)” is included in the system: Total indoor capacity code is between 80 % and 120 % of the capacity of the outdoor unit.
*2: Farthest outdoor unit from the first branch: (B), farthest indoor unit: (j).

3-3. Selection of refrigerant piping

3-3-1. Heat recovery



(1) Outdoor unit connecting pipe

Outdoor unit capacity type	Suction gas side	Discharge gas side	Liquid side
072 type	Ø7/8"	Ø3/4"	Ø1/2"
096 type	Ø7/8"	Ø3/4"	Ø1/2"
120 type	Ø1-1/8"	Ø3/4"	Ø1/2"

(2) Balance pipe

Outdoor unit capacity type	Balance pipe
144 to 240 type	Ø3/8"

(3) Main piping

Outdoor unit capacity code type	Suction gas side	Discharge gas side	Liquid side
072, 096 type	Ø7/8"	Ø3/4"	Ø1/2"
120 type	Ø1-1/8"	Ø3/4"	Ø1/2"
144 type	Ø1-1/8"	Ø7/8"	Ø5/8"
168, 192 type	Ø1-1/8"	Ø7/8"	Ø3/4"
216, 240 type	Ø1-3/8"	Ø1-1/8"	Ø3/4"

(4) Branching pipe (*1)(*2)

Total capacity codes of indoor units at downstream side (kBtu/h) (*6)	Suction gas side	Discharge gas side	Liquid side
Below 61	Ø5/8"	Ø1/2"	Ø3/8"
61 to below 116	Ø7/8"	Ø3/4"	Ø1/2"
116 to below 155	Ø1-1/8"	Ø7/8"	Ø5/8"
155 to below 193	Ø1-1/8"	Ø7/8"	Ø3/4"
193 or more	Ø1-3/8"	Ø1-1/8"	Ø3/4"

(5) FS unit and indoor unit connection pipe

Indoor unit capacity type	Gas side	Liquid side
007 to 012 type	Ø3/8"	Ø1/4"
015 to 018 type	Ø1/2"	Ø1/4"
021 to 048 type	Ø5/8"	Ø3/8"

(6) Branching and indoor unit connection pipe

Indoor unit capacity type			Gas side	Liquid side
007 to 012 type	Pipe length (Actual length)	49 ft or less	Ø3/8"	Ø1/4"
		Over 49 ft	Ø1/2"	Ø3/8"
015 to 018 type	Pipe length (Actual length)	49 ft or less	Ø1/2"	Ø1/4"
		Over 49 ft	Ø5/8"	Ø3/8"
021 to 048 type			Ø5/8"	Ø3/8"

(7) Y-shaped branching joint (*3)(*4)

Total capacity codes of indoor units (kBtu/h)	Model name	
	Heat recovery	Heat pump
Below 61	RBM-BY55FUL	RBM-BY55UL
61 to below 136	RBM-BY105FUL	RBM-BY105UL
136 or more	RBM-BY205FUL	RBM-BY205UL

(8) Branching header (*3)(*4)(*5)

Total capacity codes of indoor units (kBtu/h)		Model name	
		Heat recovery	Heat pump
For 4 branching	Below 136	RBM-HY1043FUL	RBM-HY1043UL
	136 or more	RBM-HY2043FUL	RBM-HY2043UL
For 8 branching	Below 136	RBM-HY1083FUL	RBM-HY1083UL
	136 or more	RBM-HY2083FUL	RBM-HY2083UL

(9) Outdoor unit connection piping kit

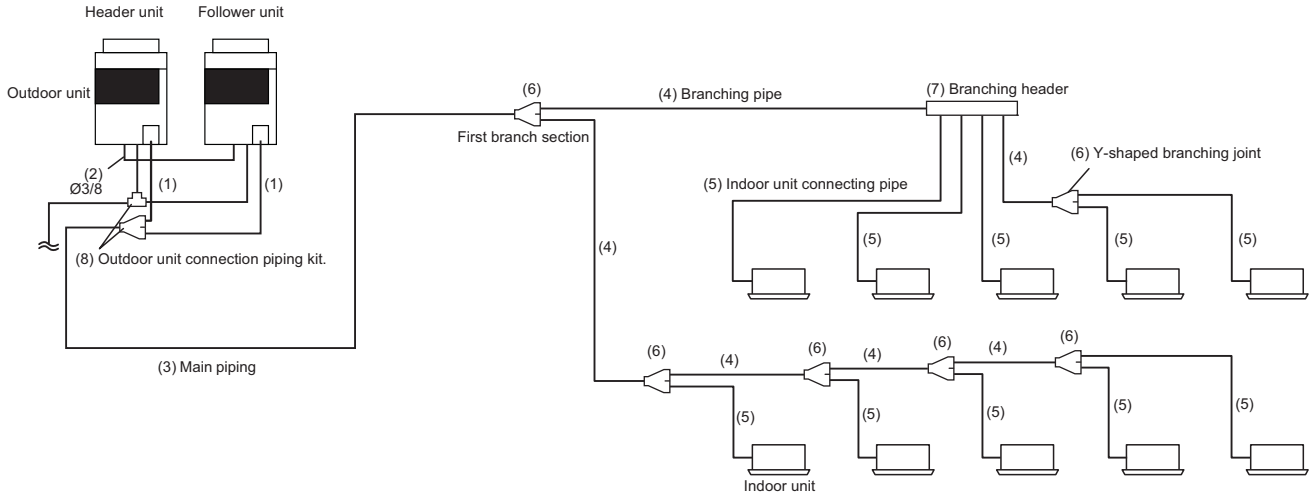
Outdoor unit	Model name
2	RBM-BT14FUL

■ FS unit

Total capacity codes of indoor units (kBtu/h)	Max. number of connectable indoor units	Model name
Below 38	5	RBM-Y0383FUL
38 to below 61	8	RBM-Y0613FUL
61 to 96 or less	8	RBM-Y0963FUL

*1: If the piping size becomes over main piping size, select the size same as main piping.
*2: Two piping between branching sections in cooling only and downstream of FS unit uses liquid pipe and suction gas pipe.
*3: When using a Y-shaped branching joint for the 1st branch, select according to capacity code of the outdoor unit.
*4: In case total capacity code of indoor units exceeds the capacity code of the outdoor unit, the pipe size should be selected based on the capacity of the outdoor unit.
*5: Up to a total of 54 (kBtu/h) maximum capacity code is connectable to one line after branching header.
When using a branching header for the 1st branch and the total capacity codes of all outdoor units are 120 type or more, use a RBM-HY2043FUL or RBM-HY2083FUL regardless of the total capacity codes of indoor units at downstream side.
*6: Pipe size differs based on the total capacity code value of indoor units at the downstream side.
If the total value exceeds the capacity code of the outdoor unit, apply the capacity code of the outdoor unit.
*7: When two or more indoor units are connected with one FS unit, the operation is group control with one remote control.

3-3-2. Heat pump



(1) Outdoor unit connecting pipe

Outdoor unit capacity type	Gas side	Liquid side
072 type	Ø7/8"	Ø1/2"
096 type	Ø7/8"	Ø1/2"
114 type	Ø1-1/8"	Ø1/2"

(2) Balance pipe

Outdoor unit capacity type	Balance pipe
144 to 228 type	Ø3/8"

(3) Main piping

Outdoor unit capacity type	Gas side	Liquid side
072 / 096 type	Ø7/8"	Ø1/2"
114 type	Ø1-1/8"	Ø1/2"
144 / 168 / 192 type	Ø1-1/8"	Ø5/8"
228 type	Ø1-3/8"	Ø3/4"

(4) Branching pipe

Total capacity codes of indoor units at downstream side (kBtu/h)(*3)	Gas side	Liquid side
Below 23	Ø1/2"	Ø3/8"
23 to below 61	Ø5/8"	Ø3/8"
61 to below 116	Ø7/8"	Ø1/2"
116 to below 193	Ø1-1/8"	Ø5/8"
193 or more	Ø1-3/8"	Ø3/4"

(5) Indoor unit connection pipe

Indoor unit capacity type			Gas side	Liquid side
007 to 012 type	Pipe length (actual length)	49 ft or less	Ø3/8"	Ø1/4"
		Over 49 ft	Ø1/2"	Ø1/4"
015 to 018 type			Ø1/2"	Ø1/4"
021 to 054 type			Ø5/8"	Ø3/8"
072 to 096 type			Ø7/8"	Ø1/2"

(6) Y-shaped branching joint (*1)

Total capacity codes of indoor units (kBtu/h)	Model name
Below 61	RBM-BY55UL
61 to below 136	RBM-BY105UL
136 or more	RBM-BY205UL

(7) Branching header (*2)

Total capacity codes of indoor units (kBtu/h)	Model name	
For 4 branches	Below 136	RBM-HY1043UL
	136 to below 241	RBM-HY2043UL
For 8 branches	Below 136	RBM-HY1083UL
	136 to below 241	RBM-HY2083UL

(8) Outdoor unit connection piping kit

Outdoor unit	Model name
2	RBM-BT14UL

*1: When using a Y-shaped branching joint for the 1st branch, select according to capacity code of the outdoor unit.
*2: Up to a total of 54 (kBtu/h) maximum capacity code is connectable to one line after branching of header.
When using a branching header for the 1st branch and the total capacity codes of all outdoor units are 114 or more, use a RBM-HY2043UL or RBM-HY2083UL regardless of the total capacity codes of indoor units at downstream side.
*3: Pipe size differs based on the total capacity code value of indoor units at the downstream side.
If the total value exceeds the capacity code of the outdoor unit, apply the capacity code of the outdoor unit.

3-4. Charging requirement with additional refrigerant

After the system has been vacuumed, replace the vacuum pump with a refrigerant cylinder and system with additional refrigerant.

Calculating the amount of additional refrigerant required

Refrigerant in the system when shipped from the factory

Heat recovery	Model MMY-MAP	0724FT9UL, 0724FT6UL, 0964FT9UL, 0964FT6UL, 1204FT9UL, 1204FT6UL
	Refrigerant amount charged in factory	25.4 lbs
Heat pump	Model MMY-MAP	0724HT9UL, 0724HT6UL, 0964HT9UL, 0964HT9UL, 1144HT9UL, 1144HT6UL
	Refrigerant amount charged in factory	25.4 lbs

When the system is charged with refrigerant at the factory, the amount of refrigerant needed for the pipes at the site is not included. Therefore, calculate the additional amount needed and add the required amount to the system.

(Calculation of Heat recovery)

Additional refrigerant charge amount is calculated based on the size of liquid pipe at site and its real length.

Additional refrigerant charge amount (lbs) = [Actual length of liquid pipe] × [Additional refrigerant charge amount per liquid pipe 1 ft [Table 1]] x 1.3 + Adjustment amount of refrigerant [Table 2]

(Calculation of Heat pump)

Additional refrigerant charge amount is calculated based on the size of liquid pipe at site and its real length.

Additional refrigerant charge amount (lbs) = Actual length of liquid pipe × Additional refrigerant charge amount per liquid pipe 1 ft [Table 1] + Adjustment amount of refrigerant [Table 3]

Table 1

Liquid pipe outer diameter (in)	Ø1/4"	Ø3/8"	Ø1/2"	Ø5/8"	Ø3/4"
Additional refrigerant amount/1 ft (lbs)	0.017	0.037	0.071	0.108	0.168

Table 2

Outdoor unit capacity type	Adjustment amount of refrigerant (lbs)	Combined outdoor units	
072 type	5.5	072 type	–
096 type	20.9	096 type	–
120 type	27.5	120 type	–
144 type	5.5	072 type	072 type
168 type	23.1	096 type	072 type
192 type	30.8	096 type	096 type
216 type	34.1	120 type	096 type
240 type	37.4	120 type	120 type

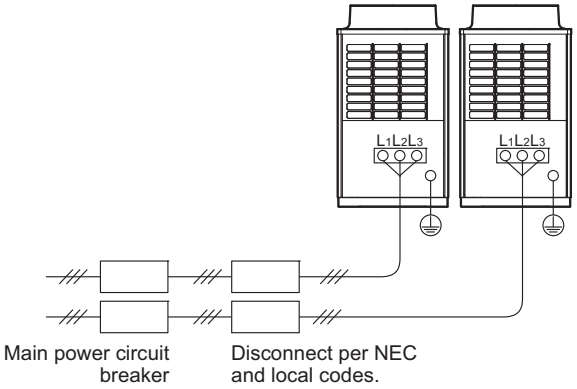
Table 3

Outdoor unit capacity type	Adjustment amount of refrigerant (lbs)	Combined outdoor units	
072 type	3.31	072 type	–
096 type	13.23	096 type	–
114 type	15.43	114 type	–
144 type	0.00	072 type	072 type
168 type	16.53	096 type	072 type
192 type	27.56	096 type	096 type
228 type	27.56	114 type	114 type

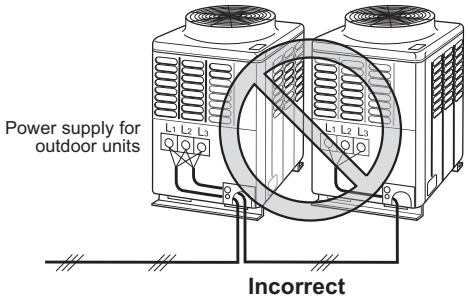
4-1. General

- The equipment shall be installed in compliance with NEC and local codes.
- Do not connect high voltage power wires to the control terminal blocks (U1, U2, U3, U4, U5, U6).
- All field wiring insulation rating must comply with NEC and local codes.
- All wiring must be strained relieved as specified by NEC and local codes.
- Do not energize the indoor units until leak check and vacuuming are completed.
- Use copper supply wire.
- Use UL wires rated 600 V for the system interconnection wires.
- Use UL wires rated 300 V for remote control wires.

4-2. Outdoor unit power supply



Every outdoor unit must have a dedicated power supply.



4-2-1. Heat recovery

Outdoor unit data

208/230 V model

Unit type	Capacity type	Model name MMY-	Power supply		Voltage Range		Compressor		Fan Motor	MCA	MOCP
			Phase and frequency	Nominal Voltage	Min.	Max.	Unit No.1	Unit No.2			
					(V)	(V)	(kW)	(kW)	(kW)	(A)	(A)
Single unit	72	MAP0724FT9UL	3 ~ 60 Hz	208/230 V	187	253	2.3 x 2	–	1.0	34	40
	96	MAP0964FT9UL	3 ~ 60 Hz	208/230 V	187	253	2.1 x 3	–	1.0	50	60
	120	MAP1204FT9UL	3 ~ 60 Hz	208/230 V	187	253	2.7 x 3	–	1.0	52	60
Combined model	144	AP1444FT9UL	3 ~ 60 Hz	208/230 V	187	253	2.3 x 2	2.3 x 2	1.0 x 2	34 + 34	40 + 40
	168	AP1684FT9UL	3 ~ 60 Hz	208/230 V	187	253	2.1 x 3	2.3 x 2	1.0 x 2	50 + 34	60 + 40
	192	AP1924FT9UL	3 ~ 60 Hz	208/230 V	187	253	2.1 x 3	2.1 x 3	1.0 x 2	50 + 50	60 + 60
	216	AP2164FT9UL	3 ~ 60 Hz	208/230 V	187	253	2.7 x 3	2.1 x 3	1.0 x 2	52 + 50	60 + 60
	240	AP2404FT9UL	3 ~ 60 Hz	208/230 V	187	253	2.7 x 3	2.7 x 3	1.0 x 2	52 + 52	60 + 60

460 V model

Unit type	Capacity type	Model name MMY-	Power supply		Voltage Range		Compressor		Fan Motor	MCA	MOCP
			Phase and frequency	Nominal Voltage	Min.	Max.	Unit No.1	Unit No.2			
					(V)	(V)	(kW)	(kW)	(kW)	(A)	(A)
Single unit	72	MAP0724FT6UL	3 ~ 60 Hz	460 V	414	506	2.3 x 2	–	1.0	19	25
	96	MAP0964FT6UL	3 ~ 60 Hz	460 V	414	506	2.1 x 3	–	1.0	28	35
	120	MAP1204FT6UL	3 ~ 60 Hz	460 V	414	506	2.7 x 3	–	1.0	30	35
Combined model	144	AP1444FT6UL	3 ~ 60 Hz	460 V	414	506	2.3 x 2	2.3 x 2	1.0 x 2	19 + 19	25 + 25
	168	AP1684FT6UL	3 ~ 60 Hz	460 V	414	506	2.1 x 3	2.3 x 2	1.0 x 2	28 + 19	35 + 25
	192	AP1924FT6UL	3 ~ 60 Hz	460 V	414	506	2.1 x 3	2.1 x 3	1.0 x 2	28 + 28	35 + 35
	216	AP2164FT6UL	3 ~ 60 Hz	460 V	414	506	2.7 x 3	2.1 x 3	1.0 x 2	30 + 28	35 + 35
	240	AP2404FT6UL	3 ~ 60 Hz	460 V	414	506	2.7 x 3	2.7 x 3	1.0 x 2	30 + 30	35 + 35

Notes MCA : Minimum Circuit Amps (minimum circuit Amps requires for power supply design.)
MOCP : Maximum Overcurrent Protection (Amps)

4-2-2. Heat pump

Outdoor unit data

208/230 V model

Unit type	Capacity type	Model name MMY-	Power supply		Voltage Range		Compressor		Fan Motor	MCA	MOCP
			Phase and frequency	Nominal Voltage	Min.	Max.	Unit No.1	Unit No.2			
					(V)	(V)	(kW)	(kW)	(kW)	(A)	(A)
Single unit	072	MAP0724HT9UL	3 ~ 60 Hz	208/230 V	187	253	2.3 x 2	–	1.0	36	40
	096	MAP0964HT9UL	3 ~ 60 Hz	208/230 V	187	253	2.1 x 3	–	1.0	50	60
	114	MAP1144HT9UL	3 ~ 60 Hz	208/230 V	187	253	2.5 x 3	–	1.0	52	60
Combined model	144	AP1444HT9UL	3 ~ 60 Hz	208/230 V	187	253	2.3 x 2	2.3 x 2	1.0 x 2	36 + 36	40 + 40
	168	AP1684HT9UL	3 ~ 60 Hz	208/230 V	187	253	2.1 x 3	2.3 x 2	1.0 x 2	50 + 36	60 + 40
	192	AP1924HT9UL	3 ~ 60 Hz	208/230 V	187	253	2.1 x 3	2.1 x 3	1.0 x 2	50 + 50	60 + 60
	228	AP2284HT9UL	3 ~ 60 Hz	208/230 V	187	253	2.5 x 3	2.5 x 3	1.0 x 2	52 + 52	60 + 60

460 V model

Unit type	Capacity type	Model name MMY-	Power supply		Voltage Range		Compressor		Fan Motor	MCA	MOCP
			Phase and frequency	Nominal Voltage	Min.	Max.	Unit No.1	Unit No.2			
					(V)	(V)	(kW)	(kW)	(kW)	(A)	(A)
Single unit	072	MAP0724HT6UL	3 ~ 60 Hz	460 V	414	506	2.3 x 2	–	1.0	18	20
	096	MAP0964HT6UL	3 ~ 60 Hz	460 V	414	506	2.1 x 3	–	1.0	23	25
	114	MAP1144HT6UL	3 ~ 60 Hz	460 V	414	506	2.5 x 3	–	1.0	24	25
Combined model	144	AP1444HT6UL	3 ~ 60 Hz	460 V	414	506	2.3 x 2	2.3 x 2	1.0 x 2	18 + 18	20 + 20
	168	AP1684HT6UL	3 ~ 60 Hz	460 V	414	506	2.1 x 3	2.3 x 2	1.0 x 2	23 + 18	25 + 20
	192	AP1924HT6UL	3 ~ 60 Hz	460 V	414	506	2.1 x 3	2.1 x 3	1.0 x 2	23 + 23	25 + 25
	228	AP2284HT6UL	3 ~ 60 Hz	460 V	414	506	2.5 x 3	2.5 x 3	1.0 x 2	24 + 24	25 + 25

Notes MCA : Minimum Circuit Amps (minimum circuit Amps requires for power supply design.)
MOCP : Maximum Overcurrent Protection (Amps)

4-3. Indoor unit power supply

Electrical characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range (V)		FLA	MCA	MOCP
			Min	Max	A	A	A
4-Way Cassette type	MMU-AP0152H2UL	208/230-1-60	187	253	0.6	0.8	15
	MMU-AP0182H2UL	208/230-1-60	187	253	0.6	0.8	15
	MMU-AP0212H2UL	208/230-1-60	187	253	0.8	1.0	15
	MMU-AP0242H2UL	208/230-1-60	187	253	0.8	1.0	15
	MMU-AP0302H2UL	208/230-1-60	187	253	0.8	1.0	15
	MMU-AP0362H2UL	208/230-1-60	187	253	1.0	1.3	15
	MMU-AP0422H2UL	208/230-1-60	187	253	1.0	1.3	15
Compact 4-Way Cassette type	MMU-AP0071MH2UL	208/230-1-60	187	253	0.4	0.5	15
	MMU-AP0091MH2UL	208/230-1-60	187	253	0.4	0.5	15
	MMU-AP0121MH2UL	208/230-1-60	187	253	0.4	0.5	15
	MMU-AP0151MH2UL	208/230-1-60	187	253	0.5	0.7	15
	MMU-AP0181MH2UL	208/230-1-60	187	253	0.5	0.7	15
Ceiling type	MMC-AP0181H2UL	208/230-1-60	187	253	0.4	0.5	15
	MMC-AP0241H2UL	208/230-1-60	187	253	0.5	0.7	15
	MMC-AP0361H2UL	208/230-1-60	187	253	0.8	1.0	15
	MMC-AP0421H2UL	208/230-1-60	187	253	0.9	1.2	15
High Wall type	MMK-AP0073H2UL	208/230-1-60	187	253	0.2	0.3	15
	MMK-AP0093H2UL	208/230-1-60	187	253	0.2	0.3	15
	MMK-AP0123H2UL	208/230-1-60	187	253	0.2	0.3	15
	MMK-AP0153H2UL	208/230-1-60	187	253	0.4	0.5	15
	MMK-AP0183H2UL	208/230-1-60	187	253	0.4	0.5	15
	MMK-AP0243H2UL	208/230-1-60	187	253	0.4	0.5	15
Medium Static Ducted type	MMD-AP0074BH2UL	208/230-1-60	187	253	0.8	1.0	15
	MMD-AP0094BH2UL	208/230-1-60	187	253	0.8	1.0	15
	MMD-AP0124BH2UL	208/230-1-60	187	253	0.8	1.0	15
	MMD-AP0154BH2UL	208/230-1-60	187	253	0.9	1.2	15
	MMD-AP0184BH2UL	208/230-1-60	187	253	0.9	1.2	15
	MMD-AP0214BH2UL	208/230-1-60	187	253	1.4	1.8	15
	MMD-AP0244BH2UL	208/230-1-60	187	253	1.4	1.8	15
	MMD-AP0304BH2UL	208/230-1-60	187	253	1.4	1.8	15
	MMD-AP0364BH2UL	208/230-1-60	187	253	1.8	2.3	15
	MMD-AP0424BH2UL	208/230-1-60	187	253	2.2	2.8	15
	MMD-AP0484BH2UL	208/230-1-60	187	253	2.2	2.8	15
High Static Ducted type	MMD-AP0304H2UL	208/230-1-60	187	253	2.34	2.93	15
	MMD-AP0364H2UL	208/230-1-60	187	253	2.34	2.93	15
	MMD-AP0484H2UL	208/230-1-60	187	253	2.92	3.65	15
Slim Ducted type	MMD-AP0074SPH2UL	208/230-1-60	187	253	0.58	0.73	15
	MMD-AP0094SPH2UL	208/230-1-60	187	253	0.58	0.73	15
	MMD-AP0124SPH2UL	208/230-1-60	187	253	0.60	0.75	15
	MMD-AP0154SPH2UL	208/230-1-60	187	253	0.70	0.88	15
	MMD-AP0184SPH2UL	208/230-1-60	187	253	0.80	1.00	15

MCA : Minimum Circuit Amps
MOCP : Maximum Overcurrent Protection (Amps)
FLA : Full Load Amps

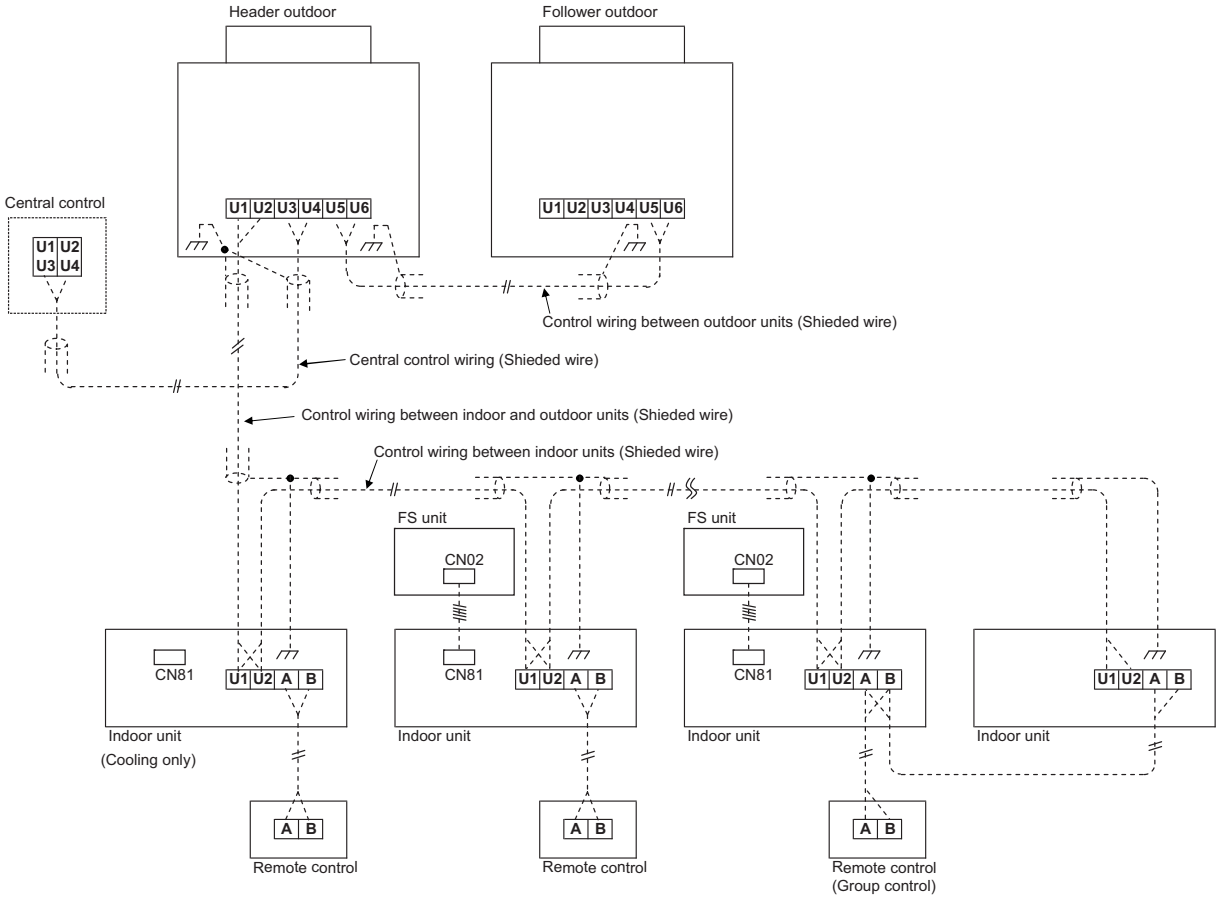
Power supply wire

Recommended wire diameter and wire length for power supply wire.

Power supply wiring	Wire side : 2 x AWG12 Ground : 1 x AWG12 or thicker	Up to 164'1" (50 m)
FS unit	Be sure to use the supplied cable. If the length between the indoor and FS unit exceeds 16 ft (5 m), connect by using the connection cable kit (RBC-CBK15FUL). (Sold separately)	

4-4. Design of control wiring

Summary of control wiring



1. All system interconnecting and central control wiring should be 2 conductor shielded cable.
2. On the header unit the control wire shield and the central control wire shield should both be connected to the same ground screw in the header unit.
3. The remote control wiring can be 2 conductor un-shielded cable.
4. All system interconnecting and control wiring should be sized per table 1, 2 and 3.
5. Control wire and power line wire between FS unit and indoor unit are the accessory parts of FS unit. (Wire length : 20 ft (6 m))
   If the length between indoor unit and FS unit exceeds 16 ft (5 m), connect by using the connection cable kit sold separately (RBC-CBK15FUL).

Restriction of control wiring

Be sure to keep the rule of below tables about size and length of control wiring.

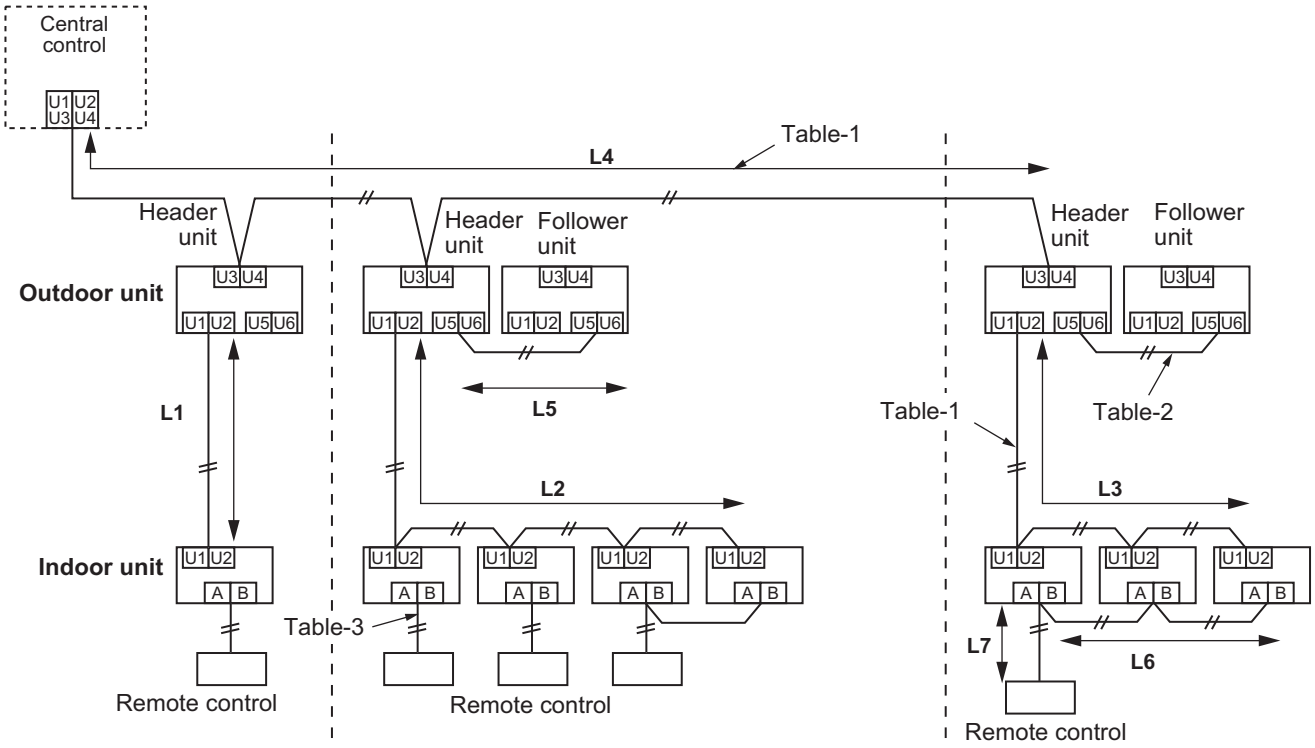


Table-1 Control wiring between indoor and outdoor units (L1, L2, L3), Central control wiring (L4)

Wiring	2-core
Type	Shielded cable
Size/Length	AWG16: Up to 3280 ft (1000 m) AWG14: Up to 6560 ft (2000 m) (*1)

(*1): Total length of control wiring length for all refrigerant circuits (L1 + L2 + L3 + L4)

Table-2 Control wiring between outdoor units (L5)

Wiring	2-core
Type	Shielded wire
Size/Length	AWG16 to AWG14/Up to 330 ft (100 m) (L5)

Table-3 Remote control wiring (L6, L7)

Wire	2-core
Size	AWG20 to AWG14
Length	• Up to 1640 ft (500 m) (L6 + L7) • Up 1310 ft (400 m) in case of wireless remote control in group control. • Up to 660 ft (200 m) total length of control wiring between indoor units (L6)

5-1. Specifications

5-1-1. Heat recovery

5-1-1-1. 208/230 V model

Single unit (System with Non-ducted indoor units)

Outdoor unit model name				MMY-	MAP0724FT9UL	MAP0964FT9UL	MAP1204FT9UL
Power Supply	Nominal voltage			V/Ph/Hz	(208 / 230) / 3 / 60		
	Voltage range			V	187 Minimum / 253 Maximum		
Cooling	Nominal capacity		(*1)	kBtu/h	72	96	120
	Rated capacity				70	92	118
	Rated power consumption		(*2)	kW	5.89	7.75	10.51
	Rated EER			Btu/W	11.9	11.9	11.2
Heating	Nominal capacity		(*1)	kBtu/h	81	108	135
	Rated capacity				77	103	113
	Rated power consumption		(*2)	kW	6.43	8.74	9.73
	Rated COP			W/W	3.51	3.45	3.40
Starting Current				A	Soft Start		
Dimension	Packing	Height		In	76.3	76.3	76.3
		Width		In	41.8	50.5	50.5
		Depth		In	32.6	32.6	32.6
	Unit	Height		In	72.9	72.9	72.9
		Width		In	39.0	47.6	47.6
		Depth		In	30.7	30.7	30.7
Total Weight	Packed			lbs	616	788	788
	Unit			lbs	583	751	751
Color					Silky shade (Munsell 1Y8.5/0.5)		
Compressor	Type				Hermetic twin rotary compressor		
	Motor output			kW	2.3 × 2	2.1 × 3	2.7 × 3
Fan unit	Fan				Propeller fan		
	Motor output			kW	1.0	1.0	1.0
	Air volume			cfm	5,120	7,060	7,620
Maximum external static pressure			(*3)	In WG	0.20	0.16	0.16
Heat exchanger					Finned tube		
Refrigerant	Name				R410A		
	Charged refrigerant amount		(*4)	lbs	25.4	25.4	25.4
High-pressure switch				psi	OFF:420 ON:540		
Protective devices					(*5)		
Electrical specifications	Unit	MCA	(*6)	A	34	50	52
		MOCP	(*7)	A	40	60	60
Refrigerant piping	Liquid	Type			Flare connection		
		Diameter		In	1/2"	1/2"	1/2"
	Suction gas	Type			Brazing connection		
		Diameter		In	7/8"	7/8"	1-1/8"
	Discharge gas	Type			Brazing connection		
		Diameter		In	3/4"	3/4"	3/4"
	Balance	Type			Flare connection		
		Diameter		In	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 125 %		
	Maximum number of indoor units				12	16	20
Operation temperature range		Cooling		FDB	14 to 109		
		Heating		FWB	-4 to 60		
Sound pressure level		Cooling		dB(A)	56.0	62.0	63.5
		Heating		dB(A)	58.0	63.0	65.5

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
072, 096 type : Equivalent piping length : 50 ft, Height difference : 0 ft, 120 type : Equivalent piping length : 75 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of June, 2013, please note that specification is subject to change without notice.

Combination unit (System with Non-ducted indoor units)

Outdoor unit set model name				MMY-	AP1444FT9UL	AP1684FT9UL	AP1924FT9UL	AP2164FT9UL	AP2404FT9UL
Outdoor unit model name				MMY-	MAP0724FT9UL MAP0724FT9UL	MAP0964FT9UL MAP0724FT9UL	MAP0964FT9UL MAP0964FT9UL	MAP1204FT9UL MAP0964FT9UL	MAP1204FT9UL MAP1204FT9UL
Power Supply	Nominal voltage			V/Ph/Hz	(208 / 230) / 3 / 60				
	Voltage range			V	187 Minimum / 253 Maximum				
Cooling	Nominal capacity	(*1)	kBtu/h		144	168	192	216	240
	Rated capacity				138	160	184	206	240
	Rated power consumption	(*2)	kW		12.01	13.43	15.85	18.28	24.57
	Rated EER		Btu/W		11.5	11.9	11.6	11.3	9.8
Heating	Nominal capacity	(*1)	kBtu/h		162	189	216	243	270
	Rated capacity				154	180	206	224	226
	Rated power consumption	(*2)	kW		12.94	15.90	18.30	20.12	19.54
	Rated COP		W/W		3.49	3.32	3.30	3.26	3.39
Starting Current			A		Soft Start				
Total Weight	Packed		lbs		616 + 616	788 + 616	788 + 788	788 + 788	788 + 788
	Unit		lbs		583 + 583	751 + 583	751 + 751	751 + 751	751 + 751
Color					Silky shade (Munsell 1Y8.5/0.5)				
Compressor	Type				Hermetic twin rotary compressor				
	Motor output		kW		2.3 × 2 + 2.3 × 2	2.1 × 3 + 2.3 × 2	2.1 × 3 + 2.1 × 3	2.7 × 3 + 2.1 × 3	2.7 × 3 + 2.7 × 3
Fan unit	Fan				Propeller fan				
	Motor output		kW		1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0
	Air volume		cfm		5,120 + 5,120	7,060 + 5,120	7,060 + 7,060	7,620 + 7,060	7,620 + 7,620
Maximum external static pressure		(*3)	In WG		0.20	0.16	0.16	0.16	0.16
Heat exchanger					Finned tube				
Refrigerant	Name				R410A				
	Charged refrigerant amount	(*4)	lbs		25.4 + 25.4	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4
High-pressure switch			psi		OFF:420 ON:540				
Protective devices					(*5)				
Electrical specifications	Unit	MCA (*6)	A		34 + 34	50 + 34	50 + 50	52 + 50	52 + 52
		MOCP (*7)	A		40 + 40	60 + 40	60 + 60	60 + 60	60 + 60
Refrigerant piping	Liquid	Type			Flare connection				
		Diameter	In		5/8"	3/4"	3/4"	3/4"	3/4"
	Suction gas	Type			Brazing connection				
		Diameter	In		1-1/8"	1-1/8"	1-1/8"	1-3/8"	1-3/8"
	Discharge gas	Type			Brazing connection				
		Diameter	In		7/8"	7/8"	7/8"	1-1/8"	1-1/8"
	Balance	Type			Flare connection				
		Diameter	In		3/8"	3/8"	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 125 %				
	Maximum number of indoor units				24	28	32	36	40
Operation temperature range	Cooling		FDB		14 to 109				
	Heating		FWB		-4 to 60				
Sound pressure level	Cooling		dB(A)		59.0	63.0	65.5	66.0	66.5
	Heating		dB(A)		61.0	64.5	66.0	67.5	68.5

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
Equivalent piping length : 100 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of June, 2013, please note that specification is subject to change without notice.

Single unit (System with ducted indoor units)

Outdoor unit model name				MMY-	MAP0724FT9UL	MAP0964FT9UL	MAP1204FT9UL
Power Supply	Nominal voltage			V/Ph/Hz	(208 / 230) / 3 / 60		
	Voltage range			V	187 Minimum / 253 Maximum		
Cooling	Nominal capacity		(*1)	kBtu/h	72	96	120
	Rated capacity				70	92	118
	Rated power consumption		(*2)	kW	5.64	7.79	10.04
	Rated EER			Btu/W	12.4	11.8	11.8
Heating	Nominal capacity		(*1)	kBtu/h	81	108	135
	Rated capacity				77	103	113
	Rated power consumption		(*2)	kW	6.35	8.52	9.10
	Rated COP			W/W	3.55	3.54	3.64
Starting Current				A	Soft Start		
Dimension	Packing	Height		In	76.3	76.3	76.3
		Width		In	41.8	50.5	50.5
		Depth		In	32.6	32.6	32.6
	Unit	Height		In	72.9	72.9	72.9
		Width		In	39.0	47.6	47.6
		Depth		In	30.7	30.7	30.7
Total Weight	Packed			lbs	616	788	788
	Unit			lbs	583	751	751
Color					Silky shade (Munsell 1Y8.5/0.5)		
Compressor	Type				Hermetic twin rotary compressor		
	Motor output			kW	2.3 × 2	2.1 × 3	2.7 × 3
Fan unit	Fan				Propeller fan		
	Motor output			kW	1.0	1.0	1.0
	Air volume			cfm	5,120	7,060	7,620
Maximum external static pressure			(*3)	In WG	0.20	0.16	0.16
Heat exchanger					Finned tube		
Refrigerant	Name				R410A		
	Charged refrigerant amount		(*4)	lbs	25.4	25.4	25.4
High-pressure switch				psi	OFF:420 ON:540		
Protective devices					(*5)		
Electrical specifications	Unit	MCA	(*6)	A	34	50	52
		MOCP	(*7)	A	40	60	60
Refrigerant piping	Liquid	Type			Flare connection		
		Diameter		In	1/2"	1/2"	1/2"
	Suction gas	Type			Brazing connection		
		Diameter		In	7/8"	7/8"	1-1/8"
	Discharge gas	Type			Brazing connection		
		Diameter		In	3/4"	3/4"	3/4"
	Balance	Type			Flare connection		
		Diameter		In	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 120 %		
	Maximum number of indoor units				11	15	19
Operation temperature range		Cooling		FDB	14 to 109		
		Heating		FWB	-4 to 60		
Sound pressure level		Cooling		dB(A)	56.0	62.0	63.5
		Heating		dB(A)	58.0	63.0	65.5

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
Equivalent piping length : 25 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of June, 2013, please note that specification is subject to change without notice.

Combination unit (System with ducted indoor units)

Outdoor unit set model name				MMY-	AP1444FT9UL	AP1684FT9UL	AP1924FT9UL	AP2164FT9UL	AP2404FT9UL
Outdoor unit model name				MMY-	MAP0724FT9UL MAP0724FT9UL	MAP0964FT9UL MAP0724FT9UL	MAP0964FT9UL MAP0964FT9UL	MAP1204FT9UL MAP0964FT9UL	MAP1204FT9UL MAP1204FT9UL
Power Supply	Nominal voltage			V/Ph/Hz	(208 / 230) / 3 / 60				
	Voltage range			V	187 Minimum / 253 Maximum				
Cooling	Nominal capacity	(*1)		kBtu/h	144	168	192	216	240
	Rated capacity				138	160	184	206	240
	Rated power consumption	(*2)		kW	11.96	13.47	15.47	18.79	21.34
	Rated EER			Btu/W	11.5	11.9	11.9	11.0	11.2
Heating	Nominal capacity	(*1)		kBtu/h	162	189	216	243	270
	Rated capacity				153	180	200	206	226
	Rated power consumption	(*2)		kW	13.29	15.47	17.06	17.78	19.61
	Rated COP			W/W	3.38	3.41	3.44	3.40	3.38
Starting Current				A	Soft Start				
Total Weight	Packed			lbs	616 + 616	788 + 616	788 + 788	788 + 788	788 + 788
	Unit			lbs	583 + 583	751 + 583	751 + 751	751 + 751	751 + 751
Color					Silky shade (Munsell 1Y8.5/0.5)				
Compressor	Type				Hermetic twin rotary compressor				
	Motor output			kW	2.3 × 2 + 2.3 × 2	2.1 × 3 + 2.3 × 2	2.1 × 3 + 2.1 × 3	2.7 × 3 + 2.1× 3	2.7 × 3 + 2.7 × 3
Fan unit	Fan				Propeller fan				
	Motor output			kW	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0
	Air volume			cfm	5,120 + 5,120	7,060 + 5,120	7,060 + 7,060	7,620 + 7,060	7,620 + 7,620
Maximum external static pressure			(*3)	In WG	0.20	0.16	0.16	0.16	0.16
Heat exchanger					Finned tube				
Refrigerant	Name				R410A				
	Charged refrigerant amount		(*4)	lbs	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4
High-pressure switch				psi	OFF:420 ON:540				
Protective devices					(*5)				
Electrical specifications	Unit	MCA	(*6)	A	34 + 34	50 + 34	50 + 50	52 + 50	52 + 52
		MOCP	(*7)	A	40 + 40	60 + 40	60 + 60	60 + 60	60 + 60
Refrigerant piping	Liquid	Type			Flare connection				
		Diameter		In	5/8"	3/4"	3/4"	3/4"	3/4"
	Suction gas	Type			Brazing connection				
		Diameter		In	1-1/8"	1-1/8"	1-1/8"	1-3/8"	1-3/8"
	Discharge gas	Type			Brazing connection				
		Diameter		In	7/8"	7/8"	7/8"	1-1/8"	1-1/8"
	Balance	Type			Flare connection				
		Diameter		In	3/8"	3/8"	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 120 %				
	Maximum number of indoor units				23	26	30	34	38
Operation temperature range	Cooling			FDB	14 to 109				
	Heating			FWB	-4 to 60				
Sound pressure level	Cooling			dB(A)	59.0	63.0	65.5	66.0	66.5
	Heating			dB(A)	61.0	64.5	66.0	67.5	68.5

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
Equivalent piping length : 50 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of June, 2013, please note that specification is subject to change without notice.

5-1-1-2. 460 V model

Single unit (System with Non-ducted indoor units)

Outdoor unit model name				MMY-	MAP0724FT6UL	MAP0964FT6UL	MAP1204FT6UL
Power Supply	Nominal voltage			V/Ph/Hz	460 / 3 / 60		
	Voltage range			V	414 Minimum / 506 Maximum		
Cooling	Nominal capacity		(*1)	kBtu/h	72	96	120
	Rated capacity				70	92	118
	Rated power consumption		(*2)	kW	5.89	7.75	10.51
	Rated EER			Btu/W	11.9	11.9	11.2
Heating	Nominal capacity		(*1)	kBtu/h	81	108	135
	Rated capacity				77	103	113
	Rated power consumption		(*2)	kW	6.43	8.74	9.73
	Rated COP			W/W	3.51	3.45	3.40
Starting Current				A	Soft Start		
Dimension	Packing	Height		In	76.3	76.3	76.3
		Width		In	41.8	50.5	50.5
		Depth		In	32.6	32.6	32.6
	Unit	Height		In	72.9	72.9	72.9
		Width		In	39.0	47.6	47.6
		Depth		In	30.7	30.7	30.7
Total Weight	Packed			lbs	691	863	863
	Unit			lbs	658	826	826
Color					Silky shade (Munsell 1Y8.5/0.5)		
Compressor	Type				Hermetic twin rotary compressor		
	Motor output			kW	2.3 × 2	2.1 × 3	2.7 × 3
Fan unit	Fan				Propeller fan		
	Motor output			kW	1.0	1.0	1.0
	Air volume			cfm	5,120	7,060	7,620
Maximum external static pressure			(*3)	In WG	0.20	0.16	0.16
Heat exchanger					Finned tube		
Refrigerant	Name				R410A		
	Charged refrigerant amount		(*4)	lbs	25.4	25.4	25.4
High-pressure switch				psi	OFF:420 ON:540		
Protective devices					(*5)		
Electrical specifications	Unit	MCA	(*6)	A	19	28	30
		MOCP	(*7)	A	25	35	35
Refrigerant piping	Liquid	Type			Flare connection		
		Diameter		In	1/2"	1/2"	1/2"
	Suction gas	Type			Brazing connection		
		Diameter		In	7/8"	7/8"	1-1/8"
	Discharge gas	Type			Brazing connection		
		Diameter		In	3/4"	3/4"	3/4"
	Balance	Type			Flare connection		
		Diameter		In	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 125 %		
	Maximum number of indoor units				12	16	20
Operation temperature range		Cooling		FDB	14 to 109		
		Heating		FWB	-4 to 60		
Sound pressure level		Cooling		dB(A)	56.0	62.0	63.5
		Heating		dB(A)	58.0	63.0	65.5

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
072, 096 type : Equivalent piping length : 50 ft, Height difference : 0 ft, 120 type : Equivalent piping length : 75 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of June, 2013, please note that specification is subject to change without notice.

Combination unit (System with Non-ducted indoor units)

Outdoor unit set model name				MMY-	AP1444FT6UL	AP1684FT6UL	AP1924FT6UL	AP2164FT6UL	AP2404FT6UL
Outdoor unit model name				MMY-	MAP0724FT6UL MAP0724FT6UL	MAP0964FT6UL MAP0724FT6UL	MAP0964FT6UL MAP0964FT6UL	MAP1204FT6UL MAP0964FT6UL	MAP1204FT6UL MAP1204FT6UL
Power Supply	Nominal voltage			V/Ph/Hz	460 / 3 / 60				
	Voltage range			V	414 Minimum / 506 Maximum				
Cooling	Nominal capacity		(*1)	kBtu/h	144	168	192	216	240
	Rated capacity				138	160	184	206	240
	Rated power consumption		(*2)	kW	12.01	13.43	15.85	18.28	24.57
	Rated EER			Btu/W	11.5	11.9	11.6	11.3	9.8
Heating	Nominal capacity		(*1)	kBtu/h	162	189	216	243	270
	Rated capacity				154	180	206	224	226
	Rated power consumption		(*2)	kW	12.94	15.90	18.30	20.12	19.54
	Rated COP			W/W	3.49	3.32	3.30	3.26	3.39
Starting Current				A	Soft Start				
Total Weight	Packed			lbs	691 + 691	863 + 691	863 + 863	863 + 863	863 + 863
	Unit			lbs	658 + 658	826 + 658	826 + 826	826 + 826	826 + 826
Color					Silky shade (Munsell 1Y8.5/0.5)				
Compressor	Type				Hermetic twin rotary compressor				
	Motor output			kW	2.3 × 2 + 2.3 × 2	2.1 × 3 + 2.3 × 2	2.1 × 3 + 2.1 × 3	2.7 × 3 + 2.1 × 3	2.7 × 3 + 2.7 × 3
Fan unit	Fan				Propeller fan				
	Motor output			kW	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0
	Air volume			cfm	5,120 + 5,120	7,060 + 5,120	7,060 + 7,060	7,620 + 7,060	7,620 + 7,620
Maximum external static pressure			(*3)	In WG	0.20	0.16	0.16	0.16	0.16
Heat exchanger					Finned tube				
Refrigerant	Name				R410A				
	Charged refrigerant amount		(*4)	lbs	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4
High-pressure switch				psi	OFF:420 ON:540				
Protective devices					(*5)				
Electrical specifications	Unit	MCA	(*6)	A	19 + 19	28 + 19	28 + 28	30 + 28	30 + 30
		MOCP	(*7)	A	25 + 25	35 + 25	35 + 35	35 + 35	35 + 35
Refrigerant piping	Liquid	Type			Flare connection				
		Diameter		In	5/8"	3/4"	3/4"	3/4"	3/4"
	Suction gas	Type			Brazing connection				
		Diameter		In	1-1/8"	1-1/8"	1-1/8"	1-3/8"	1-3/8"
	Discharge gas	Type			Brazing connection				
		Diameter		In	7/8"	7/8"	7/8"	1-1/8"	1-1/8"
	Balance	Type			Flare connection				
		Diameter		In	3/8"	3/8"	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 125 %				
	Maximum number of indoor units				24	28	32	36	40
Operation temperature range	Cooling			FDB	14 to 109				
	Heating			FWB	-4 to 60				
Sound pressure level	Cooling			dB(A)	59.0	63.0	65.5	66.0	66.5
	Heating			dB(A)	61.0	64.5	66.0	67.5	68.5

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
Equivalent piping length : 100 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of June, 2013, please note that specification is subject to change without notice.

Single unit (System with ducted indoor units)

Outdoor unit model name				MMY-	MAP0724FT6UL	MAP0964FT6UL	MAP1204FT6UL
Power Supply	Nominal voltage			V/Ph/Hz	460 / 3 / 60		
	Voltage range			V	414 Minimum / 506 Maximum		
Cooling	Nominal capacity		(*1)	kBtu/h	72	96	120
	Rated capacity				70	92	118
	Rated power consumption		(*2)	kW	5.64	7.79	10.04
	Rated EER			Btu/W	12.4	11.8	11.8
Heating	Nominal capacity		(*1)	kBtu/h	81	108	135
	Rated capacity				77	103	113
	Rated power consumption		(*2)	kW	6.35	8.52	9.10
	Rated COP			W/W	3.55	3.54	3.64
Starting Current				A	Soft Start		
Dimension	Packing	Height		In	76.3	76.3	76.3
		Width		In	41.8	50.5	50.5
		Depth		In	32.6	32.6	32.6
	Unit	Height		In	72.9	72.9	72.9
		Width		In	39.0	47.6	47.6
		Depth		In	30.7	30.7	30.7
Total Weight	Packed			lbs	691	863	863
	Unit			lbs	658	826	826
Color					Silky shade (Munsell 1Y8.5/0.5)		
Compressor	Type				Hermetic twin rotary compressor		
	Motor output			kW	2.3 × 2	2.1 × 3	2.7 × 3
Fan unit	Fan				Propeller fan		
	Motor output			kW	1.0	1.0	1.0
	Air volume			cfm	5,120	7,060	7,620
Maximum external static pressure			(*3)	In WG	0.20	0.16	0.16
Heat exchanger					Finned tube		
Refrigerant	Name				R410A		
	Charged refrigerant amount		(*4)	lbs	25.4	25.4	25.4
High-pressure switch				psi	OFF:420 ON:540		
Protective devices					(*5)		
Electrical specifications	Unit	MCA	(*6)	A	19	28	30
		MOCP	(*7)	A	25	35	35
Refrigerant piping	Liquid	Type			Flare connection		
		Diameter		In	1/2"	1/2"	1/2"
	Suction gas	Type			Brazing connection		
		Diameter		In	7/8"	7/8"	1-1/8"
	Discharge gas	Type			Brazing connection		
		Diameter		In	3/4"	3/4"	3/4"
	Balance	Type			Flare connection		
		Diameter		In	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 120 %		
	Maximum number of indoor units				11	15	19
Operation temperature range		Cooling		FDB	14 to 109		
		Heating		FWB	-4 to 60		
Sound pressure level		Cooling		dB(A)	56.0	62.0	63.5
		Heating		dB(A)	58.0	63.0	65.5

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
Equivalent piping length : 25 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of June, 2013, please note that specification is subject to change without notice.

Combination unit (System with ducted indoor units)

Outdoor unit set model name				**MMY-**	**AP1444FT6UL**	**AP1684FT6UL**	**AP1924FT6UL**	**AP2164FT6UL**	**AP2404FT6UL**
Outdoor unit model name				**MMY-**	**MAP0724FT6UL MAP0724FT6UL**	**MAP0964FT6UL MAP0724FT6UL**	**MAP0964FT6UL MAP0964FT6UL**	**MAP1204FT6UL MAP0964FT6UL**	**MAP1204FT6UL MAP1204FT6UL**
Power Supply	Nominal voltage			V/Ph/Hz	460 / 3 / 60				
	Voltage range			V	414 Minimum / 506 Maximum				
Cooling	Nominal capacity		(*1)	kBtu/h	144	168	192	216	240
	Rated capacity				138	160	184	206	240
	Rated power consumption		(*2)	kW	11.96	13.47	15.47	18.79	21.34
	Rated EER			Btu/W	11.5	11.9	11.9	11.0	11.2
Heating	Nominal capacity		(*1)	kBtu/h	162	189	216	243	270
	Rated capacity				153	180	200	206	226
	Rated power consumption		(*2)	kW	13.29	15.47	17.06	17.78	19.61
	Rated COP			W/W	3.38	3.41	3.44	3.40	3.38
Starting Current				A	Soft Start				
Total Weight	Packed			lbs	691 + 691	863 + 691	863 + 863	863 + 863	863 + 863
	Unit			lbs	658 + 658	826 + 658	826 + 826	826 + 826	826 + 826
Color					Silky shade (Munsell 1Y8.5/0.5)				
Compressor	Type				Hermetic twin rotary compressor				
	Motor output			kW	2.3 × 2 + 2.3 × 2	2.1 × 3 + 2.3 × 2	2.1 × 3 + 2.1 × 3	2.7 × 3 + 2.1 × 3	2.7 × 3 + 2.7 × 3
Fan unit	Fan				Propeller fan				
	Motor output			kW	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0
	Air volume			cfm	5,120 + 5,120	7,060 + 5,120	7,060 + 7,060	7,620 + 7,060	7,620 + 7,620
Maximum external static pressure			(*3)	In WG	0.20	0.16	0.16	0.16	0.16
Heat exchanger					Finned tube				
Refrigerant	Name				R410A				
	Charged refrigerant amount		(*4)	lbs	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4
High-pressure switch				psi	OFF:420 ON:540				
Protective devices					(*5)				
Electrical specifications	Unit	MCA	(*6)	A	19 + 19	28 + 19	28 + 28	30 + 28	30 + 30
		MOCP	(*7)	A	25 + 25	35 + 25	35 + 35	35 + 35	35 + 35
Refrigerant piping	Liquid	Type			Flare connection				
		Diameter		In	5/8"	3/4"	3/4"	3/4"	3/4"
	Suction gas	Type			Brazing connection				
		Diameter		In	1-1/8"	1-1/8"	1-1/8"	1-3/8"	1-3/8"
	Discharge gas	Type			Brazing connection				
		Diameter		In	7/8"	7/8"	7/8"	1-1/8"	1-1/8"
	Balance	Type			Flare connection				
		Diameter		In	3/8"	3/8"	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 120 %				
	Maximum number of indoor units				23	26	30	34	38
Operation temperature range	Cooling			FDB	14 to 109				
	Heating			FWB	-4 to 60				
Sound pressure level	Cooling			dB(A)	59.0	63.0	65.5	66.0	66.5
	Heating			dB(A)	61.0	64.5	66.0	67.5	68.5

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
Equivalent piping length : 50 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of June, 2013, please note that specification is subject to change without notice.

5-1-2. Heat pump

5-1-2-1. 208/230 V model

Single unit (System with Non-ducted indoor units)

Outdoor unit model name				MMY-	MAP0724HT9UL	MAP0964HT9UL	MAP1144HT9UL
Power Supply	Nominal voltage			V/Ph/Hz	(208 / 230) / 3 / 60		
	Voltage range			V	187 Minimum / 253 Maximum		
Cooling	Nominal capacity		(*1)	kBtu/h	72	96	114
	Rated capacity				72	96	112
	Rated power consumption		(*2)	kW	6.44	8.57	9.97
	Rated EER			Btu/W	11.2	11.2	11.2
Heating	Nominal capacity		(*1)	kBtu/h	81	108	128
	Rated capacity				81	108	130
	Rated power consumption		(*2)	kW	6.69	9.44	11.16
	Rated COP			W/W	3.55	3.35	3.41
Starting Current				A	Soft Start		
Dimension	Packing	Height		In	76.3	76.3	76.3
		Width		In	41.8	50.5	50.5
		Depth		In	32.6	32.6	32.6
	Unit	Height		In	72.9	72.9	72.9
		Width		In	39.0	47.6	47.6
		Depth		In	30.7	30.7	30.7
Total Weight	Packed			lbs	579	779	779
	Unit			lbs	546	742	742
Color					Silky shade (Munsell 1Y8.5/0.5)		
Compressor	Type				Hermetic twin rotary compressor		
	Motor output			kW	2.3 × 2	2.1 × 3	2.5 × 3
Fan unit	Fan				Propeller fan		
	Motor output			kW	1.0	1.0	1.0
	Air volume			cfm	5,800	6,600	7,060
Maximum external static pressure			(*3)	In WG	0.20	0.20	0.20
Heat exchanger					Finned tube		
Refrigerant	Name				R410A		
	Charged refrigerant amount		(*4)	lbs	25.4	25.4	25.4
High-pressure switch				psi	OFF:420 ON:540		
Protective devices					(*5)		
Electrical specifications	Unit	MCA	(*6)	A	36	50	52
		MOCP	(*7)	A	40	60	60
Refrigerant piping	Liquid	Type			Flare connection		
		Diameter		In	1/2"	1/2"	1/2"
	Suction gas	Type			Brazing connection		
		Diameter		In	7/8"	7/8"	1-1/8"
	Balance	Type			Flare connection		
		Diameter		In	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 125 %		
	Maximum number of indoor units				12	16	19
Operation temperature range	Cooling			FDB	23 to 109		
	Heating			FWB	5 to 60		
Sound pressure level	Cooling			dB(A)	56.0	60.0	62.0
	Heating			dB(A)	57.0	62.0	63.0

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
072, 096 type : Equivalent piping length : 50 ft, Height difference : 0 ft, 114 type : Equivalent piping length : 75 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of September, 2011, please note that specification is subject to change without notice.

Combination unit (System with Non-ducted indoor units)

Outdoor unit set model name				**MMY-**	**AP1444HT9UL**	**AP1684HT9UL**	**AP1924HT9UL**	**AP2284HT9UL**
Outdoor unit model name				**MMY-**	**MAP0724HT9UL MAP0724HT9UL**	**MAP0964HT9UL MAP0724HT9UL**	**MAP0964HT9UL MAP0964HT9UL**	**MAP1144HT9UL MAP1144HT9UL**
Power Supply	Nominal voltage			V/Ph/Hz	(208 / 230) / 3 / 60			
	Voltage range			V	187 Minimum / 253 Maximum			
Cooling	Nominal capacity		(*1)	kBtu/h	144	168	192	228
	Rated capacity				136	168	192	226
	Rated power consumption		(*2)	kW	11.87	15.48	17.82	20.87
	Rated EER			Btu/W	11.4	10.9	10.8	10.8
Heating	Nominal capacity		(*1)	kBtu/h	162	189	216	256
	Rated capacity				156	189	212	246
	Rated power consumption		(*2)	kW	13.58	17.10	19.12	20.75
	Rated COP			W/W	3.36	3.24	3.25	3.47
Starting Current				A	Soft Start			
Total Weight	Packed			lbs	579 + 579	779 + 579	779 + 779	779 + 779
	Unit			lbs	546 + 546	742 + 546	742 + 742	742 + 742
Color					Silky shade (Munsell 1Y8.5/0.5)			
Compressor	Type				Hermetic twin rotary compressor			
	Motor output			kW	2.3 × 2 + 2.3 × 2	2.1 × 3 + 2.3 × 2	2.1 × 3 + 2.1 × 3	2.5 × 3 + 2.5 × 3
Fan unit	Fan				Propeller fan			
	Motor output			kW	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0
	Air volume			cfm	5,800 + 5,800	6,600 + 5,800	6,600 + 6,600	7,060 + 7,060
Maximum external static pressure			(*3)	In WG	0.20	0.20	0.20	0.20
Heat exchanger					Finned tube			
Refrigerant	Name				R410A			
	Charged refrigerant amount		(*4)	lbs	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4
High-pressure switch				psi	OFF:420 ON:540			
Protective devices					(*5)			
Electrical specifications	Unit	MCA	(*6)	A	72	86	100	104
		MOCP	(*7)	A	80	100	120	120
Refrigerant piping	Liquid	Type			Flare connection			
		Diameter		In	5/8"	5/8"	5/8"	3/4"
	Suction gas	Type			Brazing connection			
		Diameter		In	1-1/8"	1-1/8"	1-1/8"	1-3/8"
	Balance	Type			Flare connection			
		Diameter		In	3/8"	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 125 %			
	Maximum number of indoor units				24	28	32	38
Operation temperature range		Cooling		FDB	23 to 109			
		Heating		FWB	5 to 60			
Sound pressure level		Cooling		dB(A)	59.0	61.5	63.0	65.0
		Heating		dB(A)	60.0	63.5	65.0	66.0

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
Equivalent piping length : 100 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of September, 2011, please note that specification is subject to change without notice.

Single unit (System with ducted indoor units)

Outdoor unit model name				MMY-	MAP0724HT9UL	MAP0964HT9UL	MAP1144HT9UL
Power Supply	Nominal voltage			V/Ph/Hz	(208 / 230) / 3 / 60		
	Voltage range			V	187 Minimum / 253 Maximum		
Cooling	Nominal capacity		(*1)	kBtu/h	72	96	114
	Rated capacity				72	96	110
	Rated power consumption		(*2)	kW	5.90	8.82	9.54
	Rated EER			Btu/W	12.2	11.6	11.5
Heating	Nominal capacity		(*1)	kBtu/h	81	108	128
	Rated capacity				81	104	126
	Rated power consumption		(*2)	kW	6.50	8.87	10.73
	Rated COP			W/W	3.46	3.44	3.44
Starting Current				A	Soft Start		
Dimension	Packing	Height		In	76.3	76.3	76.3
		Width		In	41.8	50.5	50.5
		Depth		In	32.6	32.6	32.6
	Unit	Height		In	72.9	72.9	72.9
		Width		In	39.0	47.6	47.6
		Depth		In	30.7	30.7	30.7
Total Weight	Packed			lbs	579	779	779
	Unit			lbs	546	742	742
Color					Silky shade (Munsell 1Y8.5/0.5)		
Compressor	Type				Hermetic twin rotary compressor		
	Motor output			kW	2.3 × 2	2.1 × 3	2.5 × 3
Fan unit	Fan				Propeller fan		
	Motor output			kW	1.0	1.0	1.0
	Air volume			cfm	5,800	6,600	7,060
Maximum external static pressure			(*3)	In WG	0.20	0.20	0.20
Heat exchanger					Finned tube		
Refrigerant	Name				R410A		
	Charged refrigerant amount		(*4)	lbs	25.4	25.4	25.4
High-pressure switch				psi	OFF:420 ON:540		
Protective devices					(*5)		
Electrical specifications	Unit	MCA	(*6)	A	36	50	52
		MOCP	(*7)	A	40	60	60
Refrigerant piping	Liquid	Type			Flare connection		
		Diameter		In	1/2"	1/2"	1/2"
	Suction gas	Type			Brazing connection		
		Diameter		In	7/8"	7/8"	1-1/8"
	Balance	Type			Flare connection		
		Diameter		In	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 120 %		
	Maximum number of indoor units				11	15	18
Operation temperature range		Cooling		FDB	23 to 109		
		Heating		FWB	5 to 60		
Sound pressure level		Cooling		dB(A)	56.0	60.0	62.0
		Heating		dB(A)	57.0	62.0	63.0

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
Equivalent piping length : 25 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of September, 2011, please note that specification is subject to change without notice.

Combination unit (System with ducted indoor units)

Outdoor unit set model name				**MMY-**	**AP1444HT9UL**	**AP1684HT9UL**	**AP1924HT9UL**	**AP2284HT9UL**
Outdoor unit model name				**MMY-**	**MAP0724HT9UL MAP0724HT9UL**	**MAP0964HT9UL MAP0724HT9UL**	**MAP0964HT9UL MAP0964HT9UL**	**MAP1144HT9UL MAP1144HT9UL**
Power Supply	Nominal voltage			V/Ph/Hz	(208 / 230) / 3 / 60			
	Voltage range			V	187 Minimum / 253 Maximum			
Cooling	Nominal capacity		(*1)	kBtu/h	144	168	192	228
	Rated capacity				134	168	192	198
	Rated power consumption		(*2)	kW	11.73	14.97	17.39	17.95
	Rated EER			Btu/W	11.4	11.2	11.0	11.0
Heating	Nominal capacity		(*1)	kBtu/h	162	189	216	256
	Rated capacity				162	185	200	214
	Rated power consumption		(*2)	kW	14.37	16.22	17.59	18.87
	Rated COP			W/W	3.30	3.34	3.33	3.32
Starting Current				A	Soft Start			
Total Weight	Packed			lbs	579 + 579	779 + 579	779 + 779	779 + 779
	Unit			lbs	546 + 546	742 + 546	742 + 742	742 + 742
Color					Silky shade (Munsell 1Y8.5/0.5)			
Compressor	Type				Hermetic twin rotary compressor			
	Motor output			kW	2.3 × 2 + 2.3 × 2	2.1 × 3 + 2.3 × 2	2.1 × 3 + 2.1 × 3	2.5 × 3 + 2.5 × 3
Fan unit	Fan				Propeller fan			
	Motor output			kW	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0
	Air volume			cfm	5,800 + 5,800	6,600 + 5,800	6,600 + 6,600	7,060 + 7,060
Maximum external static pressure			(*3)	In WG	0.20	0.20	0.20	0.20
Heat exchanger					Finned tube			
Refrigerant	Name				R410A			
	Charged refrigerant amount		(*4)	lbs	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4
High-pressure switch				psi	OFF:420 ON:540			
Protective devices					(*5)			
Electrical specifications	Unit	MCA	(*6)	A	72	86	100	104
		MOCP	(*7)	A	80	100	120	120
Refrigerant piping	Liquid	Type			Flare connection			
		Diameter		In	5/8"	5/8"	5/8"	3/4"
	Suction gas	Type			Brazing connection			
		Diameter		In	1-1/8"	1-1/8"	1-1/8"	1-3/8"
	Balance	Type			Flare connection			
		Diameter		In	3/8"	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 120 %			
	Maximum number of indoor units				23	26	30	36
Operation temperature range		Cooling		FDB	23 to 109			
		Heating		FWB	5 to 60			
Sound pressure level		Cooling		dB(A)	59.0	61.5	63.0	65.0
		Heating		dB(A)	60.0	63.5	65.0	66.0

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
Equivalent piping length : 50 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of September, 2011, please note that specification is subject to change without notice.

5-1-2-2. 460 V model

Single unit (System with Non-ducted indoor units)

Outdoor unit model name				MMY-	MAP0724HT6UL	MAP0964HT6UL	MAP1144HT6UL
Power Supply	Nominal voltage			V/Ph/Hz	460 / 3 / 60		
	Voltage range			V	414 Minimum / 506 Maximum		
Cooling	Nominal capacity		(*1)	kBtu/h	72	96	114
	Rated capacity				72	96	112
	Rated power consumption		(*2)	kW	6.44	8.57	9.97
	Rated EER			Btu/W	11.2	11.2	11.2
Heating	Nominal capacity		(*1)	kBtu/h	81	108	128
	Rated capacity				81	108	130
	Rated power consumption		(*2)	kW	6.69	9.44	11.16
	Rated COP			W/W	3.55	3.35	3.41
Starting Current				A	Soft Start		
Dimension	Packing	Height		In	76.3	76.3	76.3
		Width		In	41.8	50.5	50.5
		Depth		In	32.6	32.6	32.6
	Unit	Height		In	72.9	72.9	72.9
		Width		In	39.0	47.6	47.6
		Depth		In	30.7	30.7	30.7
Total Weight	Packed			lbs	654	855	855
	Unit			lbs	621	817	817
Color					Silky shade (Munsell 1Y8.5/0.5)		
Compressor	Type				Hermetic twin rotary compressor		
	Motor output			kW	2.3 × 2	2.1 × 3	2.5 × 3
Fan unit	Fan				Propeller fan		
	Motor output			kW	1.0	1.0	1.0
	Air volume			cfm	5,800	6,600	7,060
Maximum external static pressure			(*3)	In WG	0.20	0.20	0.20
Heat exchanger					Finned tube		
Refrigerant	Name				R410A		
	Charged refrigerant amount		(*4)	lbs	25.4	25.4	25.4
High-pressure switch				psi	OFF:420 ON:540		
Protective devices					(*5)		
Electrical specifications	Unit	MCA	(*6)	A	18	23	24
		MOCP	(*7)	A	20	25	25
Refrigerant piping	Liquid	Type			Flare connection		
		Diameter		In	1/2"	1/2"	1/2"
	Suction gas	Type			Brazing connection		
		Diameter		In	7/8"	7/8"	1-1/8"
	Balance	Type			Flare connection		
		Diameter		In	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 125 %		
	Maximum number of indoor units				12	16	19
Operation temperature range		Cooling		FDB	23 to 109		
		Heating		FWB	5 to 60		
Sound pressure level		Cooling		dB(A)	56.0	60.0	62.0
		Heating		dB(A)	57.0	62.0	63.0

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
072, 096 type : Equivalent piping length : 50 ft, Height difference : 0 ft, 114 type : Equivalent piping length : 75 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of January, 2012, please note that specification is subject to change without notice.

Combination unit (System with Non-ducted indoor units)

Outdoor unit set model name				**MMY-**	**AP1444HT6UL**	**AP1684HT6UL**	**AP1924HT6UL**	**AP2284HT6UL**
Outdoor unit model name				**MMY-**	**MAP0724HT6UL MAP0724HT6UL**	**MAP0964HT6UL MAP0724HT6UL**	**MAP0964HT6UL MAP0964HT6UL**	**MAP1144HT6UL MAP1144HT6UL**
Power Supply	Nominal voltage			V/Ph/Hz	460 / 3 / 60			
	Voltage range			V	414 Minimum / 506 Maximum			
Cooling	Nominal capacity		(*1)	kBtu/h	144	168	192	228
	Rated capacity				136	168	192	226
	Rated power consumption		(*2)	kW	11.87	15.48	17.82	20.87
	Rated EER			Btu/W	11.4	10.9	10.8	10.8
Heating	Nominal capacity		(*1)	kBtu/h	162	189	216	256
	Rated capacity				156	189	212	246
	Rated power consumption		(*2)	kW	13.58	17.10	19.12	20.75
	Rated COP			W/W	3.36	3.24	3.25	3.47
Starting Current				A	Soft Start			
Total Weight	Packed			lbs	654 + 654	855 + 654	855 + 855	855 + 855
	Unit			lbs	621 + 621	817 + 621	817 + 817	817 + 817
Color					Silky shade (Munsell 1Y8.5/0.5)			
Compressor	Type				Hermetic twin rotary compressor			
	Motor output			kW	2.3 × 2 + 2.3 × 2	2.1 × 3 + 2.3 × 2	2.1 × 3 + 2.1 × 3	2.5 × 3 + 2.5 × 3
Fan unit	Fan				Propeller fan			
	Motor output			kW	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0
	Air volume			cfm	5,800 + 5,800	6,600 + 5,800	6,600 + 6,600	7,060 + 7,060
Maximum external static pressure			(*3)	In WG	0.20	0.20	0.20	0.20
Heat exchanger					Finned tube			
Refrigerant	Name				R410A			
	Charged refrigerant amount		(*4)	lbs	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4
High-pressure switch				psi	OFF:420 ON:540			
Protective devices					(*5)			
Electrical specifications	Unit	MCA	(*6)	A	36	41	46	48
		MOCP	(*7)	A	40	45	50	50
Refrigerant piping	Liquid	Type			Flare connection			
		Diameter		In	5/8"	5/8"	5/8"	3/4"
	Suction gas	Type			Brazing connection			
		Diameter		In	1-1/8"	1-1/8"	1-1/8"	1-3/8"
	Balance	Type			Flare connection			
		Diameter		In	3/8"	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 125 %			
	Maximum number of indoor units				24	28	32	38
Operation temperature range		Cooling		FDB	23 to 109			
		Heating		FWB	5 to 60			
Sound pressure level		Cooling		dB(A)	59.0	61.5	63.0	65.0
		Heating		dB(A)	60.0	63.5	65.0	66.0

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
Equivalent piping length : 100 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of January, 2012, please note that specification is subject to change without notice.

Single unit (System with ducted indoor units)

Outdoor unit model name				MMY-	MAP0724HT6UL	MAP0964HT6UL	MAP1144HT6UL
Power Supply	Nominal voltage			V/Ph/Hz	460 / 3 / 60		
	Voltage range			V	414 Minimum / 506 Maximum		
Cooling	Nominal capacity		(*1)	kBtu/h	72	96	114
	Rated capacity				72	96	110
	Rated power consumption		(*2)	kW	5.90	8.82	9.54
	Rated EER			Btu/W	12.2	11.6	11.5
Heating	Nominal capacity		(*1)	kBtu/h	81	108	128
	Rated capacity				81	104	126
	Rated power consumption		(*2)	kW	6.50	8.87	10.73
	Rated COP			W/W	3.46	3.44	3.44
Starting Current				A	Soft Start		
Dimension	Packing	Height		In	76.3	76.3	76.3
		Width		In	41.8	50.5	50.5
		Depth		In	32.6	32.6	32.6
	Unit	Height		In	72.9	72.9	72.9
		Width		In	39.0	47.6	47.6
		Depth		In	30.7	30.7	30.7
Total Weight	Packed			lbs	654	855	855
	Unit			lbs	621	817	817
Color					Silky shade (Munsell 1Y8.5/0.5)		
Compressor	Type				Hermetic twin rotary compressor		
	Motor output			kW	2.3 × 2	2.1 × 3	2.5 × 3
Fan unit	Fan				Propeller fan		
	Motor output			kW	1.0	1.0	1.0
	Air volume			cfm	5,800	6,600	7,060
Maximum external static pressure			(*3)	In WG	0.20	0.20	0.20
Heat exchanger					Finned tube		
Refrigerant	Name				R410A		
	Charged refrigerant amount		(*4)	lbs	25.4	25.4	25.4
High-pressure switch				psi	OFF:420 ON:540		
Protective devices					(*5)		
Electrical specifications	Unit	MCA	(*6)	A	18	23	24
		MOCP	(*7)	A	20	25	25
Refrigerant piping	Liquid	Type			Flare connection		
		Diameter		In	1/2"	1/2"	1/2"
	Suction gas	Type			Brazing connection		
		Diameter		In	7/8"	7/8"	1-1/8"
	Balance	Type			Flare connection		
		Diameter		In	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 120 %		
	Maximum number of indoor units				11	15	18
Operation temperature range		Cooling		FDB	23 to 109		
		Heating		FWB	5 to 60		
Sound pressure level		Cooling		dB(A)	56.0	60.0	62.0
		Heating		dB(A)	57.0	62.0	63.0

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
Equivalent piping length : 25 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of January, 2012, please note that specification is subject to change without notice.

Combination unit (System with ducted indoor units)

Outdoor unit set model name				**MMY-**	**AP1444HT6UL**	**AP1684HT6UL**	**AP1924HT6UL**	**AP2284HT6UL**
Outdoor unit model name				**MMY-**	**MAP0724HT6UL MAP0724HT6UL**	**MAP0964HT6UL MAP0724HT6UL**	**MAP0964HT6UL MAP0964HT6UL**	**MAP1144HT6UL MAP1144HT6UL**
Power Supply	Nominal voltage			V/Ph/Hz	460 / 3 / 60			
	Voltage range			V	414 Minimum / 506 Maximum			
Cooling	Nominal capacity		(*1)	kBtu/h	144	168	192	228
	Rated capacity				134	168	192	198
	Rated power consumption		(*2)	kW	11.73	14.97	17.39	17.95
	Rated EER			Btu/W	11.4	11.2	11.0	11.0
Heating	Nominal capacity		(*1)	kBtu/h	162	189	216	256
	Rated capacity				162	185	200	214
	Rated power consumption		(*2)	kW	14.37	16.22	17.59	18.87
	Rated COP			W/W	3.30	3.34	3.33	3.32
Starting Current				A	Soft Start			
Total Weight	Packed			lbs	654 + 654	855 + 654	855 + 855	855 + 855
	Unit			lbs	621 + 621	817 + 621	817 + 817	817 + 817
Color					Silky shade (Munsell 1Y8.5/0.5)			
Compressor	Type				Hermetic twin rotary compressor			
	Motor output			kW	2.3 × 2 + 2.3 × 2	2.1 × 3 + 2.3 × 2	2.1 × 3 + 2.1 × 3	2.5 × 3 + 2.5 × 3
Fan unit	Fan				Propeller fan			
	Motor output			kW	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0	1.0 + 1.0
	Air volume			cfm	5,800 + 5,800	6,600 + 5,800	6,600 + 6,600	7,060 + 7,060
Maximum external static pressure			(*3)	In WG	0.20	0.20	0.20	0.20
Heat exchanger					Finned tube			
Refrigerant	Name				R410A			
	Charged refrigerant amount		(*4)	lbs	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4	25.4 + 25.4
High-pressure switch				psi	OFF:420 ON:540			
Protective devices					(*5)			
Electrical specifications	Unit	MCA	(*6)	A	36	41	46	48
		MOCP	(*7)	A	40	45	50	50
Refrigerant piping	Liquid	Type			Flare connection			
		Diameter		In	5/8"	5/8"	5/8"	3/4"
	Suction gas	Type			Brazing connection			
		Diameter		In	1-1/8"	1-1/8"	1-1/8"	1-3/8"
	Balance	Type			Flare connection			
		Diameter		In	3/8"	3/8"	3/8"	3/8"
Indoor units	Maximum capacity of combined indoor units				80 to 120 %			
	Maximum number of indoor units				23	26	30	36
Operation temperature range		Cooling		FDB	23 to 109			
		Heating		FWB	5 to 60			
Sound pressure level		Cooling		dB(A)	59.0	61.5	63.0	65.0
		Heating		dB(A)	60.0	63.5	65.0	66.0

(*1) Rated conditions
Cooling : Indoor air temperature 80 °F DryBulb/67 °F WetBulb, Outdoor air temperature 95 °F DryBulb
Heating : Indoor air temperature 70 °F DryBulb, Outdoor air temperature 47 °F DryBulb/43 °F WetBulb
Equivalent piping length : 50 ft, Height difference : 0 ft
(*2) Value for only outdoor unit
(*3) Setting is necessary
(*4) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.
(*5) High-pressure switch / High-pressure sensor / Low-pressure sensor / Fusible plug / PC board fuse / Inverter overload protector
(*6) Select wire size based on the larger value of MCA.
MCA : Minimum Circuit Amps (minimum circuit Amps required for power supply design.)
(*7) MOCP : Maximum Overcurrent Protection (Amps)
(*8) This specification is value as of January, 2012, please note that specification is subject to change without notice.

5-2. Dimensional drawing

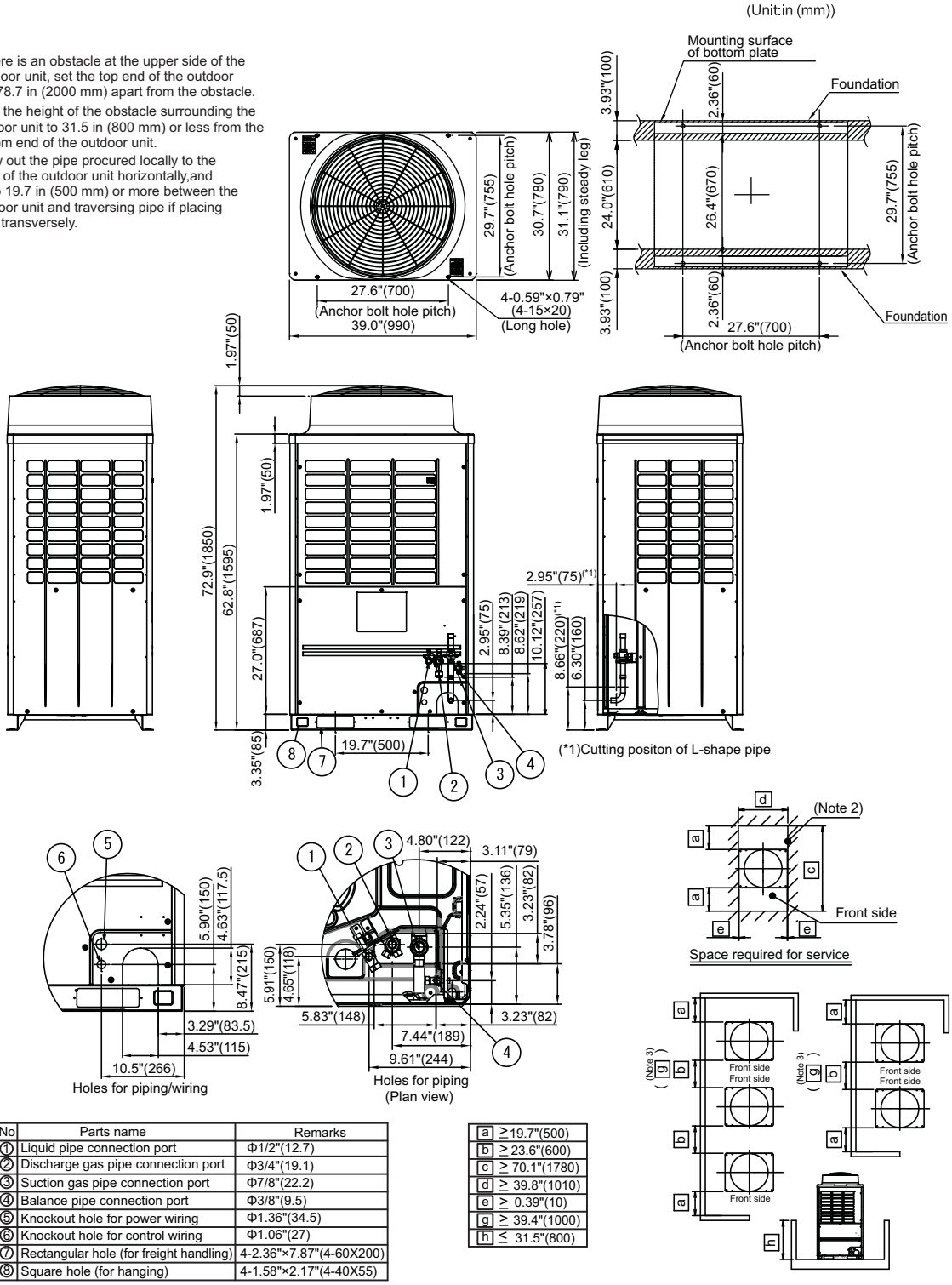
5-2-1. Heat recovery

5-2-1-1. Single unit

Model: MMY-MAP0724FT9UL, MAP0724FT6UL

(Unit:in (mm))

(Note)
1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 78.7 in (2000 mm) apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 31.5 in (800 mm) or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally,and keep 19.7 in (500 mm) or more between the outdoor unit and traversing pipe if placing pipe transversely.



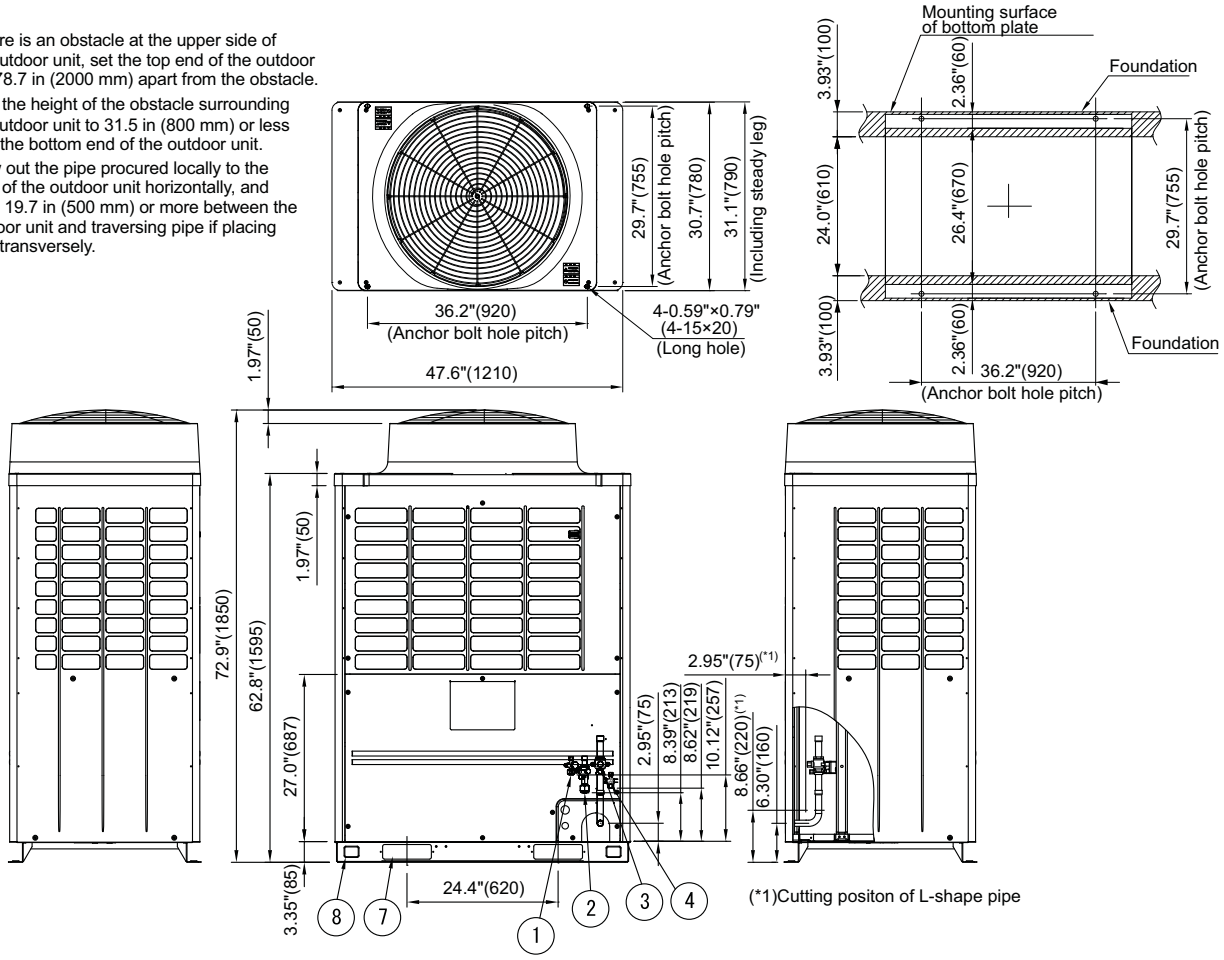
No	Parts name	Remarks
①	Liquid pipe connection port	Φ1/2"(12.7)
②	Discharge gas pipe connection port	Φ3/4"(19.1)
③	Suction gas pipe connection port	Φ7/8"(22.2)
④	Balance pipe connection port	Φ3/8"(9.5)
⑤	Knockout hole for power wiring	Φ1.36"(34.5)
⑥	Knockout hole for control wiring	Φ1.06"(27)
⑦	Rectangular hole (for freight handling)	4-2.36"×7.87"(4-60X200)
⑧	Square hole (for hanging)	4-1.58"×2.17"(4-40X55)

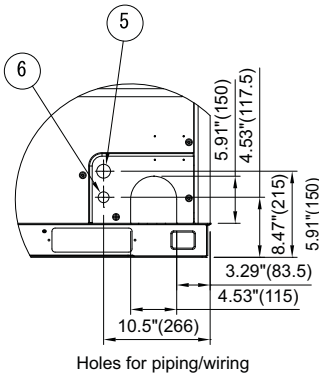
a	≥19.7"(500)
b	≥23.6"(600)
c	≥ 70.1"(1780)
d	≥ 39.8"(1010)
e	≥ 0.39"(10)
g	≥ 39.4"(1000)
h	≤ 31.5"(800)

Model: MMY-MAP0964FT9UL, MAP0964FT6UL
MMY-MAP1204FT9UL, MAP1204FT6UL

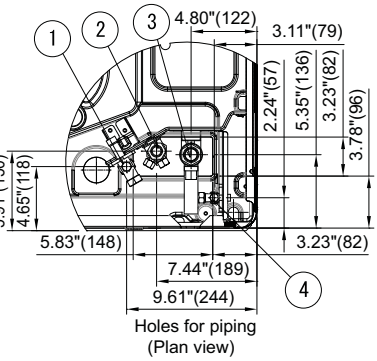
(Unit:in (mm))

(Note)
1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 78.7 in (2000 mm) apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 31.5 in (800 mm) or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally, and keep 19.7 in (500 mm) or more between the outdoor unit and traversing pipe if placing pipe transversely.

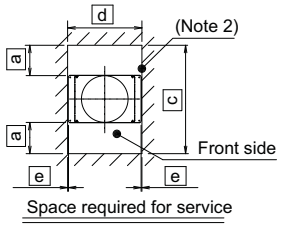




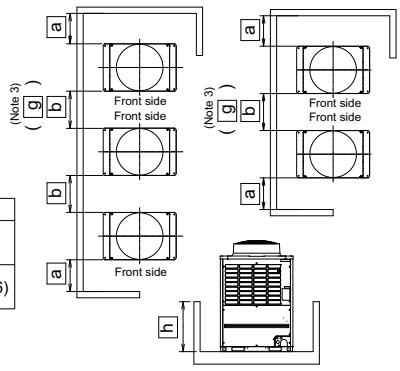
Holes for piping/wiring



Holes for piping
(Plan view)



a	≥19.7"(500)
b	≥23.6"(600)
c	≥70.1"(1780)
d	≥48.4"(1230)
e	≥0.39"(10)
g	≥39.4"(1000)
h	≤ 31.5"(800)



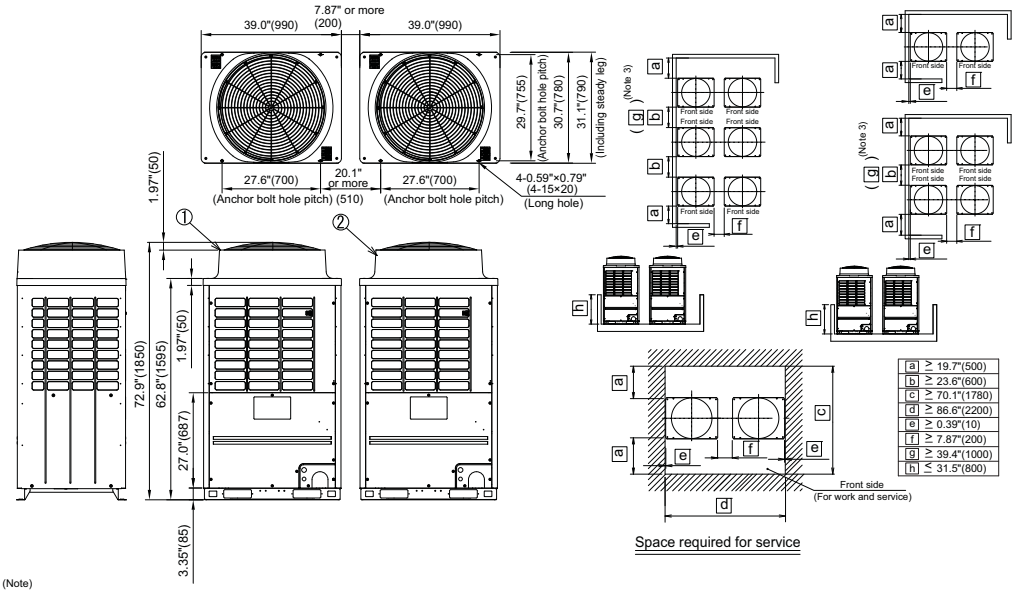
No	Parts name	Remarks
①	Liquid pipe connection port	Φ1/2"(12.7)
②	Discharge gas pipe connection port	Φ3/4"(19.1)
③	Suction gas pipe connection port	ΦA
④	Balance pipe connection port	Φ3/8"(9.5)
⑤	Knockout hole for power wiring	Φ1.36"(34.5)
⑥	Knockout hole for control wiring	Φ1.06"(27)
⑦	Rectangular hole (for freight handling)	4-2.36"×7.87"(4-60X200)
⑧	Square hole (for hanging)	4-1.58"×2.17"(4-40X55)

Model name	ΦA
MMY-MAP0964FT9UL	Φ7/8"(22.2)
MMY-MAP0964FT6UL	
MMY-MAP1204FT9UL	Φ1-1/8"(28.6)
MMY-MAP1204FT6UL	

5-2-1-2. Combination

Model name	Outdoor unit	
	① Header unit	② Follower unit
MMY-AP1444FT9UL	MMY-MAP0724FT9UL	MMY-MAP0724FT9UL
MMY-AP1444FT6UL	MMY-MAP0724FT6UL	MMY-MAP0724FT6UL

Two units connected

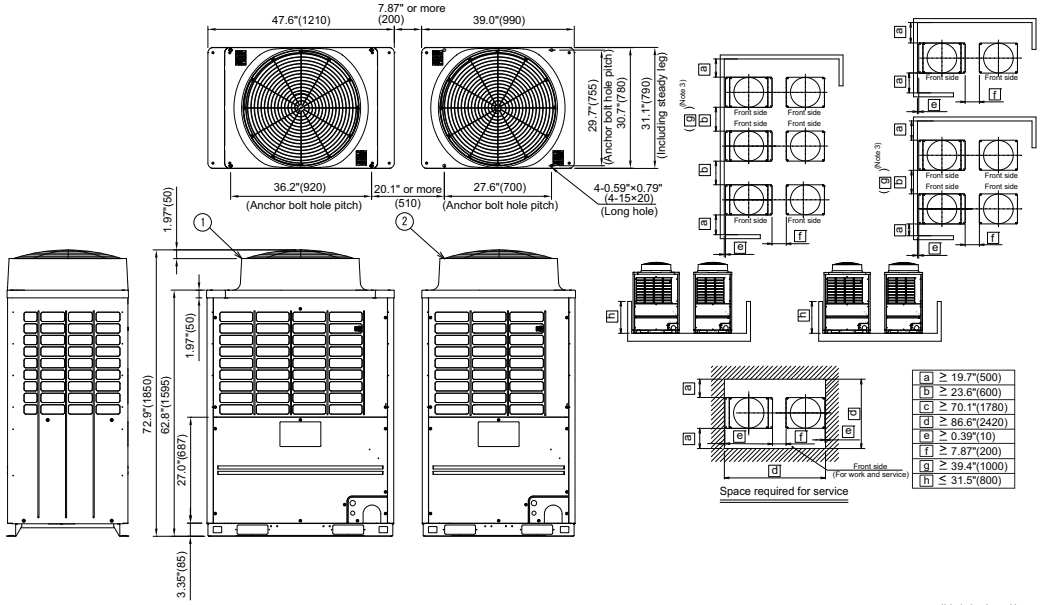


(Note)
1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 78.7" in (2000 mm) apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 31.5" in (800 mm) or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally,and keep 19.7" in (500 mm) or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Arrange each outdoor unit in order of its capacity.
(Header unit① ≥ Follower unit②)

(Unit:in (mm))

Model name	Outdoor unit	
	① Header unit	② Follower unit
MMY-AP1684FT9UL	MMY-MAP0964FT9UL	MMY-MAP0724FT9UL
MMY-AP1684FT6UL	MMY-MAP0964FT6UL	MMY-MAP0724FT6UL

Two units connected

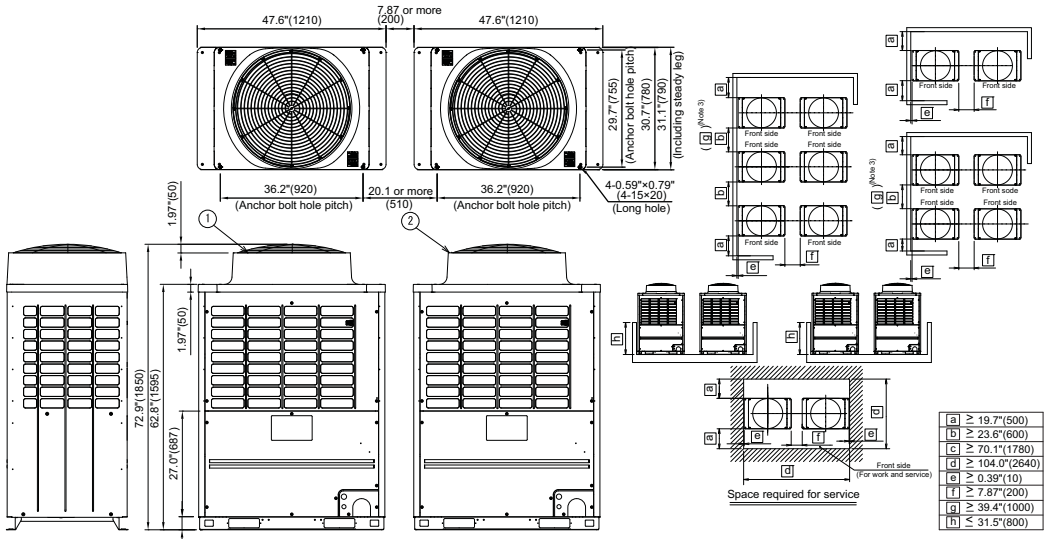


(Note)
1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 78.7" in (2000 mm) apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 31.5" in (800 mm) or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally,and keep 19.7" in (500 mm) or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Arrange each outdoor unit in order of its capacity.
(Header unit① ≥ Follower unit②)

(Unit:in (mm))

Model name	Outdoor unit	
	① Header unit	② Follower unit
MMY-AP1924FT9UL	MMY-MAP0964FT9UL	MMY-MAP0964FT9UL
MMY-AP1924FT6UL	MMY-MAP0964FT6UL	MMY-MAP0964FT6UL
MMY-AP2164FT9UL	MMY-MAP1204FT9UL	MMY-MAP0964FT9UL
MMY-AP2164FT6UL	MMY-MAP1204FT6UL	MMY-MAP0964FT6UL
MMY-AP2404FT9UL	MMY-MAP1204FT9UL	MMY-MAP1204FT9UL
MMY-AP2404FT6UL	MMY-MAP1204FT6UL	MMY-MAP1204FT6UL

Two units connected



(Note)

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 78.7" in (2000 mm) apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 31.5" in (800 mm) or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally,and keep 19.7" in (500 mm) or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Arrange each outdoor unit in order of its capacity. (Header unit① ≥ Follower unit②)

(Unit:in (mm))

5-2-2. Heat pump

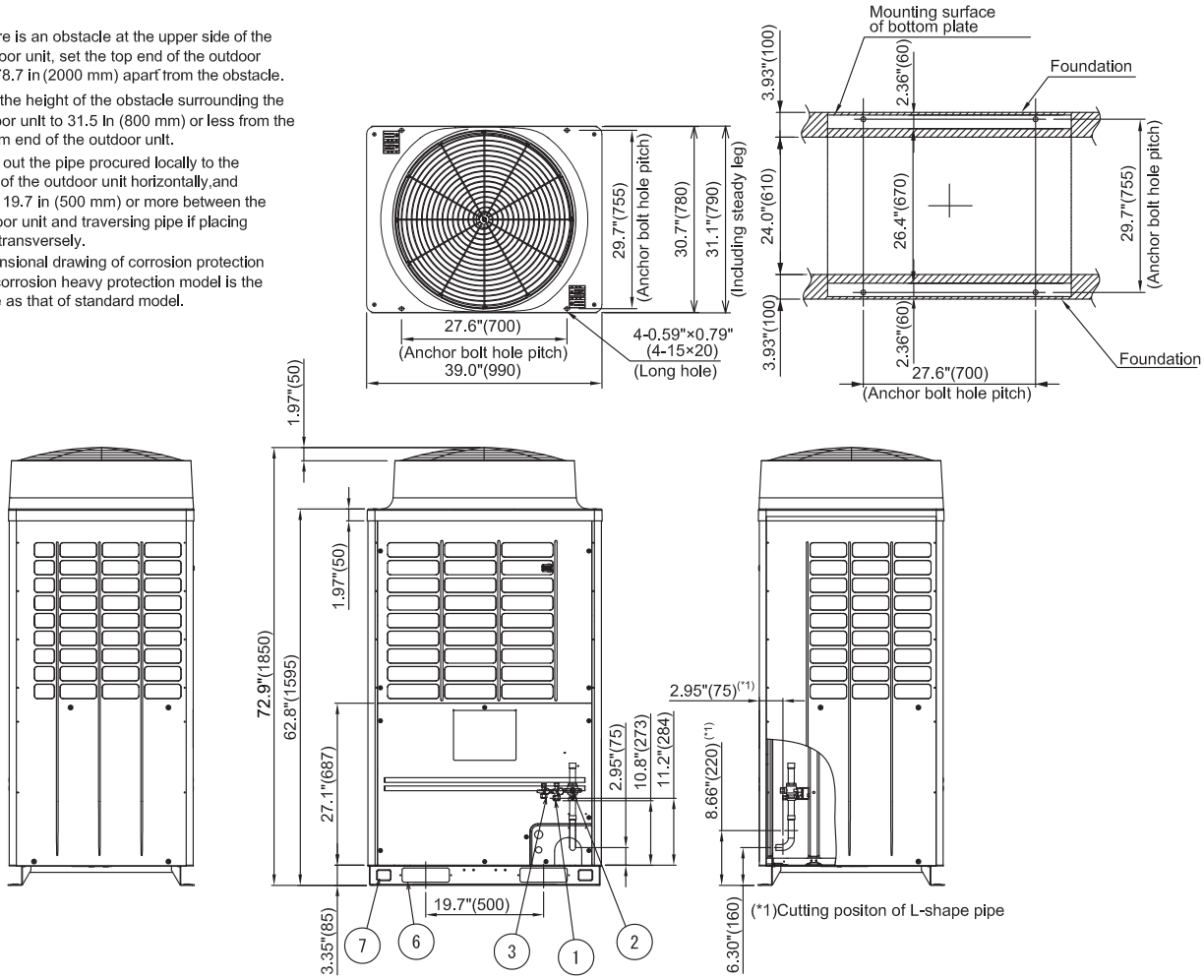
5-2-2-1. Single unit

Model: MMY-MAP0724HT9UL, MAP0724HT6UL

(Unit:in (mm))

(Note)

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 78.7 in (2000 mm) apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 31.5 In (800 mm) or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally,and keep 19.7 in (500 mm) or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.



No	Parts name	Remarks
①	Liquid pipe connection port	Φ1/2"(12.7)
②	Gas pipe connection port	Φ8/9"(22.2)
③	Balance pipe connection port	Φ3/8"(9.5)
④	Knockout hole for power wiring	Φ1.36"(34.5)
⑤	Knockout hole for control wiring	Φ1.06"(27)
⑥	Rectangular hole (for freight handling)	4-2.36"×7.87"(4-60X200)
⑦	Square hole (for hanging)	4-1.58"×2.17"(4-40X55)

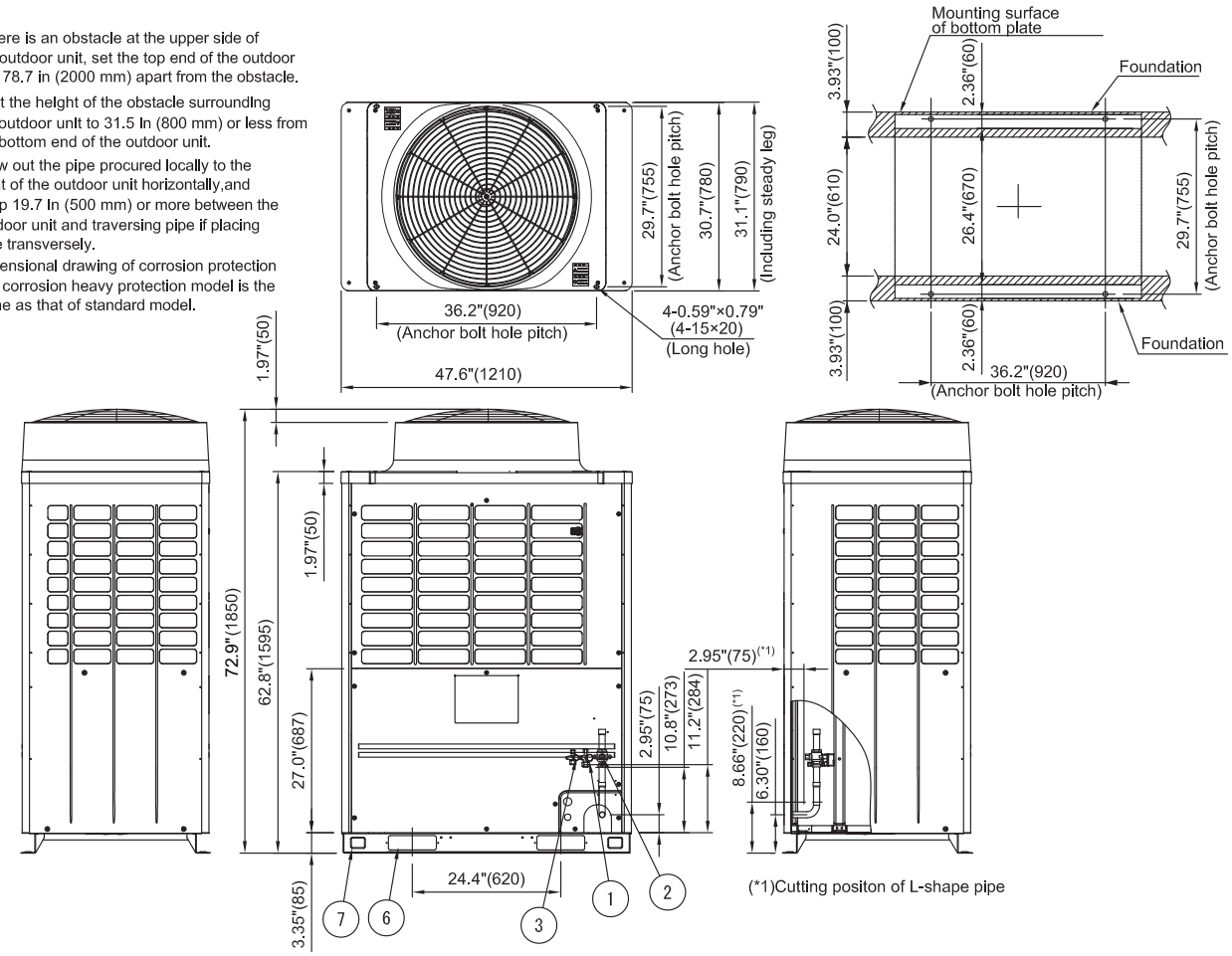
a	≥ 19.7"(500)
b	≥ 23.6"(600)
c	≥ 70.1"(1780)
d	≥ 39.8"(1010)
e	≥ 0.39"(10)
g	≥ 39.4"(1000)
h	≤ 31.5"(800)

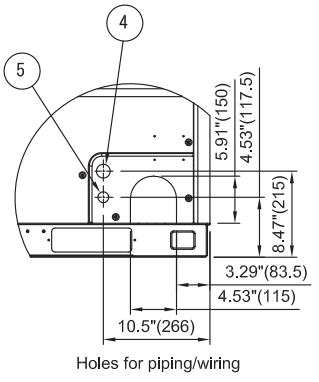
Model: MMY-MAP0964HT9UL, MAP0964HT6UL
MMY-MAP1144HT9UL, MAP1144HT6UL

(Unit:in (mm))

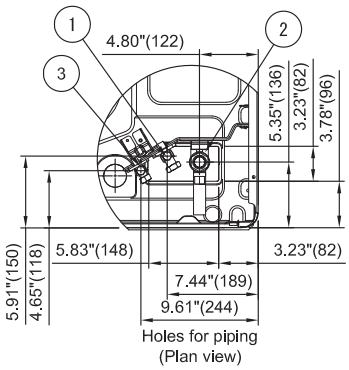
(Note)

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 78.7 in (2000 mm) apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 31.5 in (800 mm) or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally,and keep 19.7 in (500 mm) or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.

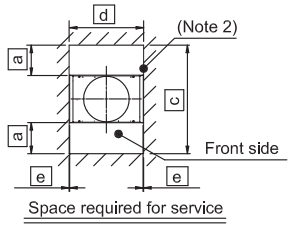


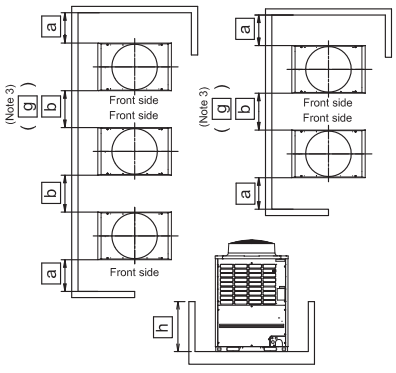


Holes for piping/wiring



Holes for piping
(Plan view)





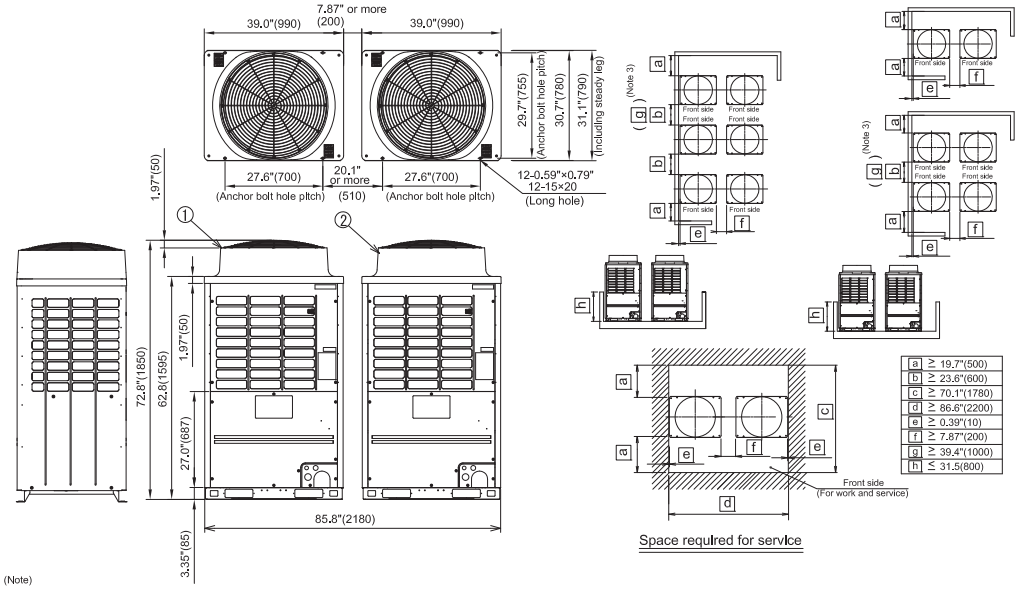
No	Parts name	Remarks
①	Liquid pipe connection port	Φ1/2"(15.9)
②	Gas pipe connection port	Φ7/8"(28.6)
③	Balance pipe connection port	Φ3/8"(9.5)
④	Knockout hole for power wiring	Φ1.36"(34.5)
⑤	Knockout hole for control wiring	Φ1.06"(27)
⑥	Rectangular hole (for freight handling)	4-2.36"×7.87"(4-60X200)
⑦	Square hole (for hanging)	4-1.57"×2.17"(4-40X55)

a	≥ 19.7"(500)
b	≥ 23.6"(600)
c	≥ 70.1"(1780)
d	≥ 48.4"(1230)
e	≥ 0.39"(10)
g	≥ 39.4"(1000)
h	≤ 31.5"(800)

5-2-2-2. Combination

Model	Outdoor unit	
	(1) Header unit	(2) Follower unit
MMY-AP1444HT9UL	MMY-MAP0724HT9UL	MMY-MAP0724HT9UL
MMY-AP1444HT6UL	MMY-MAP0724HT6UL	MMY-MAP0724HT6UL

Two units connected

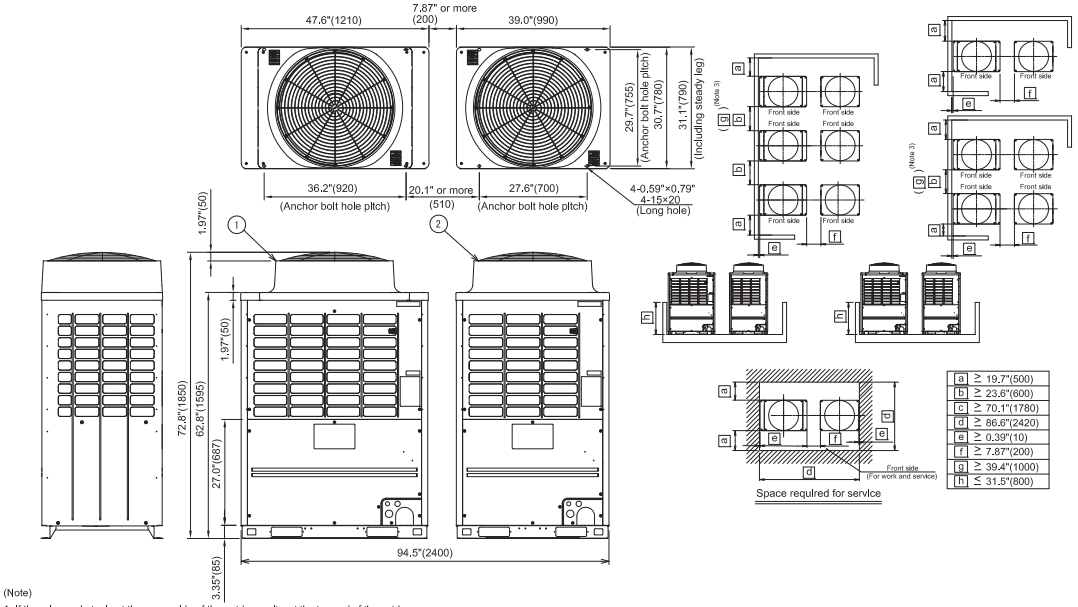


(Note)
1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 78.7" in (2000 mm) apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 31.5" in (800 mm) or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally,and keep 19.7" in (500 mm) or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Arrange each outdoor unit in order of its capacity.
(Header unit ① ≥ Follower unit ②)
5. Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.

(Unit:in (mm))

Model	Outdoor unit	
	(1) Header unit	(2) Follower unit
MMY-AP1684HT9UL	MMY-MAP0964HT9UL	MMY-MAP0724HT9UL
MMY-AP1684HT6UL	MMY-MAP0964HT6UL	MMY-MAP0724HT6UL

Two units connected

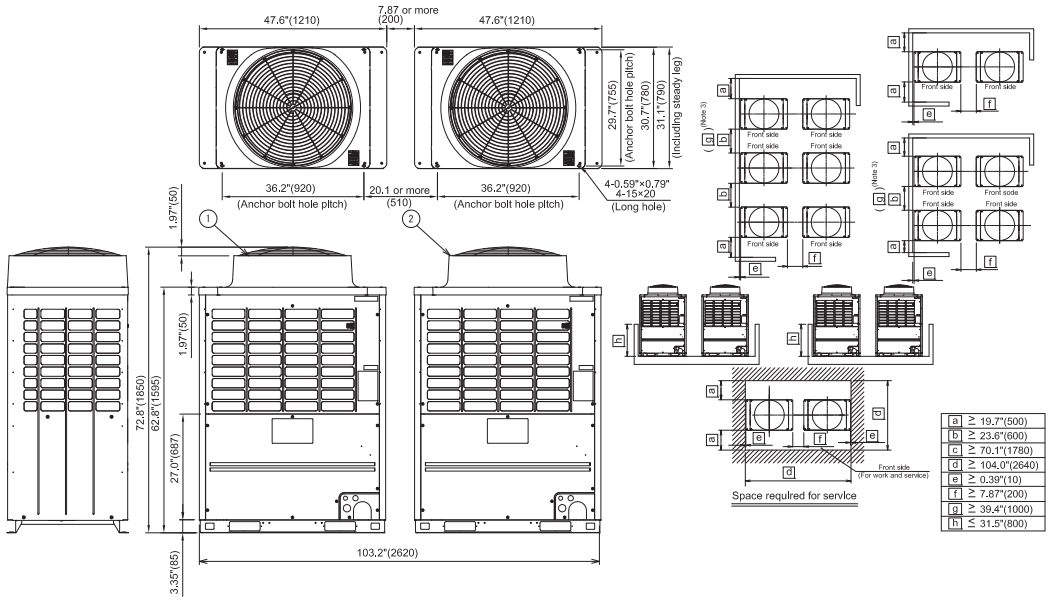


(Note)
1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 78.7" in (2000 mm) apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 31.5" in (800 mm) or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally,and keep 19.7" in (500 mm) or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Arrange each outdoor unit in order of its capacity.
(Header unit ① ≥ Follower unit ②)
5. Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.

(Unit:in (mm))

Model	Outdoor unit	
	(1) Header unit	(2) Follower unit
MMY-AP1924HT9UL	MMY-MAP0964HT9UL	MMY-MAP0964HT9UL
MMY-AP1924HT6UL	MMY-MAP0964HT6UL	MMY-MAP0964HT6UL
MMY-AP2284HT9UL	MMY-MAP1144HT9UL	MMY-MAP1144HT9UL
MMY-AP2284HT6UL	MMY-MAP1144HT6UL	MMY-MAP1144HT6UL

Two units connected

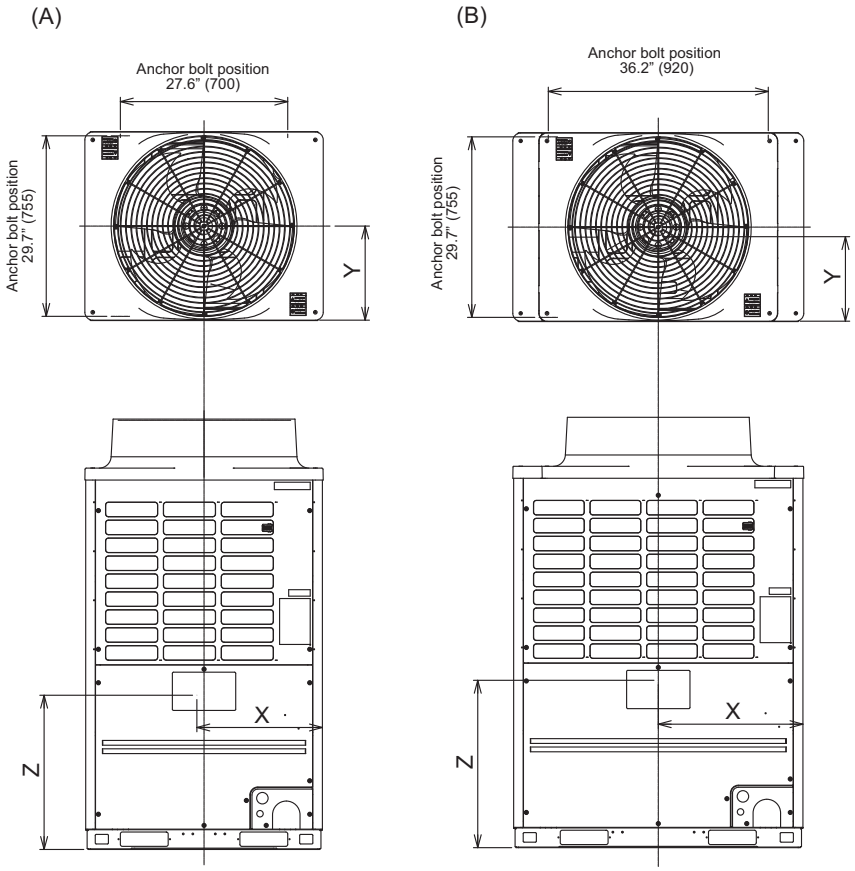


(Note)

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 78.7" in (2000 mm) apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 31.5" in (800 mm) or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally,and keep 19.7" in (500 mm) or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Arrange each outdoor unit in order of its capacity. (Header unit ① ≥ Follower unit ②)
5. Dimensional drawing of corrosion protection and corrosion heavy protection model is the same as that of standard model.

(Unit:in (mm))

5-3. Center of gravity



Unit: in (mm)

Heat recovery

No.	Model type	X (in (mm))	Y (in (mm))	Z (in (mm))	Weight (lbs (kg))
(A)	MAP0724FT9UL	19.3" (490)	14.6" (370)	26.8" (680)	583 (264)
	MAP0724FT6UL	20.9" (530)	15.7" (400)	25.8" (655)	658 (298)
(B)	MAP0964FT9UL	23.2" (590)	13.8" (350)	27.6" (700)	751 (340)
	MAP1204FT9UL				
	MAP0964FT6UL	25.6" (650)	15.4" (390)	25.6" (650)	826 (374)
	MAP1204FT6UL				

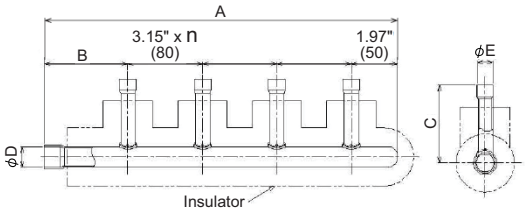
Heat pump

No.	Model type	X (in (mm))	Y (in (mm))	Z (in (mm))	Weight (lbs (kg))
(A)	MAP0724HT9UL	19.7" (500)	15.4" (390)	25.4" (645)	546 (247)
	MAP0724HT6UL	21.3" (540)	15.8" (400)	24.4" (620)	621 (281)
(B)	MAP0964HT9UL	23.8" (605)	13.8" (350)	27.6" (700)	742 (336)
	MAP1144HT9UL				
	MAP0964HT6UL	25.8" (655)	15.4" (390)	25.6" (650)	817 (370)
	MAP1144HT6UL				

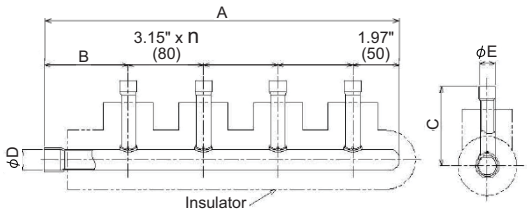
5-4. Branch header / branch joint

• Branch header (Heat recovery)
RBM-HY1043FUL, HY1083FUL, HY2043FUL, HY2083FUL

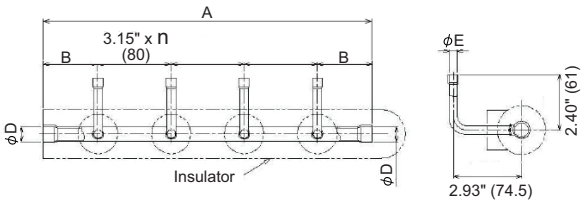
Suction gas side



Discharge gas side



Liquid side

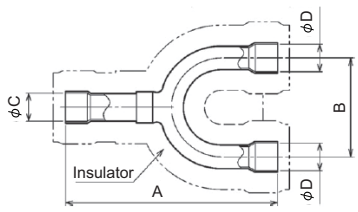


Unit:in (mm)

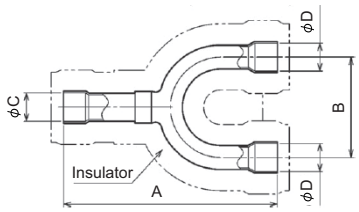
Model		A	B	C	ϕD	ϕE	n	Accessory socket Qty
RBM-HY1043FUL	Suction gas side	15.0" (380)	3.54" (90)	3.29" (83.6)	7/8" (22.2)	5/8" (15.9)	3	⑥ x 3, ⑨ x 4, ⑭ x 1, ⑦⓪ x 1
	Discharge gas side	15.0" (380)	3.54" (90)	3.29" (83.6)	7/8" (22.2)	5/8" (15.9)	3	⑥ x 4, ⑨ x 4, ⑱ x 1, ⑧⑤ x 1
	Liquid side	13.0" (330)	1.77" (45)	–	5/8" (15.9)	3/8" (9.5)	3	① x 4, ⑥ x 1, ⑨ x 1
RBM-HY1043FUL	Suction gas side	27.6" (700)	3.54" (90)	3.29" (83.6)	7/8" (22.2)	5/8" (15.9)	7	⑥ x 7, ⑨ x 8, ⑭ x 1, ⑦⓪ x 1
	Discharge gas side	27.6" (700)	3.54" (90)	3.29" (83.6)	7/8" (22.2)	5/8" (15.9)	7	⑥ x 8, ⑨ x 8, ⑱ x 1, ⑧⑤ x 1
	Liquid side	25.6" (650)	1.77" (45)	–	5/8" (15.9)	3/8" (9.5)	7	① x 8, ⑥ x 1, ⑨ x 1
RBM-HY1043FUL	Suction gas side	15.2" (385.5)	3.76" (95.5)	3.52" (89.3)	1-1/4" (31.8)	5/8" (15.9)	3	⑥ x 2, ⑨ x 2, ㉗ x 1, ⑤⑨ x 1
	Discharge gas side	15.0" (380)	3.54" (90)	3.29" (83.6)	7/8" (22.2)	5/8" (15.9)	3	⑨ x 4, ⑦⓪ x 1
	Liquid side	13.0" (330)	1.77" (45)	–	5/8" (15.9)	3/8" (9.5)	3	① x 2, ⑤① x 1
RBM-HY1043FUL	Suction gas side	27.8" (705.5)	3.76" (95.5)	3.52" (89.3)	1-1/4" (31.8)	5/8" (15.9)	7	⑥ x 7, ⑨ x 7, ㉗ x 1, ⑤⑨ x 1
	Discharge gas side	27.6" (700)	3.54" (90)	3.29" (83.6)	7/8" (22.2)	5/8" (15.9)	7	⑨ x 8, ⑦⓪ x 1
	Liquid side	25.6" (650)	1.77" (45)	–	5/8" (15.9)	3/8" (9.5)	7	① x 7, ⑤① x 1

• Y-shape branch joint (Heat recovery)
RBM-BY55FUL, BY105FUL, BY205FUL

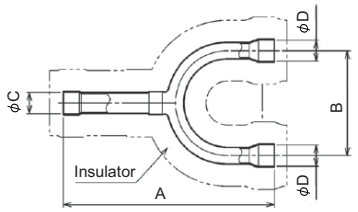
Suction gas side



Discharge gas side



Liquid side



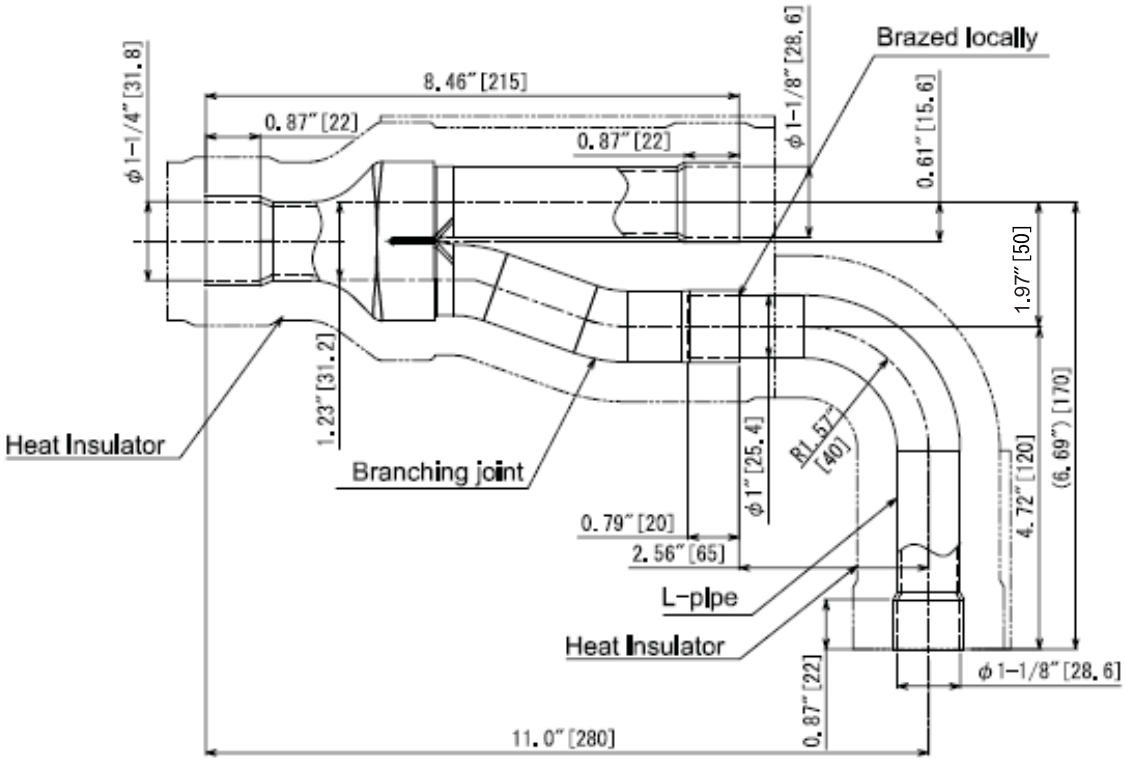
Unit:in (mm)

Model		A	B	ϕC	ϕD	Accessory socket Qty
RBM-BY55FUL	Suction gas side	6.30" (160)	3.15" (80)	5/8" (15.9)	5/8" (15.9)	⑨① x 2
	Discharge gas side	6.30" (160)	3.15" (80)	5/8" (15.9)	5/8" (15.9)	⑨ x 3
	Liquid side	5.12" (130)	2.76" (70)	3/8" (9.5)	3/8" (9.5)	① x 2
RBM-BY105FUL	Suction gas side	6.69" (170)	3.15" (80)	7/8" (22.2)	7/8" (22.2)	⑭ x 2, ⑦⓪ x 2, ⑨① x 1
	Discharge gas side	6.69" (170)	3.15" (80)	7/8" (22.2)	7/8" (22.2)	⑱ x 1, ⑨③ x 2
	Liquid side	6.30" (160)	3.15" (80)	5/8" (15.9)	5/8" (15.9)	⑨ x 1, ⑨① x 1, ⑨② x 1
RBM-BY205FUL	Suction gas side	7.87" (200)	3.15" (80)	1-1/4" (31.8)	1-1/8" (28.6)	⑯ x 1, ㉗ x 1, ④③ x 2, ⑤⑧ x 1, ⑤⑨ x 1, ⑨① x 1
	Discharge gas side	6.69" (170)	3.15" (80)	7/8" (22.2)	7/8" (22.2)	⑱ x 2, ⑦⓪ x 2, ⑨③ x 1
	Liquid side	6.30" (160)	3.15" (80)	5/8" (15.9)	5/8" (15.9)	⑨ x 1, ⑤① x 1, ⑨② x 1

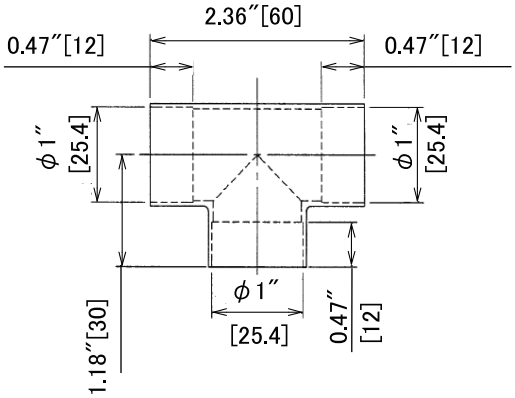
• **Branching joint for connection of outdoor units (Heat recovery)**
RBM-BT14FUL

Suction gas side

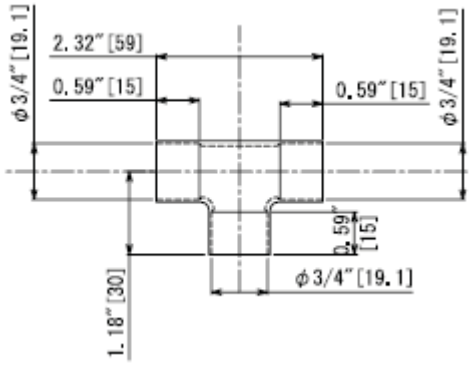
Unit:in (mm)



Discharge gas side



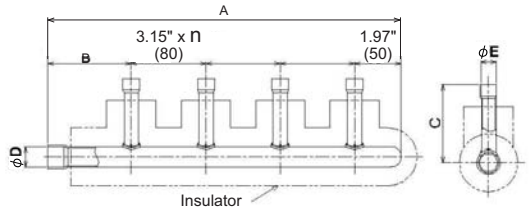
Liquid side



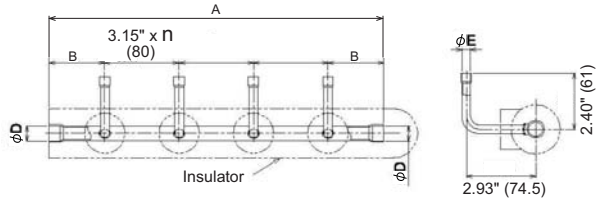
Model		Accessory socket Qty
RBM-BT14FUL	Suction gas side	㉗ x 1, ㊸ x 2, ㊾ x 1
	Discharge gas side	⑲ x 2, ㉒ x 1, ㊼ x 1
	Liquid side	⑩ x 2, ⑬ x 1

• Branch header (Heat pump)
RBM-HY1043UL, HY1083UL, HY2043UL, HY2083UL

Gas side



Liquid side

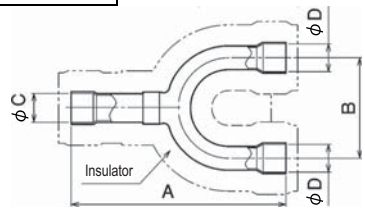


Unit:in (mm)

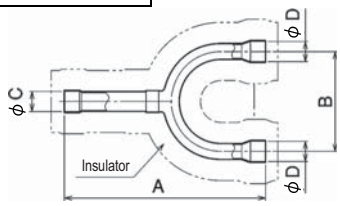
Model		A	B	C	ϕD	ϕE	n	Accessory socket Qty
RBM-HY1043UL	Gas side	15.0" (380)	3.54" (90)	3.29" (83.6)	7/8" (22.2)	5/8" (15.9)	3	⑥ x 4, ⑨ x 4, ⑭ x 1, ⑱ x 1, ⑦⓪ x 1
	Liquid side	13.0" (330)	1.77" (45)	–	5/8" (15.9)	3/8" (9.5)	3	① x 4, ⑥ x 1, ⑨ x 1
RBM-HY1083UL	Gas side	27.6" (700)	3.54" (90)	3.29" (83.6)	7/8" (22.2)	5/8" (15.9)	7	⑥ x 8, ⑨ x 8, ⑭ x 1, ⑱ x 1, ⑦⓪ x 1
	Liquid side	25.6" (650)	1.77" (45)	–	5/8" (15.9)	3/8" (9.5)	7	① x 8, ⑥ x 1, ⑨ x 1
RBM-HY2043UL	Gas side	15.2" (385.5)	3.76" (95.5)	3.52" (89.3)	1-1/4" (31.8)	5/8" (15.9)	3	⑥ x 2, ⑨ x 2, ㉗ x 1, ㊾ x 1
	Liquid side	13.0" (330)	1.77" (45)	–	5/8" (15.9)	3/8" (9.5)	3	① x 2
RBM-HY2083UL	Gas side	27.8" (705.5)	3.76" (95.5)	3.52" (89.3)	1-1/4" (31.8)	5/8" (15.9)	7	⑥ x 7, ⑨ x 7, ㉗ x 1, ㊾ x 1
	Liquid side	25.6" (680)	1.77" (45)	–	5/8" (15.9)	3/8" (9.5)	7	① x 7

• Y-shape branch joint (Heat pump)
RBM-BY55UL, BY105UL, BY205UL

Gas side



Liquid side



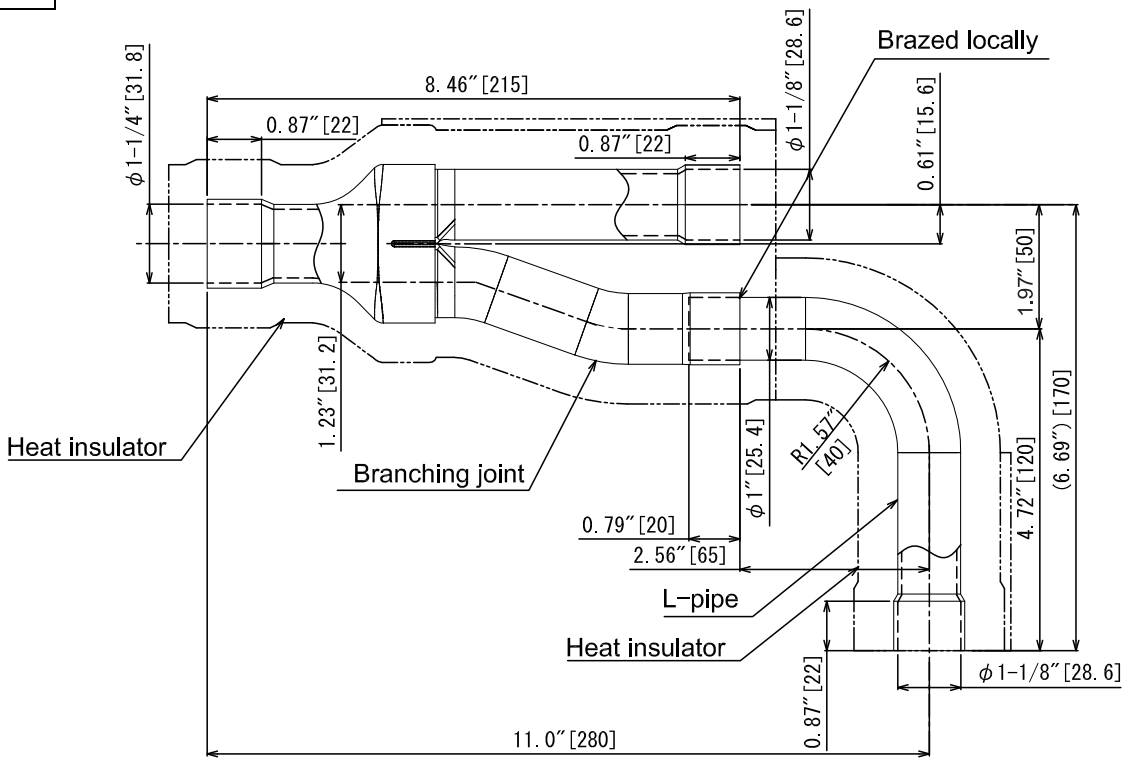
Unit:in (mm)

RBM-		A	B	ϕC	ϕD	Accessory socket Qty
BY55UL	Gas side	6.30" (160)	3.15" (80)	5/8" (15.9)	5/8" (15.9)	⑨ x 1, ⑤① x 2, ⑨① x 1
	Liquid side	5.12" (130)	2.76" (70)	3/8" (9.5)	3/8" (9.5)	① x 2
BY105UL	Gas side	6.69" (170)	3.15" (80)	7/8" (22.2)	7/8" (22.2)	⑭ x 21, ⑦⓪ x 2, ⑨① x 1
	Liquid side	6.30" (160)	3.15" (80)	5/8" (15.9)	5/8" (15.9)	⑨ x 1, ⑨① x 1, ⑨② x 1
BY205UL	Gas side	7.87" (200)	3.15" (80)	1-1/4" (31.8)	1-1/8" (28.6)	⑯ x 1, ㉗ x 1, ㊸ x 2, ㊽ x 1, ㊾ x 1, ⑨① x 1
	Liquid side	6.30" (160)	3.15" (80)	5/8" (15.9)	5/8" (15.9)	⑨ x 1, ⑤① x 2, ⑨② x 1

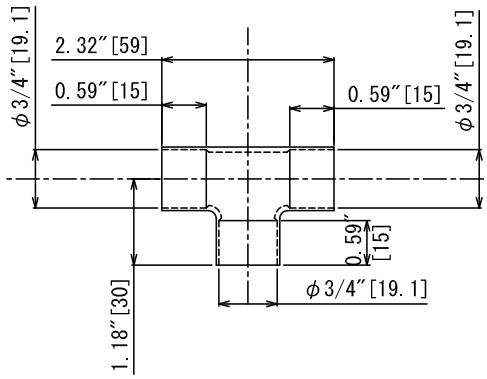
• **Branching joint for connection of outdoor units (Set of two joints) (Heat pump)**
RBM-BT14UL

Gas side

Unit:in (mm)



Liquid side

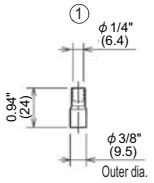


RBM-BT14UL	
	Accessory socket Qty
Gas side	㉗ x 1, ㊸ x 2, ㊾ x 1,
Liquid side	⑩ x 2, ⑬ x 1

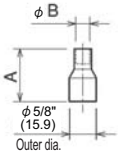
• Accessory socket

Unit:in(mm)

①

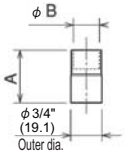


⑥⑨⑤1



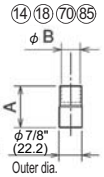
	A	ϕB
⑥	1.26" (32)	3/8" (9.5)
⑨	1.10" (28)	1/2" (12.7)
⑤1	1.48" (37.5)	3/4" (19.1)

⑩⑬



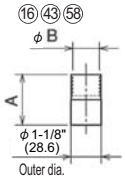
	A	ϕB
⑩	1.42" (36)	1/2" (12.7)
⑬	1.30" (33)	5/8" (15.9)

⑭⑱⑦⓪⑧⑤



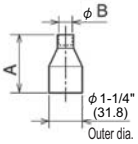
	A	ϕB
⑭	1.57" (40)	5/8" (15.9)
⑱	1.57" (40)	3/4" (19.1)
⑦⓪	2.13" (54)	1-1/8" (28.6)
⑧⑤	1.61" (41)	1/2" (12.7)

⑯④③⑤⑧



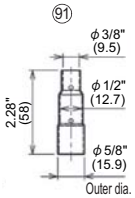
	A	ϕB
⑯	1.97" (50)	5/8" (15.9)
④③	1.97" (50)	7/8" (22.2)
⑤⑧	2.44" (62)	1-3/8" (34.9)

②⑦⑤⑨

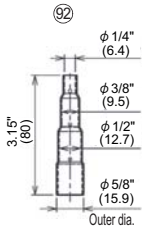


	A	ϕB
②⑦	1.93" (49)	1-1/8" (28.6)
⑤⑨	2.32" (59)	1-3/8" (34.9)

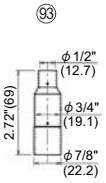
⑨1



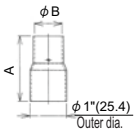
⑨②



⑨③

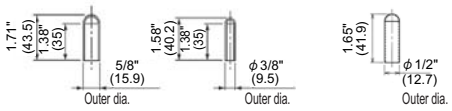


⑲②②⑤⑦



	A	ϕB
⑲	1.81" (46)	3/4" (19.1)
②②	1.73" (44)	7/8" (22.2)
⑤⑦	2.05" (52)	1-1/8" (28.6)

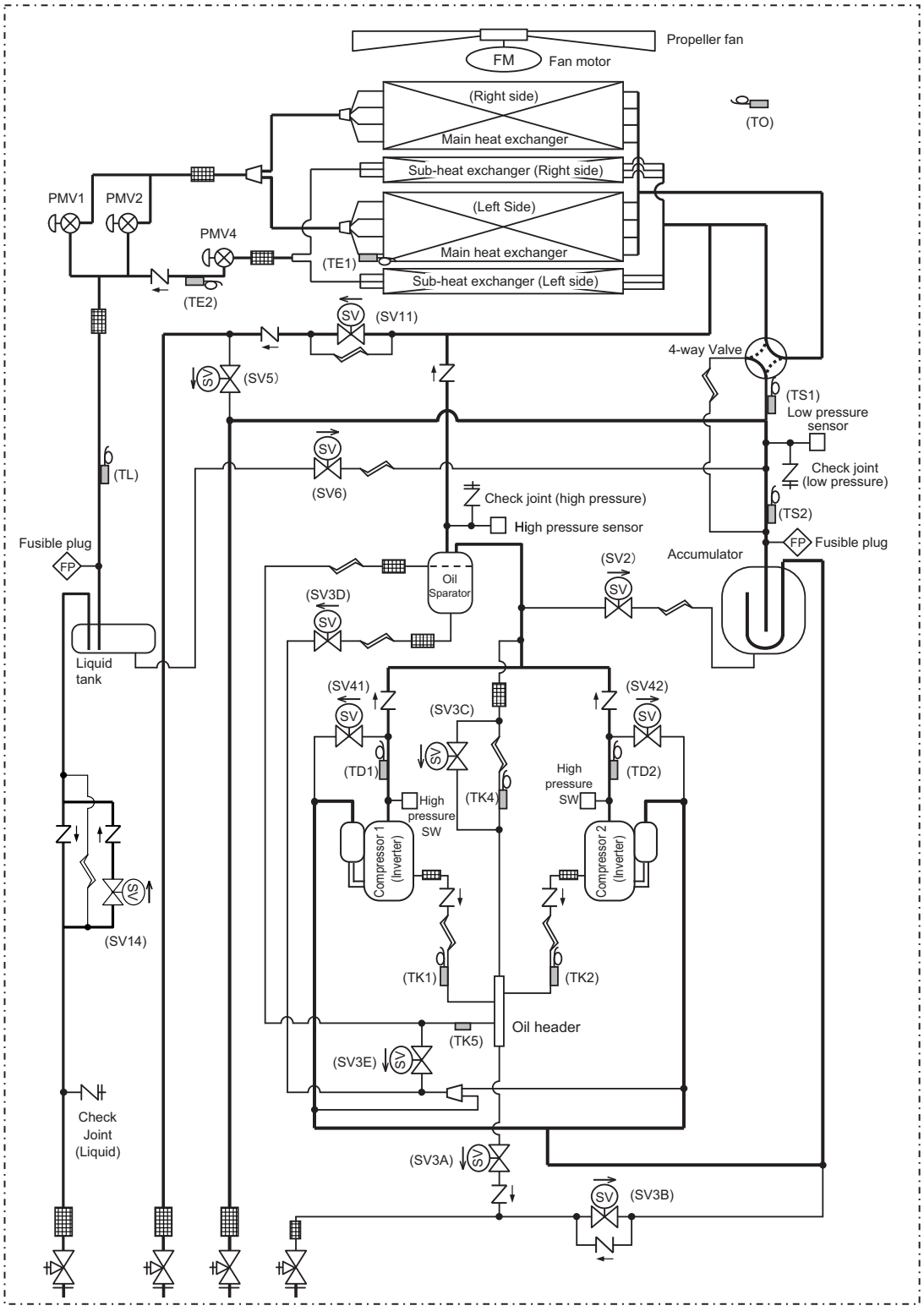
Sealed pipe



5-5. Refrigerant cycle diagram

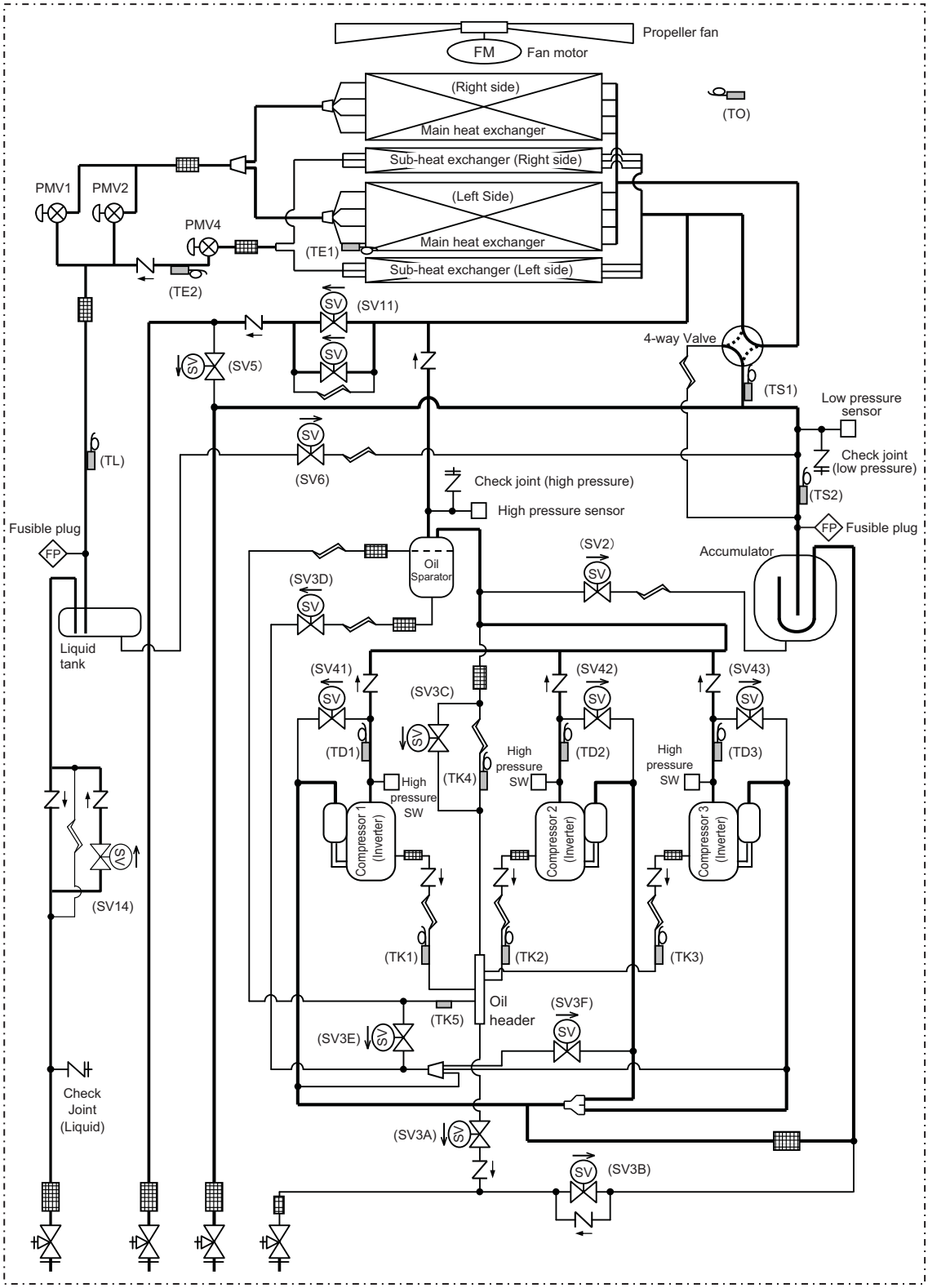
5-5-1. Heat recovery

Model : MMY-MAP0724FT*



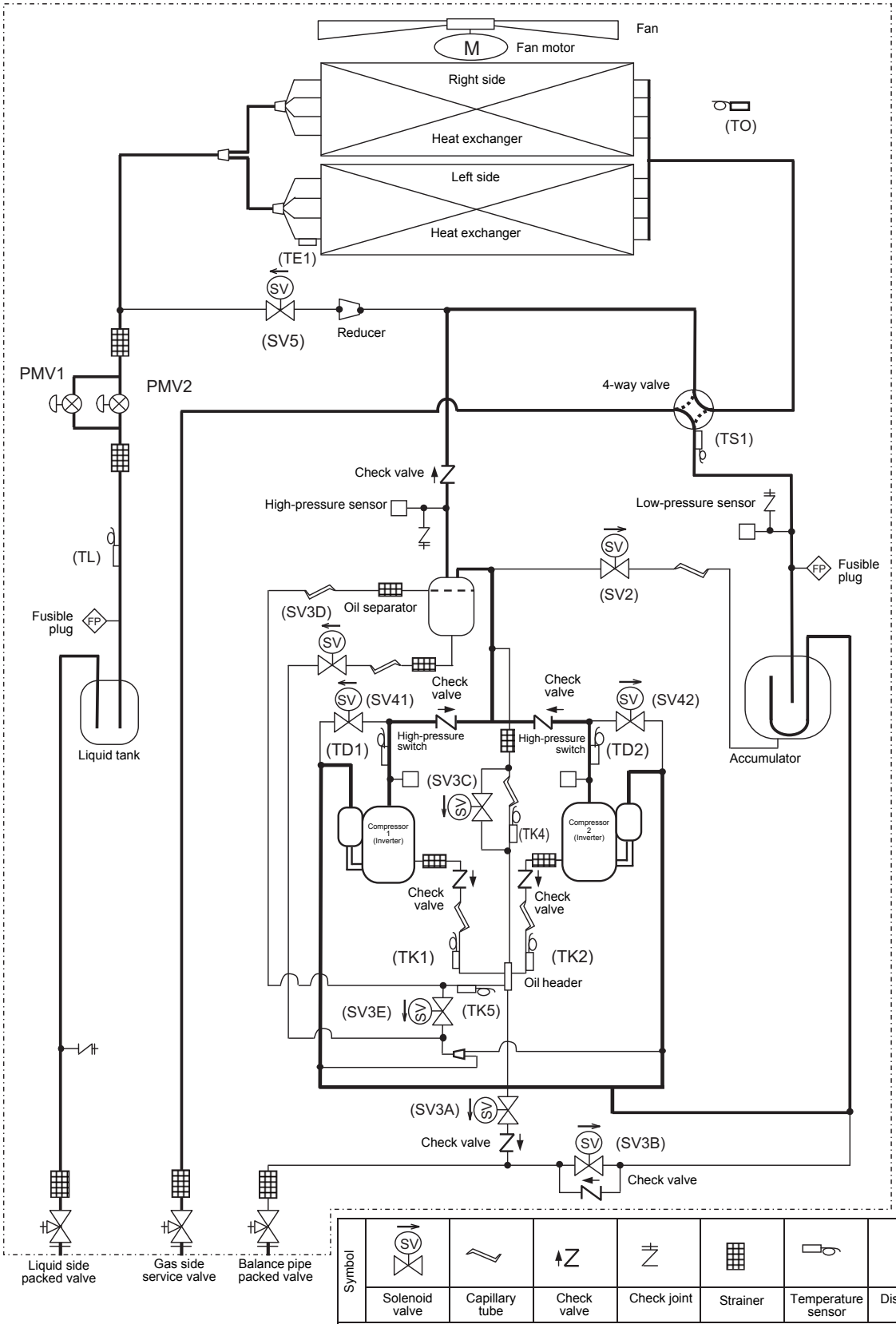
Symbol	Solenoid Valve	Capillary Tube	Check Valve	Check Joint	Strainer	Temperature Sensor	Distributor

Model : MMY-MAP0964FT*, MMY-MAP1204FT*

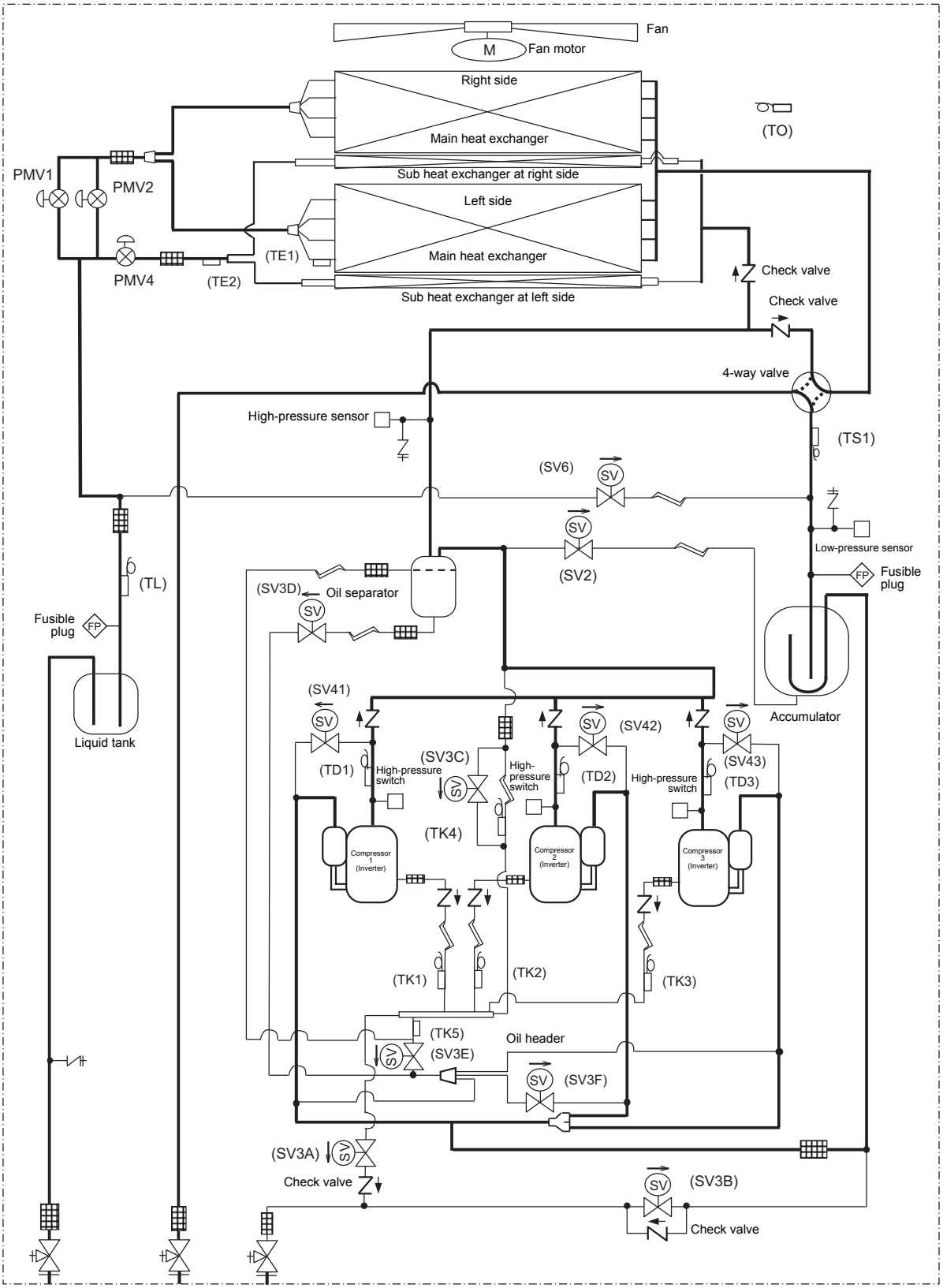


5-5-2. Heat pump

Model: MMY-MAP0724HT*



Model: MMY-MAP0964HT*, MMY-MAP1144HT*

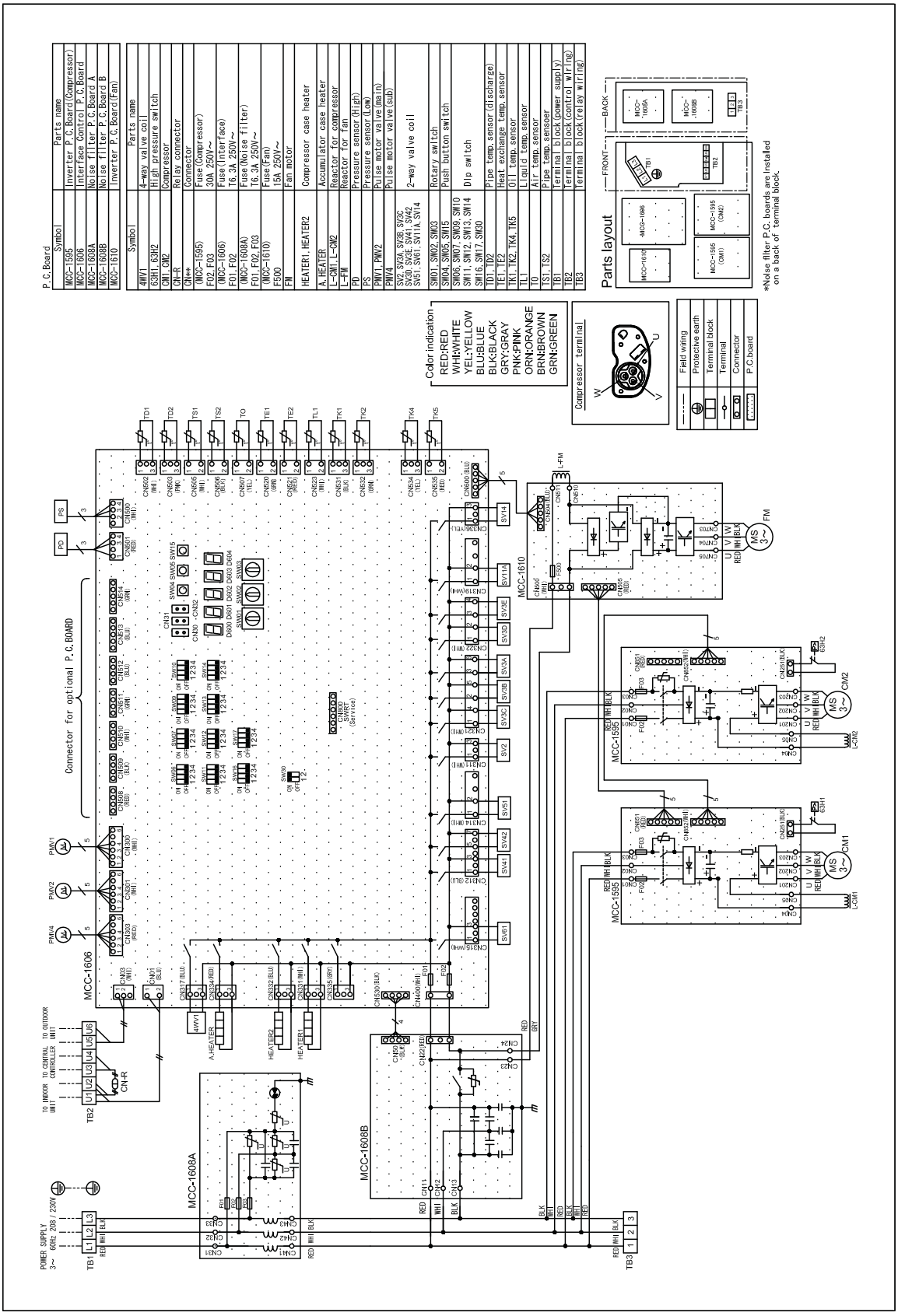


Symbol	SV						
	Solenoid valve	Capillary tube	Check valve	Check joint	Strainer	Temperature sensor	Distributor

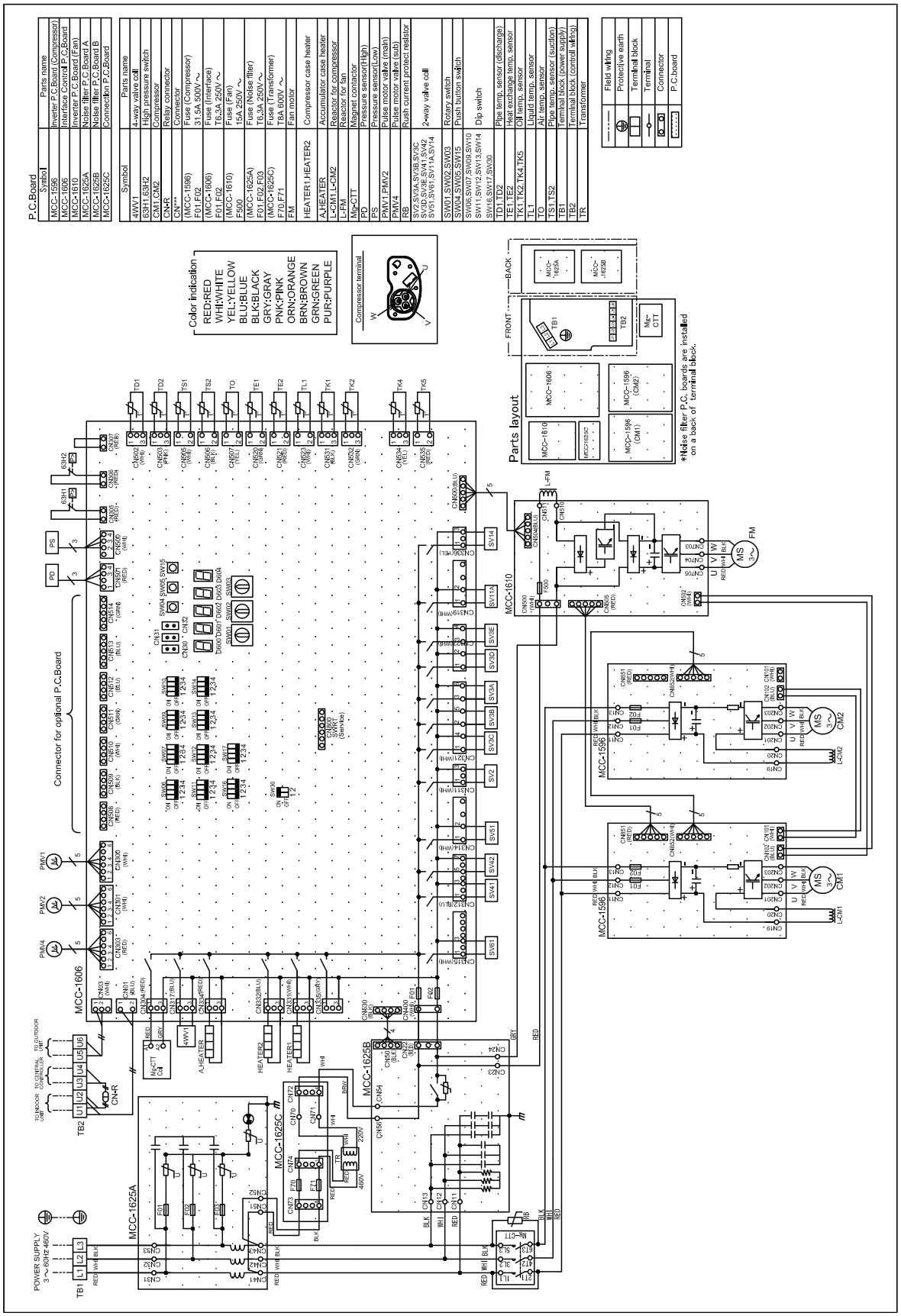
5-6. Wiring diagram

5-6-1. Heat recovery

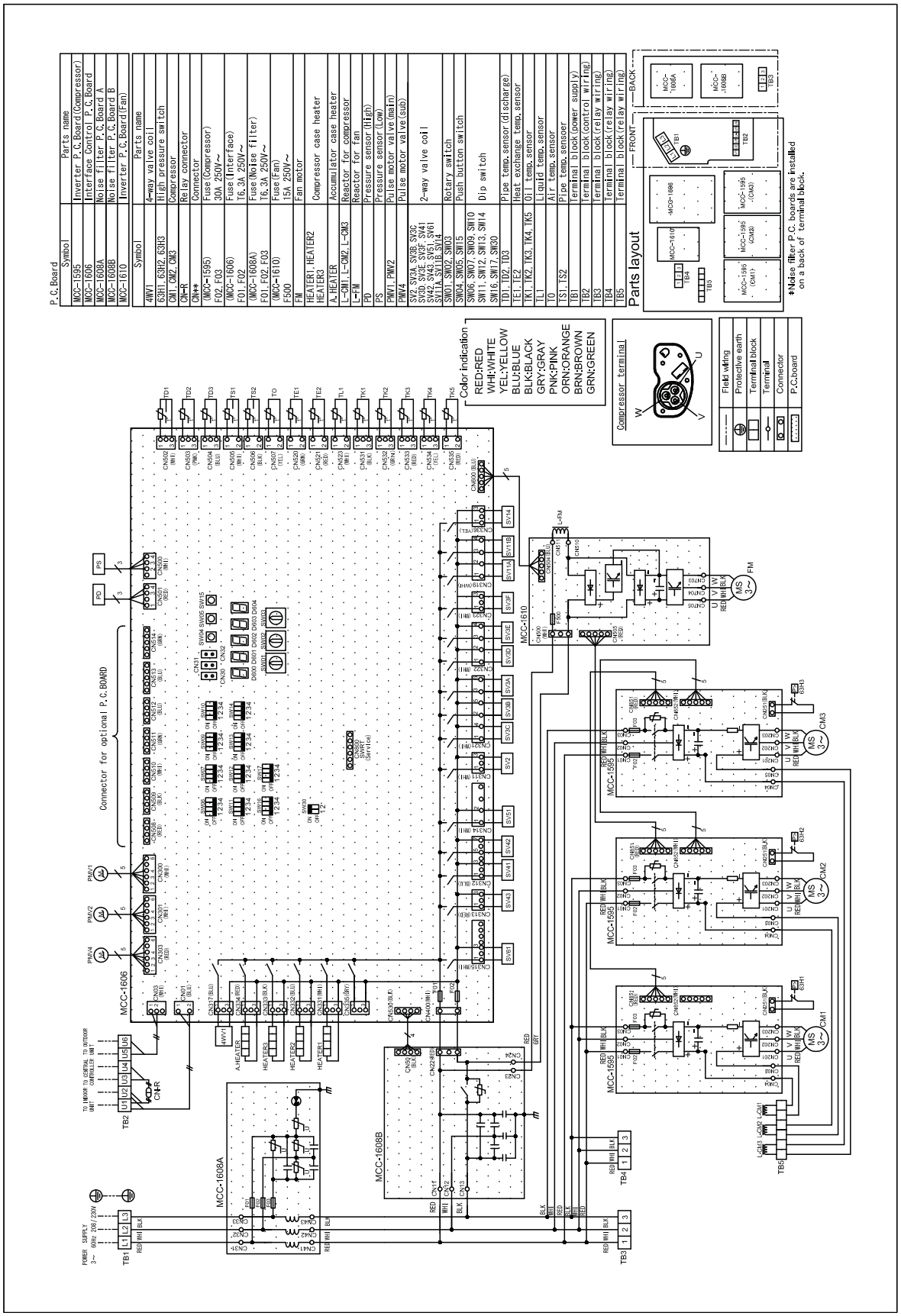
Model: MMY-MAP0724FT9UL (208 / 230 V, 60 Hz)



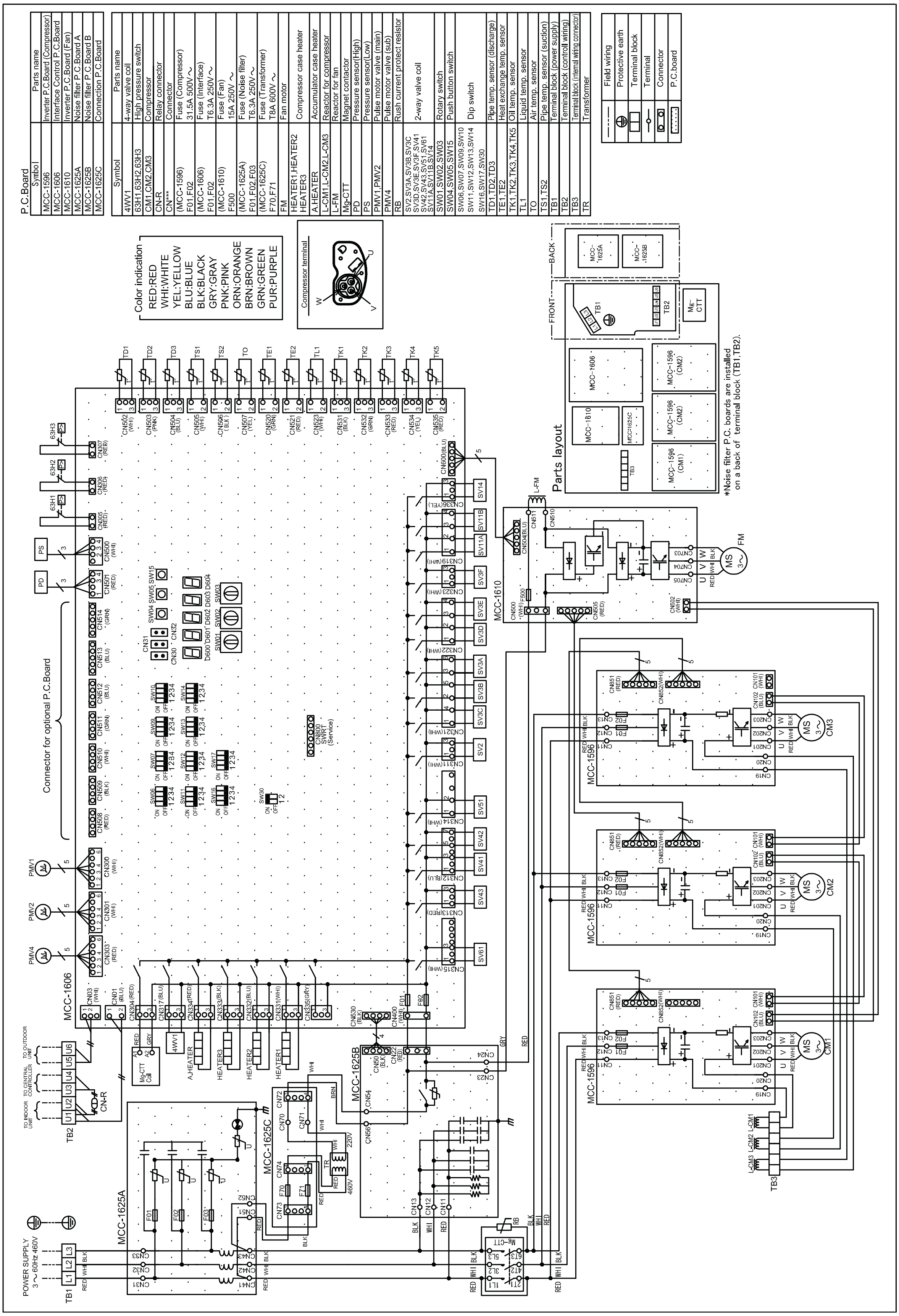
Model: MMY-MAP0724FT6UL (460 V, 60 Hz)



Model: MMY-MAP0964FT9UL, MAP1204FT9UL (208 / 230 V, 60 Hz)



Model: MMY-MAP0964FT6UL, MAP1204FT6UL (460 V, 60 Hz)



P.C.Board

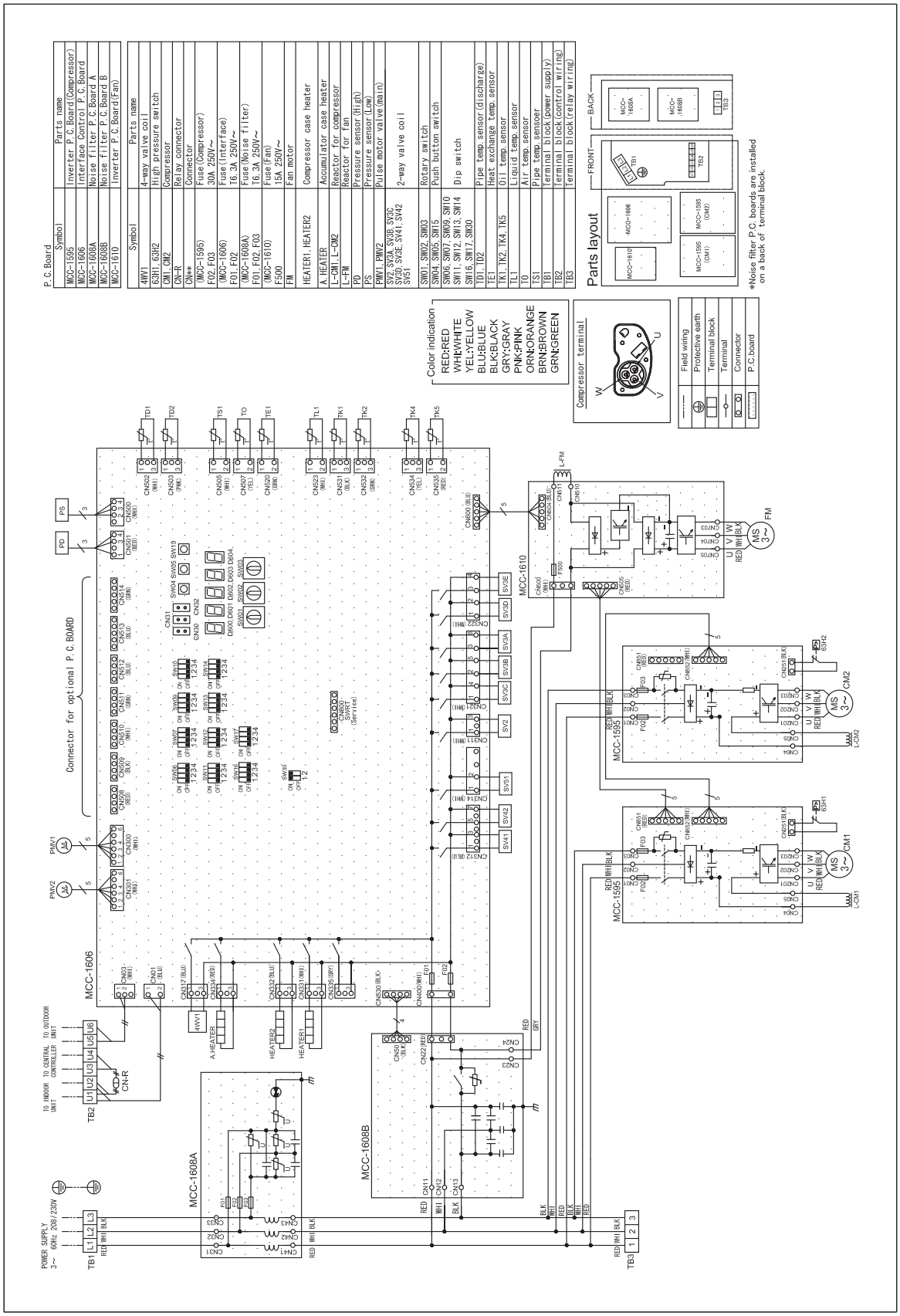
Symbol	Parts name
MCC-1596	Inverter P.C.Board (Compressor)
MCC-1606	Interface Control P.C.Board
MCC-1610	Inverter P.C.Board (Fan)
MCC-1625A	Noise filter P.C.Board A
MCC-1625B	Noise filter P.C.Board B
MCC-1625C	Connection P.C.Board

Symbol	Parts name
4WV1	4-way valve coil
63H1,63H2,63H3	High pressure switch
CM1,CM2,CM3	Compressor
CN-R	Relay connector
CN***	Connector
(MCC-1596) F01,F02	Fuse (Compressor) 31.5A 500V～
(MCC-1606) F01,F02	Fuse (Interface) T6.3A 250V～
(MCC-1610) F500	Fuse (Fan) 15A 250V～
(MCC-1625A) F01,F02,F03	Fuse (Noise filter) T6.3A 250V～
(MCC-1625C) F70,F71	Fuse (Transformer) T8A 600V～
FM	Fan motor
HEATER1,HEATER2 HEATER3	Compressor case heater
A.HEATER	Accumulator case heater
L-CM1,L-CM2,L-CM3	Reactor for compressor
L-FM	Reactor for fan
Mg-CTT	Magnet contactor
PD	Pressure sensor(High)
PS	Pressure sensor(Low)
PMV1,PMV2	Pulse motor valve (main)
PMV4	Pulse motor valve (sub)
RB	Rush current protect resistor
SV2,SV3A,SV3B,SV3C SV3D,SV3E,SV3F,SV41 SV42,SV43,SV51,SV61 SV11A,SV11B,SV14	2-way valve coil
SW01,SW02,SW03	Rotary switch
SW04,SW05,SW15	Push button switch
SW06,SW07,SW09,SW10 SW11,SW12,SW13,SW14 SW16,SW17,SW30	Dip switch
TD1,TD2,TD3	Pipe temp. sensor (discharge)
TE1,TE2	Heat exchange temp. sensor
TK1,TK2,TK3,TK4,TK5	Oil temp. sensor
TL1	Liquid temp. sensor
TO	Air temp. sensor
TS1,TS2	Pipe temp. sensor (suction)
TB1	Terminal block (power supply)
TB2	Terminal block (controll wiring)
TB3	Terminal block (internal wiring connector)
TR	Transformer

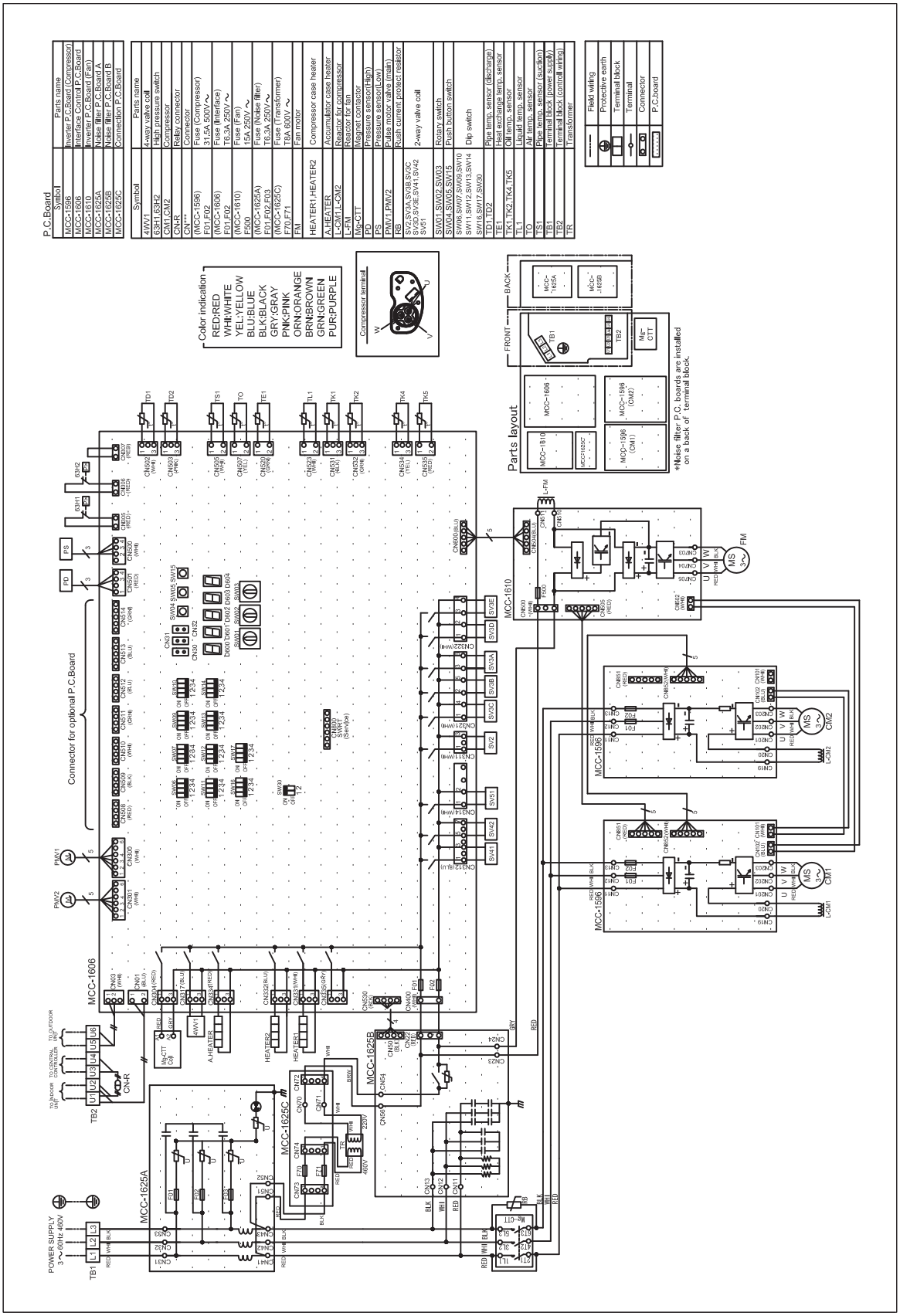
Symbol	Meaning
- - -	Field wiring
⏚	Protective earth
▭	Terminal block
—o—	Terminal
▭	Connector
⋯	P.C.board

5-6-2. Heat pump

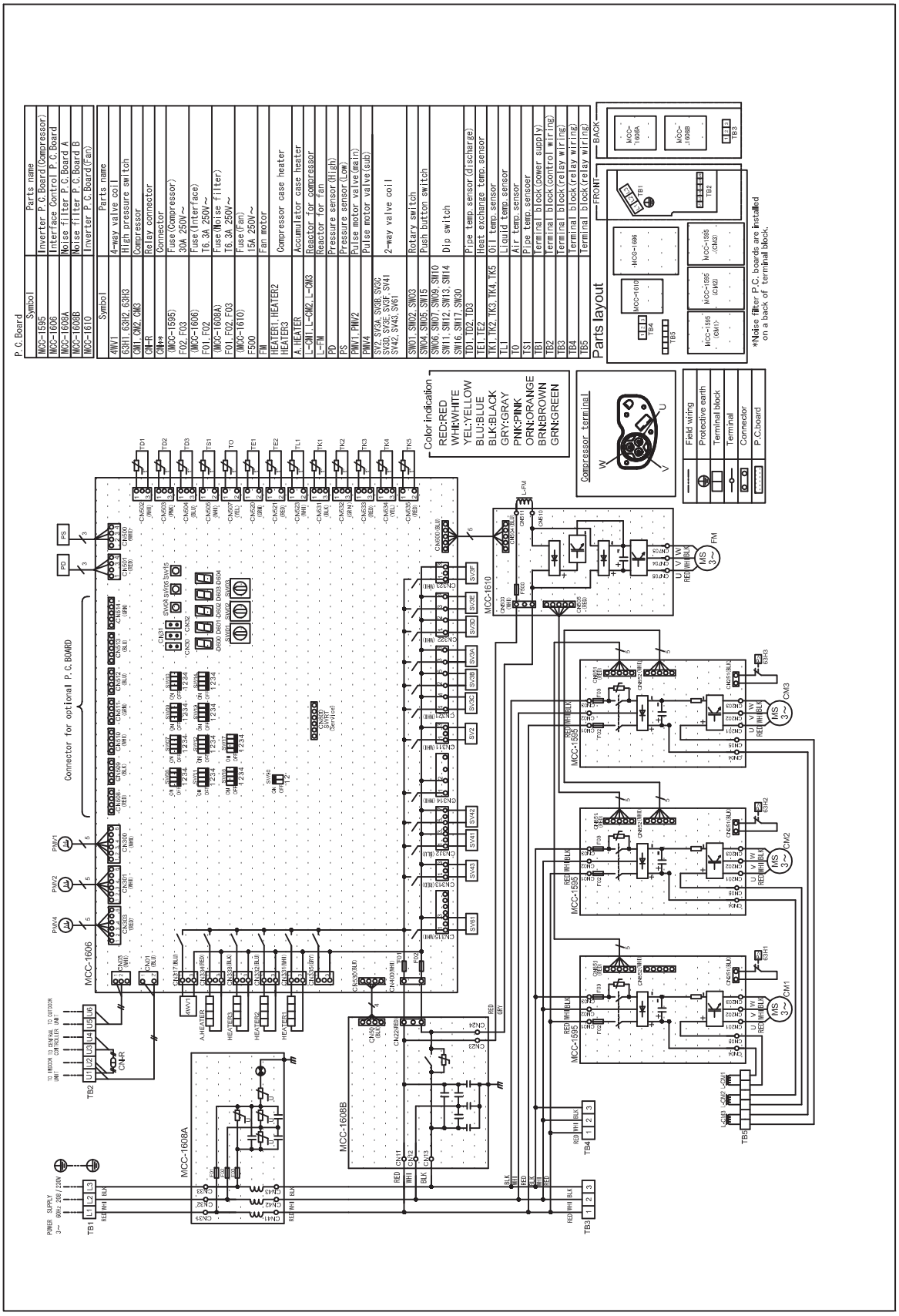
Model: MMY-MAP0724HT9UL



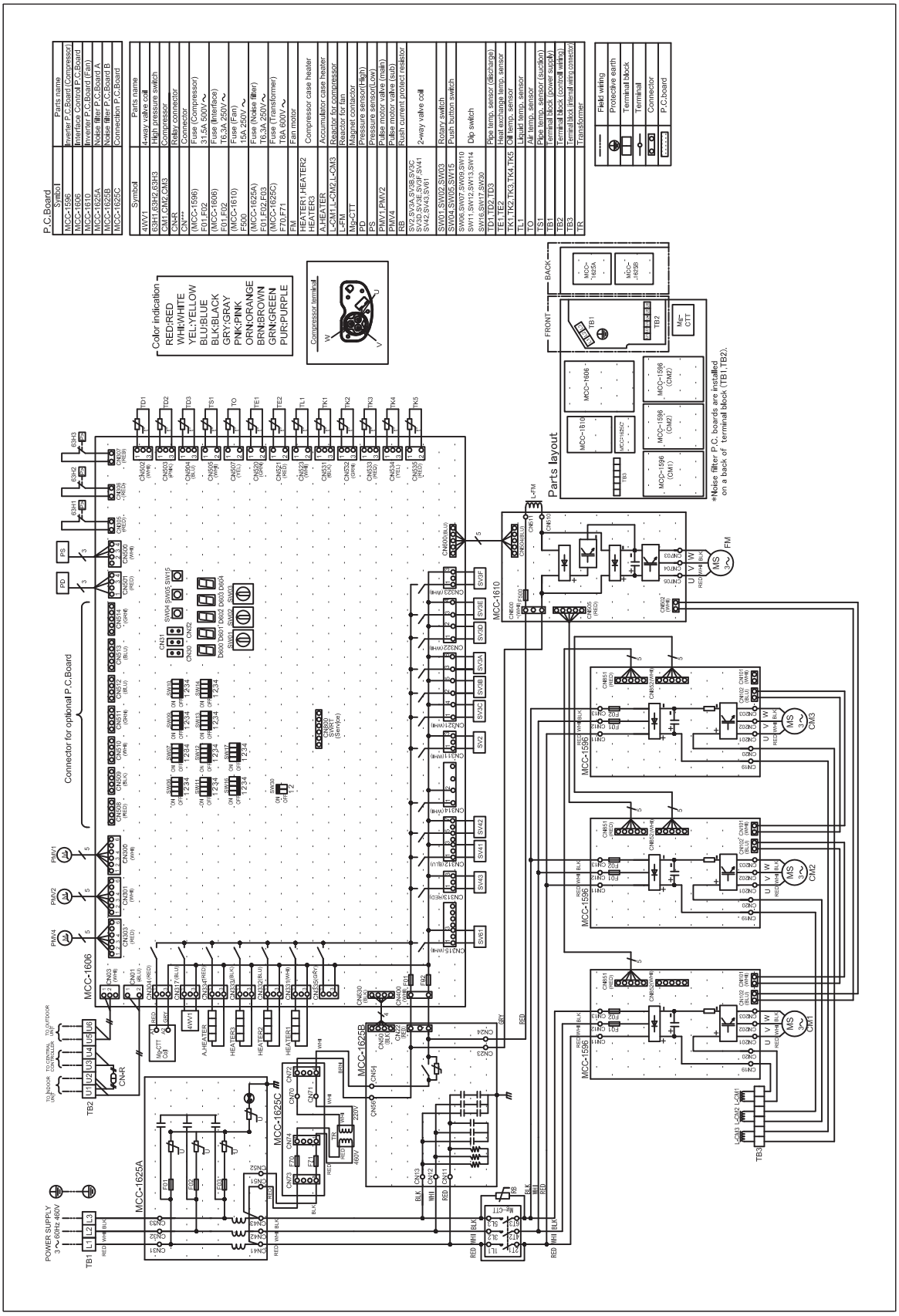
Model: MMY-MAP0724HT6UL



Model: MMY-MAP0964HT9UL, MAP1144HT9UL

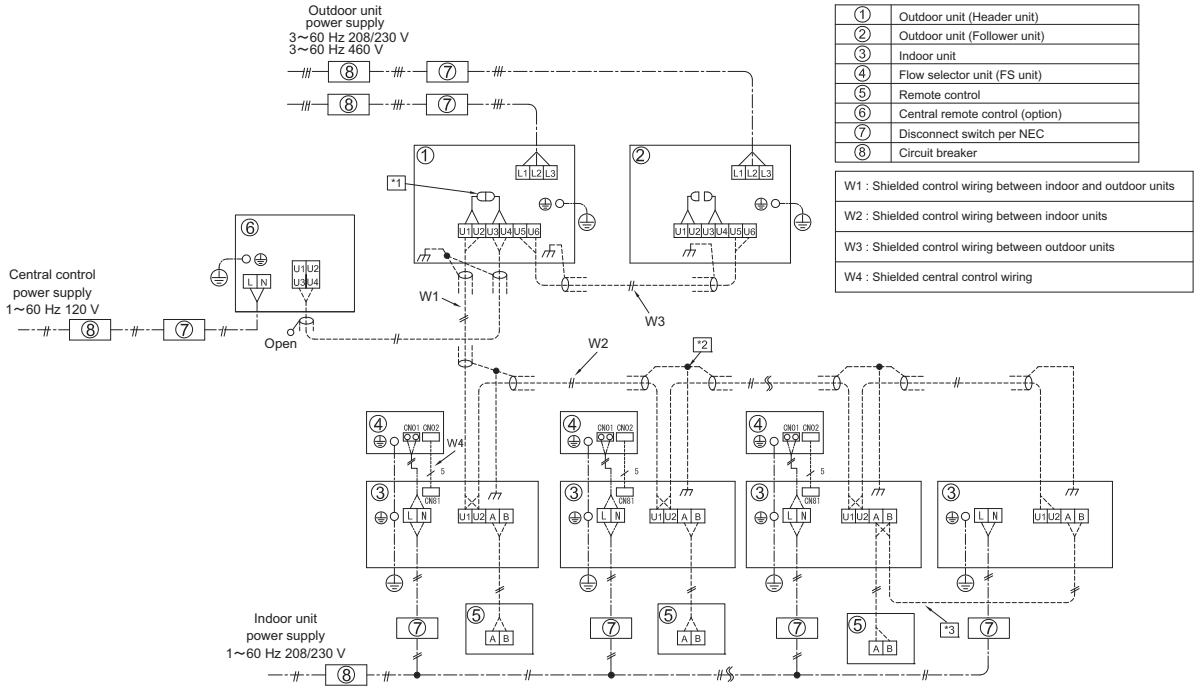


Model: MMY-MAP0964HT6UL, MAP1144HT6UL



5-7. Connecting diagram

5-7-1. Heat recovery

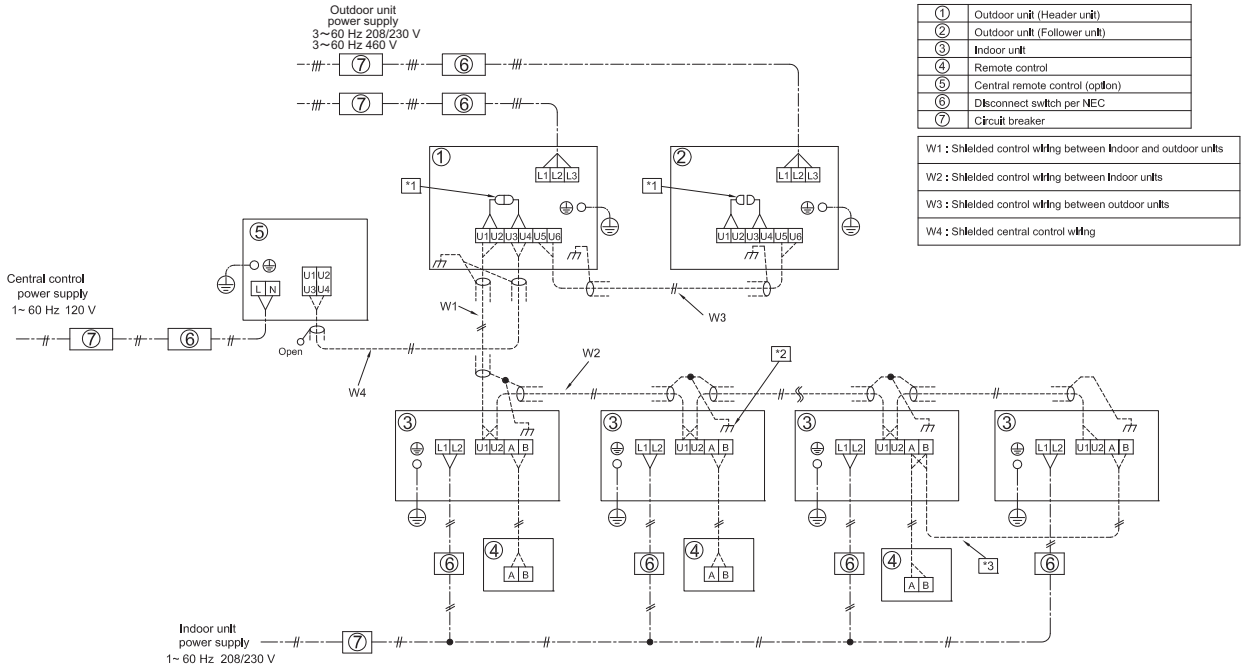


①	Outdoor unit (Header unit)
②	Outdoor unit (Follower unit)
③	Indoor unit
④	Flow selector unit (FS unit)
⑤	Remote control
⑥	Central remote control (option)
⑦	Disconnect switch per NEC
⑧	Circuit breaker

W1 : Shielded control wiring between indoor and outdoor units
W2 : Shielded control wiring between indoor units
W3 : Shielded control wiring between outdoor units
W4 : Shielded central control wiring

(Note)
1. When using a central control, plug in the connector between [U1,U2] and [U3,U4] terminal of the header unit.
2. Connect the shield of all control wiring to the control ground screw on every unit. (Indoor & Outdoor)
3. Group control.
4. Power supply wiring to be per NEC and local codes.
5. For the control wires connecting indoor units, outdoor units, and between indoor and outdoor units, use 2-core shielded wires.
6. For additional details, see the individual unit wiring diagrams. (Indoor & Outdoor)
7. Control wire and power line wire between FS unit and indoor unit are the accessory parts of FS unit. (Wire length: 20 ft (6 m)
   If the length between indoor and FS unit exceeds 16 ft (5 m), connect by using the connection cable kit sold separately (RBC-CBK15FUL)
   Connect the connector of control wiring on the indoor P.C. board, and so as the power supply wire to L and N terminals.
8. When connecting the multiple indoor units to a single FS unit, only group control is available.
   For the indoor unit, a remote control cannot be individually connected.

5-7-2. Heat pump



①	Outdoor unit (Header unit)
②	Outdoor unit (Follower unit)
③	Indoor unit
④	Remote control
⑤	Central remote control (option)
⑥	Disconnect switch per NEC
⑦	Circuit breaker

W1 : Shielded control wiring between indoor and outdoor units
W2 : Shielded control wiring between indoor units
W3 : Shielded control wiring between outdoor units
W4 : Shielded central control wiring

(Note)
1. When using a central control, plug in the connector between [U1,U2] and [U3,U4] terminal of the header unit.
2. Connect the shield of all control wiring to the control ground screw on every unit. (Indoor & Outdoor)
3. Group control.
4. Power supply wiring to be per NEC and local codes.
5. For the control wires connecting indoor units, outdoor units, and between indoor and outdoor units, use 2-core shielded wires.
6. For additional details, see the individual unit wiring diagrams.(Indoor & Outdoor)

5-8. Applied control for outdoor unit

5-8-1. Outdoor fan high static pressure shift

Purpose / characteristics

This function is used when connecting a duct to the discharge port of an outdoor unit (as part of, for example, unit installation on the floor by floor installation.)

Setup

Turn ON the DIP switch [SW10, Bit 2] provided on the interface P.C. board of the outdoor unit.
This function must be enabled with every discharge duct connected outdoor unit for both of the header and follower units.

Specification

Increase the speed of the propeller fan units on the outdoor fan to allow the installation of a duct with a maximum external static pressure not greater than specified in the table below. If a discharge duct with a resistance greater than 0.06 InWG (15 Pa) is to be used, enable this function. The maximum external static pressures of base units are shown below (Table 1, 3).

Table 1: Maximum External Static Pressures of Base Outdoor Units

Heat recovery	Model	MMY-	MAP0724FT9UL/6UL	MAP0964FT9UL/6UL	MAP1204FT9UL/6UL
	Maximum external static pressure		0.20 InWG	0.16 InWG	0.16 InWG
	(*) Outdoor unit air flow	(CFM)	5120	7060	7620

(*) Calculate duct resistance from outdoor unit air flow.

Table 2: Maximum External Static Pressures for Combined Use of Base Units

	Capacity type	Model name	Combination of outdoor units		Maximum external static pressure (in WG)
		MMY-	Unit 1	Unit 2	
Heat recovery	208/230 V model				
	072	MAP0724FT9UL	MAP0724FT9UL		0.20
	096	MAP0964FT9UL	MAP0964FT9UL		0.16
	120	MAP1204FT9UL	MAP1204FT9UL		0.16
	144	AP1444FT9UL	MAP0724FT9UL	MAP0724FT9UL	0.20
	168	AP1684FT9UL	MAP0964FT9UL	MAP0724FT9UL	0.16
	192	AP1924FT9UL	MAP0964FT9UL	MAP0964FT9UL	0.16
	216	AP2164FT9UL	MAP1204FT9UL	MAP0964FT9UL	0.16
	240	AP2404FT9UL	MAP1204FT9UL	MAP1204FT9UL	0.16
	460 V model				
	072	MAP0724FT6UL	MAP0724FT6UL		0.20
	096	MAP0964FT6UL	MAP0964FT6UL		0.16
	120	MAP1204FT6UL	MAP1204FT6UL		0.16
	144	AP1444FT6UL	MAP0724FT6UL	MAP0724FT6UL	0.20
	168	AP1684FT6UL	MAP0964FT6UL	MAP0724FT6UL	0.16
	192	AP1924FT6UL	MAP0964FT6UL	MAP0964FT6UL	0.16
	216	AP2164FT6UL	MAP1204FT6UL	MAP0964FT6UL	0.16
	240	AP2404FT6UL	MAP1204FT6UL	MAP1204FT6UL	0.16

Table 3: Maximum External Static Pressures of Base Outdoor Units

Heat pump	Model	MMY-	MAP0724HT6UL	MAP0964HT6UL	MAP1144HT6UL
	Maximum external static pressure		0.2 InGW (50 Pa)	0.2 InGW (50 Pa)	0.2 InGW (50 Pa)
	(*) Outdoor unit air flow	(CFM)	5800	6600	7060

(*) Calculate duct resistance from outdoor unit air flow.

Table 4: Maximum External Static Pressures for Combined Use of Base Units

	Capacity type	Model name	Combination of outdoor units		Maximum external static pressure (in WG)
		MMY-	Unit 1	Unit 2	
Heat pump	208/230 V model				
	072	MAP0724HT9UL	MAP0724HT9UL		0.20
	096	MAP0964HT9UL	MAP0964HT9UL		0.20
	114	MAP1144HT9UL	MAP1144HT9UL		0.20
	144	AP1444HT9UL	MAP0724HT9UL	MAP0724HT9UL	0.20
	168	AP1684HT9UL	MAP0964HT9UL	MAP0724HT9UL	0.20
	192	AP1924HT9UL	MAP0964HT9UL	MAP0964HT9UL	0.20
	228	AP2284HT9UL	MAP1144HT9UL	MAP1144HT9UL	0.20
	460 V model				
	072	MAP0724HT6UL	MAP0724HT6UL		0.20
	096	MAP0964HT6UL	MAP0964HT6UL		0.20
	114	MAP1144HT6UL	MAP1144HT6UL		0.20
	144	AP1444HT6UL	MAP0724HT6UL	MAP0724HT6UL	0.20
	168	AP1684HT6UL	MAP0964HT6UL	MAP0724HT6UL	0.20
	192	AP1924HT6UL	MAP0964HT6UL	MAP0964HT6UL	0.20
	228	AP2284HT6UL	MAP1144HT6UL	MAP1144HT6UL	0.20

5-8-2. Priority operation mode setting (SMMS-i (Heat pump) only)

Purpose / characteristics

This function allows switching between priority cooling and priority heating.
Four patterns of priority operation mode setting are available as shown in the table below. Select a suitable priority mode according to the needs of the customer.

Setup

⚠ CAUTION

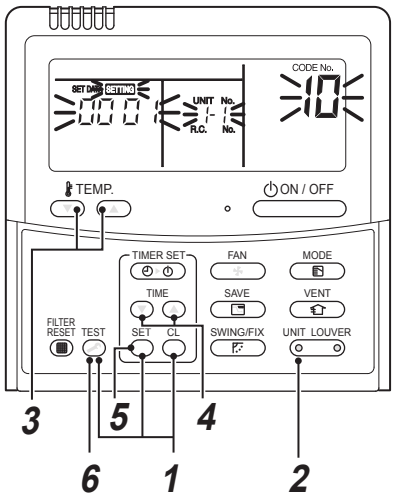
In the case of the priority indoor unit mode, it is necessary to set up the specific indoor unit chosen for priority operation (a single unit only).

(1) Outdoor unit setup method (header unit)

SW11		Operation
Bit 1	Bit 2	
OFF	OFF	Priority heating (factory default)
ON	OFF	Priority cooling
OFF	ON	Priority operation based on No. of units in operation (priority given to the operation mode with the largest share of units in operation)
ON	ON	Priority indoor unit (priority given to the operation mode of the specific indoor unit set up for priority operation)

(2) Indoor unit setup method for priority indoor unit mode

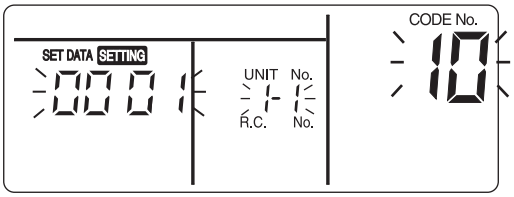
The setting can be changed only when the system is at rest. (Be sure to turn off the system prior to this operation.)



1 Push the TEST + SET + CL buttons simultaneously and hold for at least 4 seconds. The display window will start flashing in a little while.

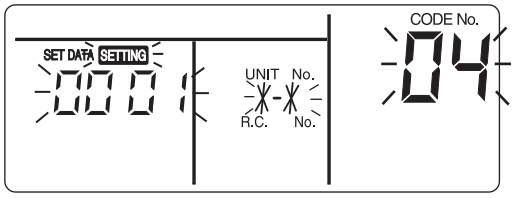
Verify that the displayed CODE No. is 10.

- If the displayed CODE No. is not 10, press the TEST button to erase the display and repeat the procedure from the beginning.
  (Note that the system does not respond to remote control operation for about 1 minute after the TEST button is pushed.)
  (In the case of group control, the indoor unit No. displayed first indicates the header unit.)



2 Each time the UNIT LOUVER button is pushed, one of the indoor unit Nos. under group control is displayed in turn. Select the indoor unit whose setting is to be changed.

The fan and louver of the selected indoor unit then come on, so that the position of this unit can be confirmed.



3 Use the TEMP. button to select the CODE No. 04.

4 Use the TIME button to select the SET DATA 0001.

Priority set 0001 No priority set 0000

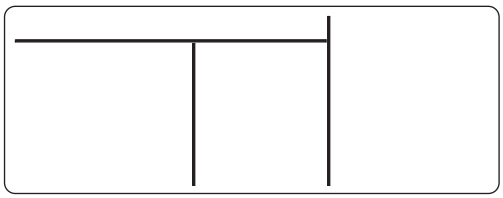
5 Push the SET button.

The setup is finished when the display changes from flashing to steady.

6 Upon finishing the setup, push the TEST button. (This finalizes the setting.)

When the TEST button is pushed, the display goes blank, and the system returns to normal off state.

(Note that the system does not respond to remote control operation for about 1 minute after the TEST button is pushed.)



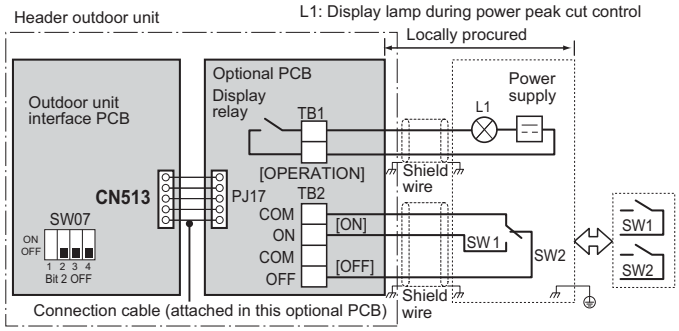
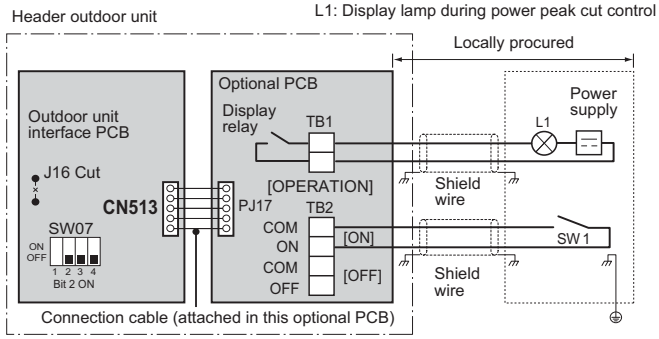
NOTE

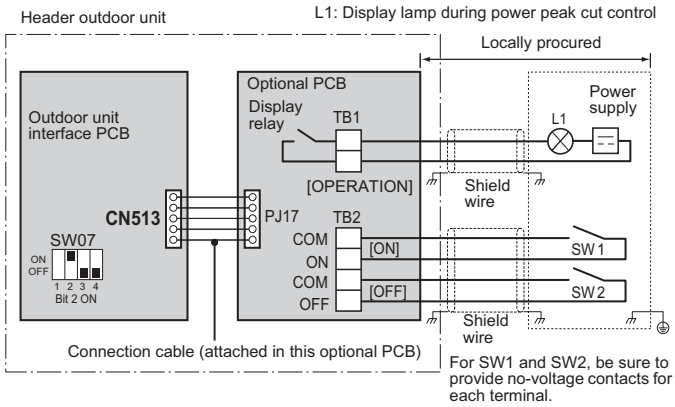
Priority can be given to only one indoor unit. If more than one indoor unit is accidentally set to priority, an error code (L5 or L6: Duplicated indoor unit priority setting) will be displayed.

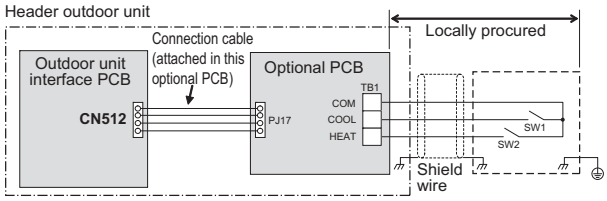
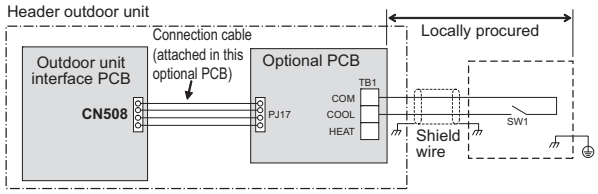
All units displaying L5 have been set to 0001 (priority). Keep the unit to which priority should be given as it is, and change the value back to 0000 (no priority) for all the rest.

Error code	Description
L5	Duplicated indoor unit priority setting (The unit is set to 0001.)
L6	Duplicated indoor unit priority setting (The unit is set to 0000.)

5-9. Optional PCB of outdoor unit

Model name	Appearance	Function
TCB-PCDM4UL	 Size : 2.80 x 3.35 (in) **Application**  * Install the optional PCB in the inverter assembly of the outdoor header unit.	**Power peak-cut Control** **Standard Specifications** (Wiring example)  For SW1 and SW2, be sure to provide no-voltage contacts for each terminal. The input signals of SW1 and SW2 may be pulse input (100 msec or more) or continuous make. Do not turn on [SW1] and [SW2] simultaneously. **<SW07 (bit 2) OFF [2-stage switching]>** **Input** / **SW07 (bit 1)** / **Display relay (L1)** SW1 | SW2 | Bit 1 OFF | Bit 1 ON OFF | ON | 100 % (normal operation) | 100 % (normal operation) | OFF ON | OFF | 0 % (forced stop) | Approx. 60 % (upper limit regulated) | ON **For one input function** Power peak-cut ON-OFF control is made possible on the SHRM-i on only the [ON] terminal input (SW1) by cutting the jumper lead (J16) of the center outdoor unit interface PCB. (Wiring example)  **<SW07 (bit 2) OFF [2-stage switching]>** Power peak-cut control turns ON when SW1 in the wiring example is ON (continuous make). **Jumper lead J16** / **Input SW1** / **SW07 (bit 1)** / **Display relay (L1)** Bit 1 OFF | Bit 1 ON Cut | OFF | 100 % (normal operation) | 100 % (normal operation) | OFF Cut | ON | 0 % (forced stop) | Approx. 60 % (upper limit regulated) | ON

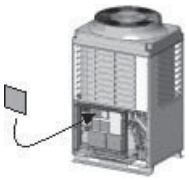
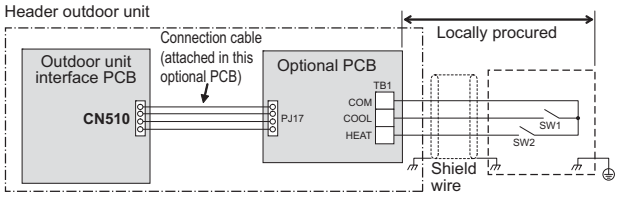
Model name	Appearance	Function
TCB-PCDM4UL	 Size : 2.80 x 3.35 (in) **Application**  * Install the optional PCB in the inverter assembly of the outdoor header unit.	**Enhanced Specifications** (Wiring example)  **<SW07 (bit 2) ON [4-stage switching]>** **Input** / **SW07 (bit 1)** / **Display relay (L1)** **SW1** / **SW2** / **Bit 1 OFF** / **Bit 1 ON** OFF / OFF / 100 % (normal operation) / 100 % (normal operation) / OFF ON / OFF / Approx. 80 % (upper limit regulated) / Approx. 85 % (upper limit regulated) / ON OFF / ON / Approx. 60 % (upper limit regulated) / Approx. 75 % (upper limit regulated) / ON ON / ON / 0 % (forced stop) / Approx. 60 % (upper limit regulated) / ON

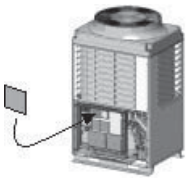
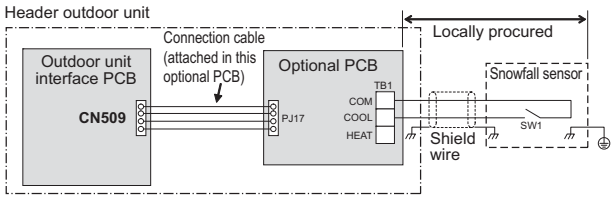
Model name	Appearance	Function
TCB-PCMO4UL	 Size : 2.19 x 2.35 (in) **Application**  * Install the optional PCB in the inverter assembly of the outdoor header unit.	**[1] External master ON/OFF control** **▼ Function** By connecting the cable (attached in this optional PCB) to the interface PC board on an outdoor unit, all indoor units connected to the outdoor unit enable to operate simultaneously. **▼ Operation** The outdoor unit connection is for the header unit (U1).  SW1: Operation input switch SW2: Stop input switch **Terminal** / **Input Signal** / **Operation** COOL (SW1) — ON / OFF — All indoor units operate together HEAT (SW2) — ON / OFF — All indoor units stop together Provide no-voltage pulse contacts for each terminal. Hold the ON state for at least 100 msec. Do not turn SW1 and SW2 ON simultaneously **[2] Night time operation (sound reduction) control** **▼ Function** As the cable (attached in this optional PCB) is connected to the “Interface PCB” on an outdoor unit, both compressor speed and fan speed are restricted while the signal of the night operation control is input. It makes the noise reduction during the night time operation. **▼ Operation** The outdoor unit connection is for the header unit (U1).  SW1: Night time signal switch **Terminal** / **Input Signal** / **Operation** COOL (SW1) — ON / OFF — Night time operation control COOL (SW1) — ON / OFF — Normal operation Each terminal should be connected to dry contact. **▼ Sound reduction and approximation capacity (reference)**

Outdoor unit (base unit)	During low-noise mode* dB(A)	Capacity	
		Cooling	Heating
072 type	50	approx. 85 %	approx. 80 %
096 type	53	approx. 85 %	approx. 85 %
114/120 type	53	approx. 80 %	approx. 80 %

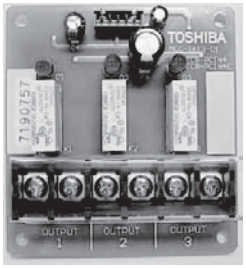
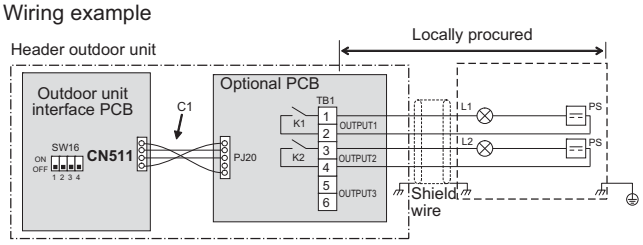
Relative to maximum capacity

* Position of noise measuring device :
3.3 ft (1 m) from the front face of the set and 4.9 ft (1.5 m) above ground (anechoic sound)

Model name	Appearance	Function
TCB-PCMO4UL	 Size : 2.19 x 2.35 (in) **Application**  * Install the optional PCB in the inverter assembly of the outdoor header unit.	**[3] Operation mode selection control** **▼ Function** The heating/cooling mode of the system can be selected by connecting to the interface PCB of outdoor units. **▼ Operation** The outdoor unit connection is for the header unit (U1).  SW1: Cooling mode specified input switch SW2: Heating mode specified input switch **Input Signal** / **Operation: Selected operation mode** **Cooling (SW1)** / **Heating (SW2)** ON / OFF: Cooling operation only OFF / ON: Heating operation only OFF / OFF: Normal operation Each terminal should be connected to dry contact. **The Switching of processing of Indoor Unit Operation State** Processing of the operation state can be switched for indoor units in a mode other than the selected operation mode by setting the jumper lead (J01) of the header outdoor unit interface PCB. **Jumper lead** / **Details of Processing** J01 connected (factory default): Unallowed indoor units in a mode other than the selected operation mode are not treated as priority (thermo OFF state). (Unallowed indoor units) Operation Mode / Operation State / Remote control Cooling unit: Air blow operation at blow rate set on remote control Heating unit: Air blow operation at super-slow blow rate Air blow unit: Regular air blow operation at blow rate set on remote control Remote control: ⏻, ❁ indicator is displayed. J01 cut: Indoor units in a mode other than the selected operation mode are forcibly switched to the selected operation mode. PC board selection mode / Remote control operation/display Normal: ❄, 💧, ☀, or 🌀 can be selected Cool: Only ❄, 💧, or 🌀 can be selected Heat: Only ☀ or 🌀 can be selected When using the remote control, 📝 (mode select control) indicator is displayed.

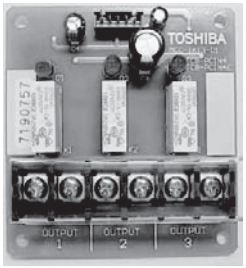
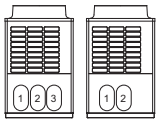
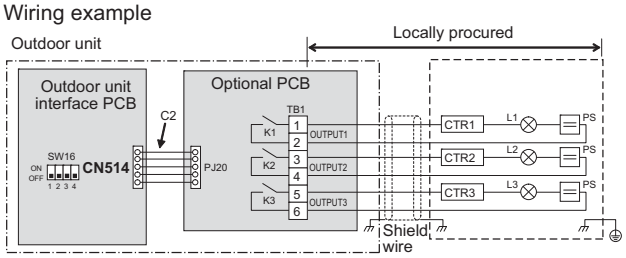
Model name	Appearance	Function
TCB-PCMO4UL	 Size : 2.19 x 2.35 (in) **Application**  * Install the optional PCB in the inverter assembly of the outdoor header unit.	**[4] Snowfall fan control** **▼ Function** The outdoor unit fan operates at snowfall by connecting to the outdoor unit interface PCB. **▼ Operation**  SW1: Snowfall detection switch (snowfall sensor) Provide no-voltage continuous contacts for each terminal.

Terminal	Input Signal	Operation
Cooling (SW1)	ON OFF	Snowfall fan control (Fan in outdoor unit operates.)
	ON OFF	Normal operation

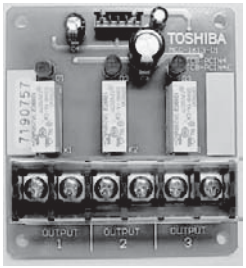
Model name	Appearance	Function
TCB-PCIN4UL	 Size : 2.87 x 3.11 (in) **Application**  * Install the optional PCB in the inverter assembly of the outdoor header unit.	**[1] Error / Operation Output** **▼ Function** The operation error output PCB can indicate operation and error states by connecting to the interface PCB of outdoor units. **▼ Operation** Operation output: The operation indicator is on while any indoor unit in the system is operating. Error output: The error indicator is on when an error is occurred on even one of the indoor or outdoor units in the system. Wiring example 

C1	Attached connection cable 1 (4wires)
CN511	Connector on interface side (green)
K1, K2	Relays
L1	Error indication Lamp
L2	Operation indication Lamp
OUTPUT1	Error output
OUTPUT2	Operation output
PJ20	Connector on optional PCB side
PS	Power supply unit
TB1	Terminal block

* [OUTPUT3] is displayed when power is turned on.

Model name	Appearance	Function
TCB-PCIN4UL	 Size : 2.87 x 3.11 (in) **Application**  * Install the optional PCB in the inverter assembly of individual outdoor unit.	**[2] Compressor Operation Output** **▼ Function** While each compressor in the outdoor unit is running, the compressor operation signal is displayed. This function can also be used to measure the elapsed time for the compressor operation. **▼ Operation** While a compressor is in operation, the relay of the output terminal corresponding to the compressor turns on (closed). When the operation of a compressor is off, the relay turns off (opened).  The output terminals are “OUTPUT1”, “OUTPUT2” and “OUTPUT3” from left to right of the compressors facing to the front of the outdoor unit. Wiring example 

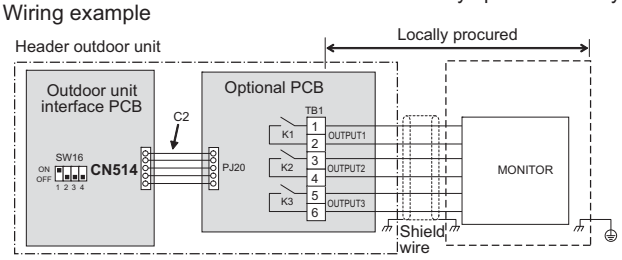
C2	Attached connection cable 2 (5wires)
CN514	Connector on interface side (green)
CTR1	Elapsed operation counter 1
CTR2	Elapsed operation counter 2
CTR3	Elapsed operation counter 3
K1, K2, K3	Relays
L1, L2, L3	Operation indication LEDs
OUTPUT1	Compressor 1 operation output terminal
OUTPUT2	Compressor 2 operation output terminal
OUTPUT3	Compressor 3 operation output terminal
PJ20	Connector on optional PCB side
PS	Power supply unit
TB1	Terminal block

Model name	Appearance	Function
TCB-PCIN4UL	 Size : 2.87 x 3.11 (in) **Application**  * Install the optional PCB in the inverter assembly of the outdoor header unit.	**[3] Operating Rate Output** **▼ Function** The state of operation is available to check remotely as the signal of system operation rate enable to output. **▼ Operation** As shown in the table, each of the output terminals turns ON (relay closes) and OFF (relay opens) depending on the system operating rate.

Functions	SW16	OUTPUT1	OUTPUT2	OUTPUT3	Operating rate FA
System operating rate output	ON/OFF 1 2 3 4 bit 1 : ON bit 2 : OFF	OFF	OFF	OFF	FA=0 %
		ON	OFF	OFF	0 % < FA<20 %
		OFF	ON	OFF	20 %≤FA<35 %
		ON	ON	OFF	35 %≤FA<50 %
		OFF	OFF	ON	50 %≤FA<65 %
		ON	OFF	ON	65 %≤FA<80 %
		OFF	ON	ON	80 %≤FA<95 %
		ON	ON	ON	95 %≤FA

OFF=relay open ON=relay closed

Wiring example

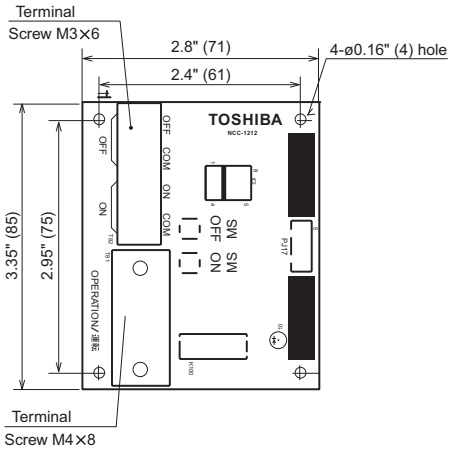


C2	Attached connection cable 2 (5wires)
CN514	Connector on interface side (green)
K1, K2, K3	Relays
MONITOR	Monitoring device
OUTPUT1	Output terminal for each function
OUTPUT2	Output terminal for each function
OUTPUT3	Output terminal for each function
PJ20	Connector on optional PCB side
TB1	Terminal block

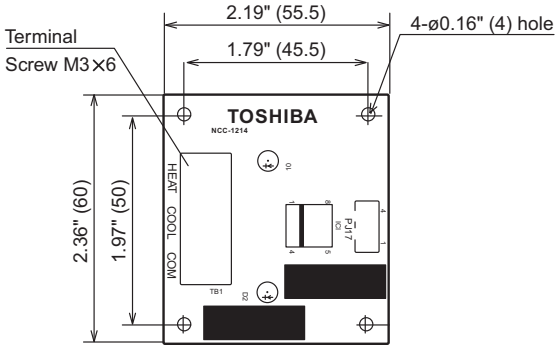
Dimensions of P.C. board

Unit: in (mm)

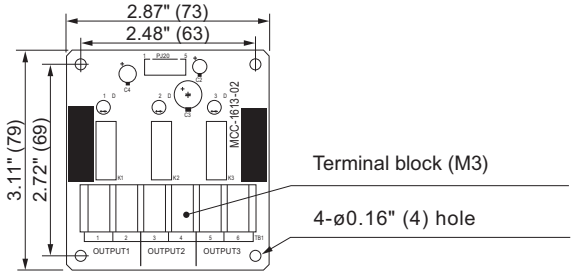
TCB-PCDM4UL



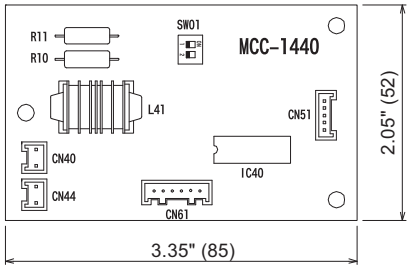
TCB-PCMO4UL



TCB-PCIN4UL



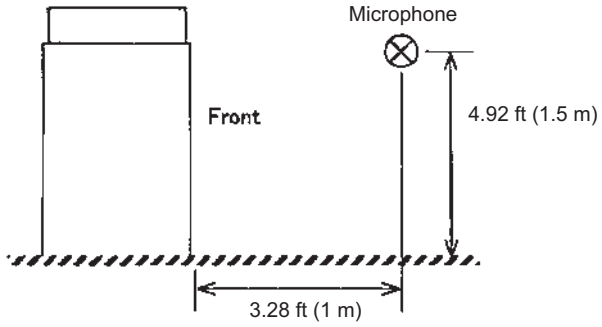
TCB-PCNT31TLUL



5-10. Sound pressure level data

5-10-1. Heat recovery

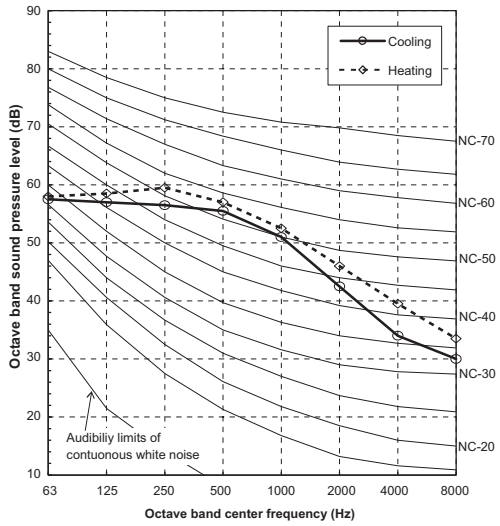
Outdoor unit



1 Single unit

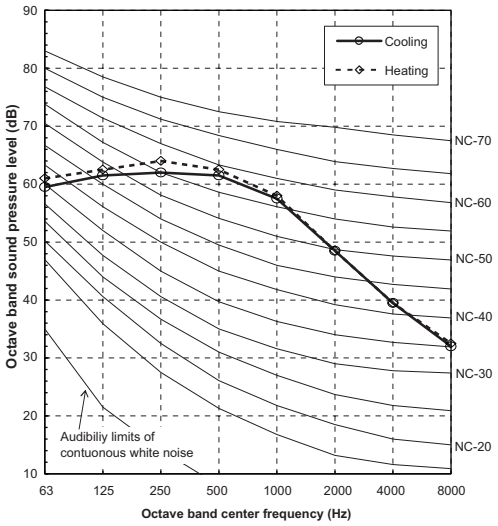
MMY-MAP0724FT9UL/6UL

Sound pressure level (dB (A))	Cooling	Heating
	56	57



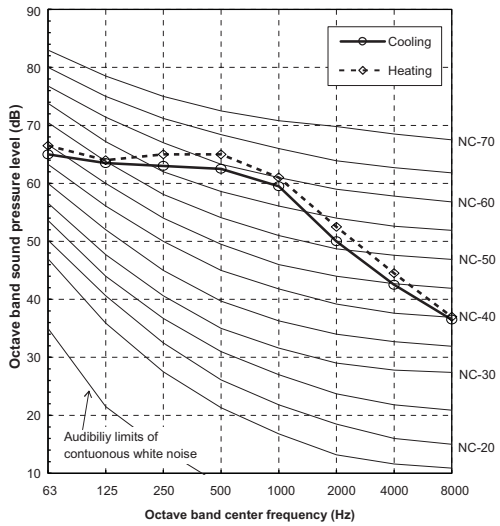
MMY-MAP0964FT9UL/6UL

Sound pressure level (dB (A))	Cooling	Heating
	62	63



MMY-MAP1204FT9UL/6UL

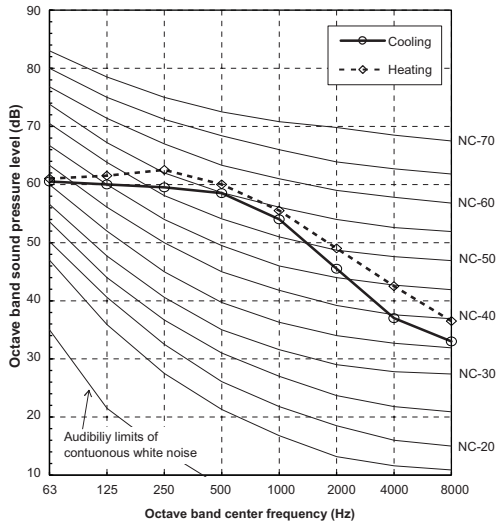
Sound pressure level (dB (A))	Cooling	Heating
	63.5	65.5



2 Combination

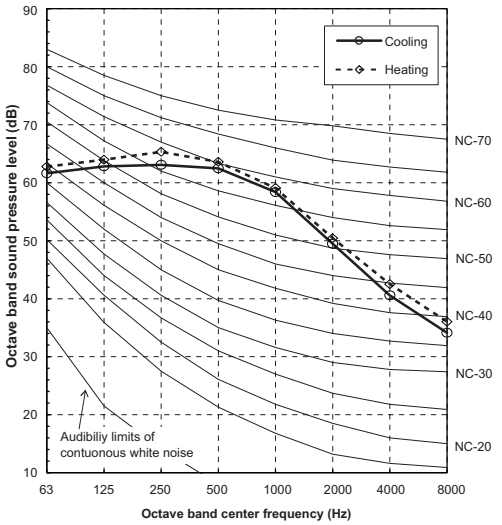
MMY-AP1444FT9UL/6UL

Sound pressure level (dB (A))	Cooling	Heating
	59	60



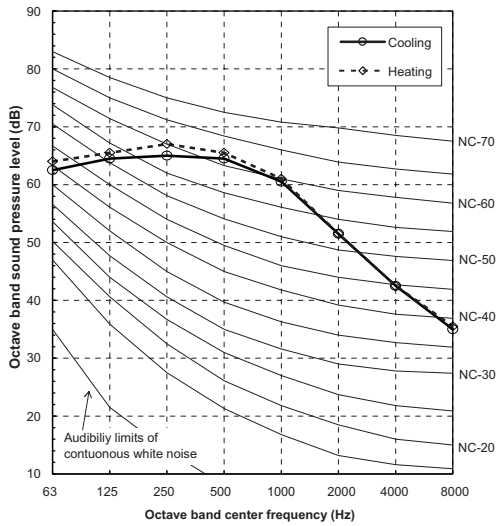
MMY-AP1684FT9UL/6UL

Sound pressure level (dB (A))	Cooling	Heating
	63	64



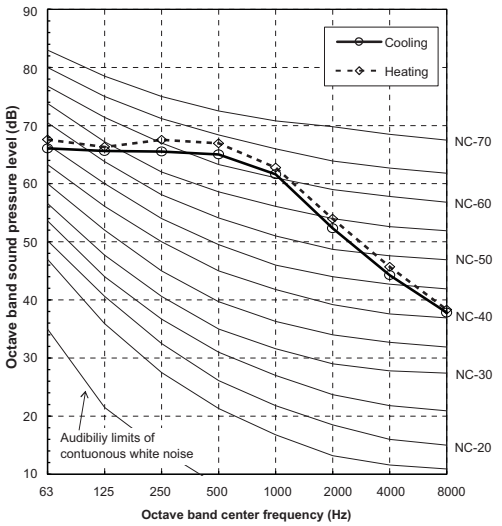
MMY-AP1924FT9UL/6UL

Sound pressure level (dB (A))	Cooling	Heating
	65.5	66



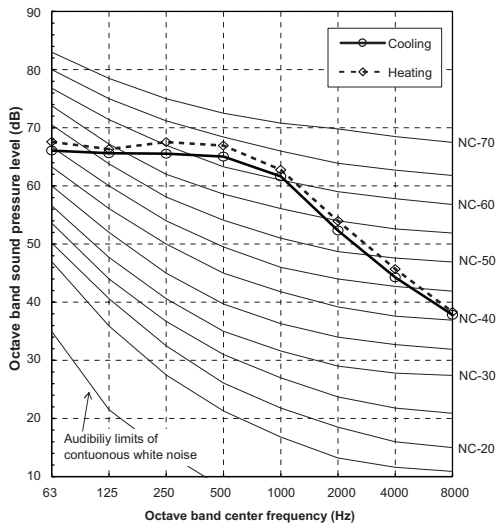
MMY-AP2164FT9UL/6UL

Sound pressure level (dB (A))	Cooling	Heating
	66	67.5



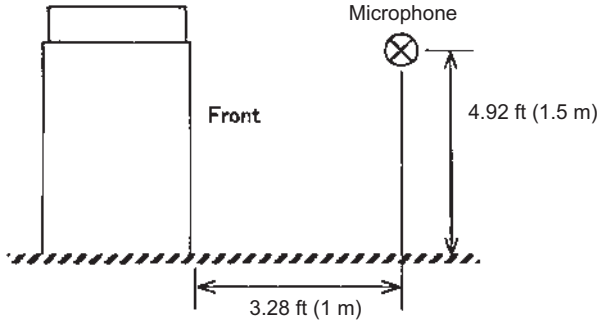
MMY-AP2404FT9UL/6UL

Sound pressure level (dB (A))	Cooling	Heating
	66.5	68.5



5-10-2. Heat pump

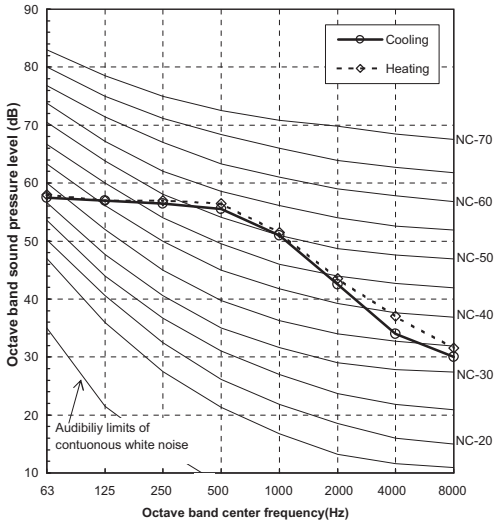
Outdoor unit



1 Single unit

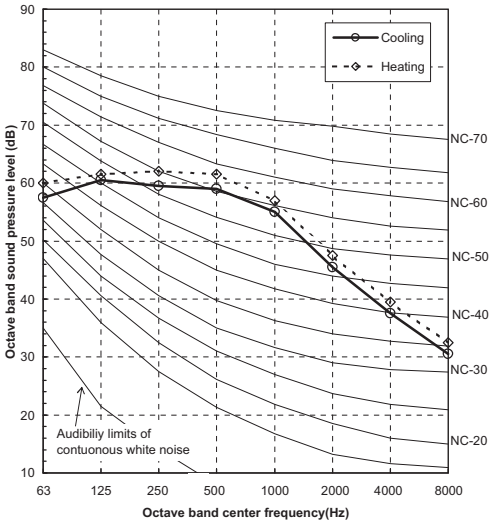
MMY-MAP0724HT9UL, MAP0724HT6UL

Sound pressure level (dB (A))	Cooling	Heating
	56	57



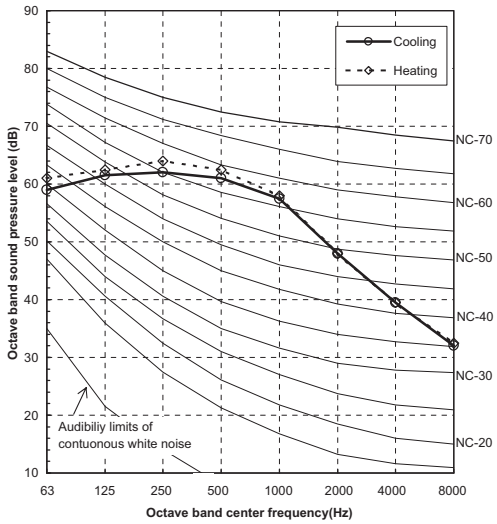
MMY-MAP0964HT9UL, MAP0964HT6UL

Sound pressure level (dB (A))	Cooling	Heating
	60	62



MMY-MAP1144HT9UL, MAP1144HT6UL

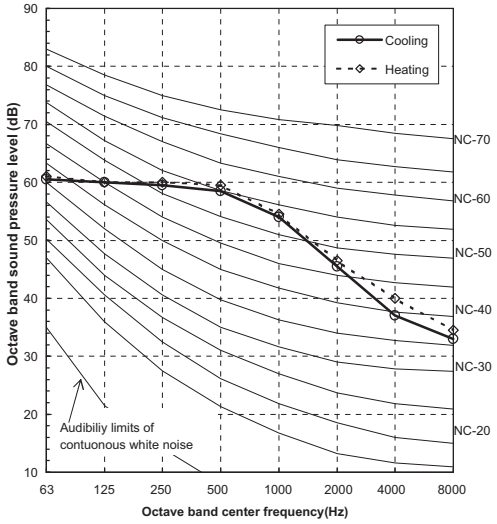
Sound pressure level (dB (A))	Cooling	Heating
	62	63



2 Combination

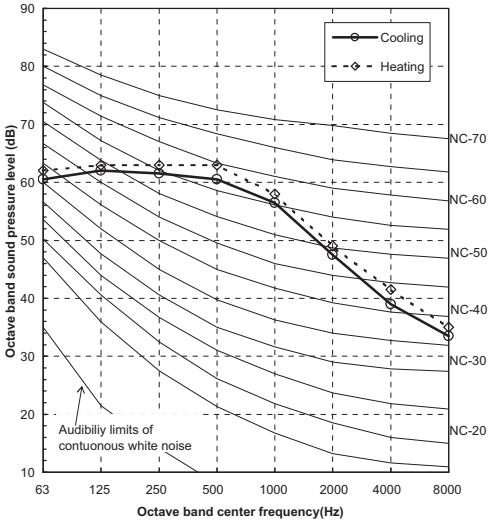
MMY-AP1144HT9UL, AP1144HT6UL

Sound pressure level (dB (A))	Cooling	Heating
	59	60



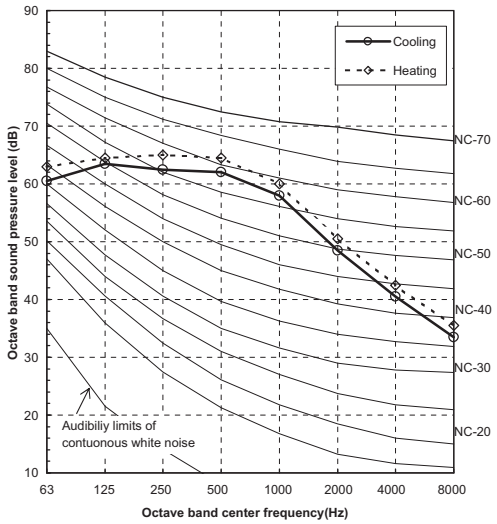
MMY-AP1684HT9UL, AP1684HT6UL

Sound pressure level (dB (A))	Cooling	Heating
	61.5	63.5



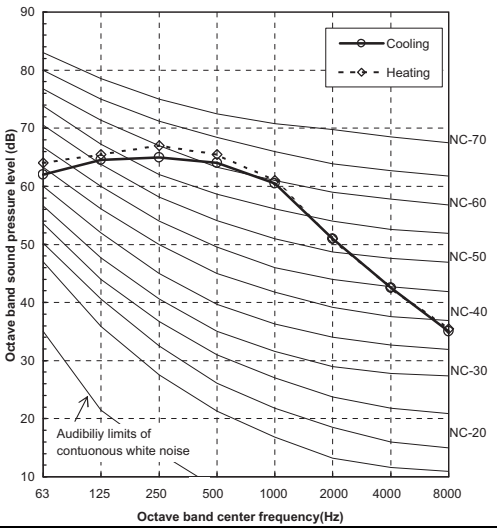
MMY-AP1924HT9UL, AP1924HT6UL

Sound pressure level (dB (A))	Cooling	Heating
	63	64



MMY-AP2284HT9UL, AP2284HT6UL

Sound pressure level (dB (A))	Cooling	Heating
	65	66



5-11. FS unit (Flow Selector unit)

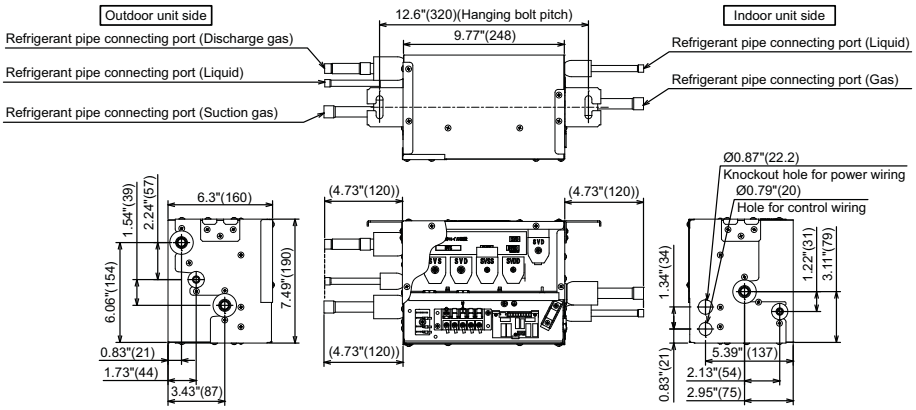
Specifications

Model Name		RBM-Y0383FUL	RBM-Y0613FUL	RBM-Y0963FUL
Power supply		230 V (208/230 V) 3phase 60 Hz		
Connectable indoor unit capacity (kBtu/h)		Below 38	38 to below 61	61 to 96 or less
Connectable indoor units		5	8	8
Dimension	Height (in)	7.49	7.49	7.88
	Width (in)	9.77	9.77	15.8
	Depth (in)	6.3	6.3	7.88
Total Weight (lbs)		11	13	20
Connecting port dia. (Indoor unit side)	Liquid side (in)	3/8"	3/8"	1/2"
	Gas side (in)	5/8"	5/8"	7/8"
Connecting port dia. (Outdoor unit side)	Liquid side (in)	3/8"	3/8"	1/2"
	Discharge gas side (in)	1/2"	1/2"	3/4"
	Suction gas side (in)	5/8"	5/8"	7/8"
Connection		Blaze connection		

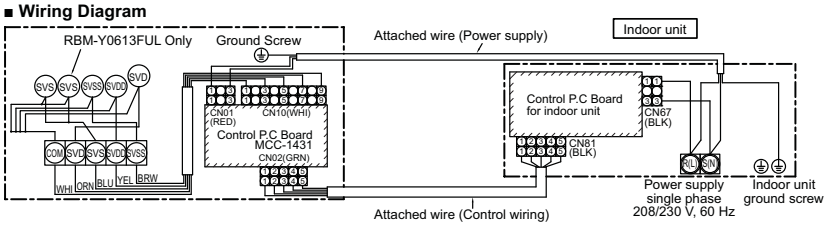
External view

RBM-Y0383FUL, RBM-Y0613FUL

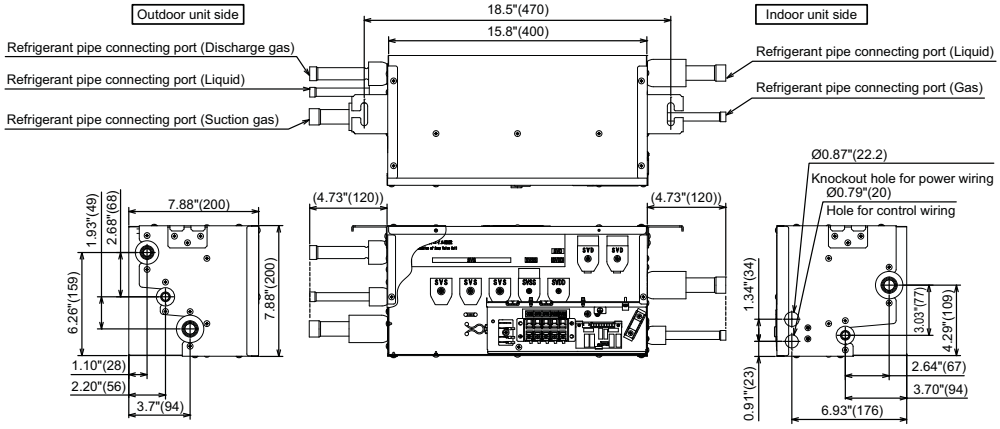
(Unit: in (mm))



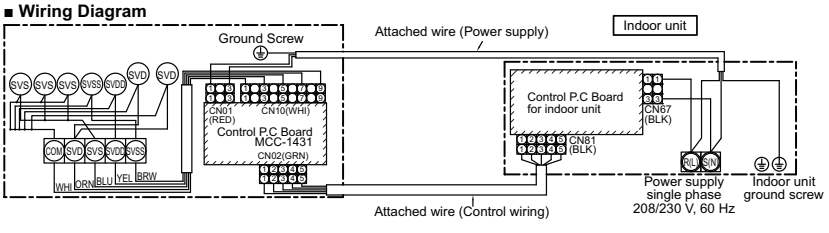
■ **Wiring Diagram**



RBM-Y0963FUL



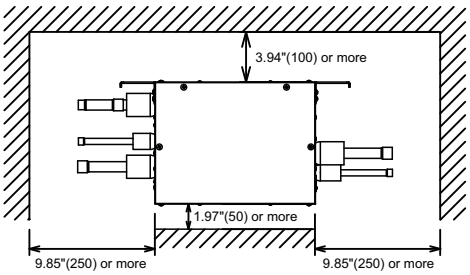
■ **Wiring Diagram**

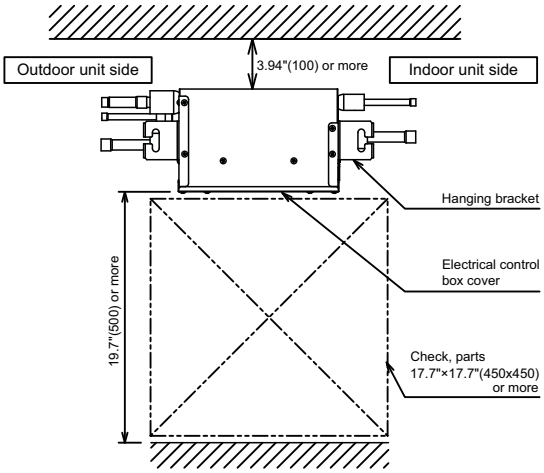


<Installation space>

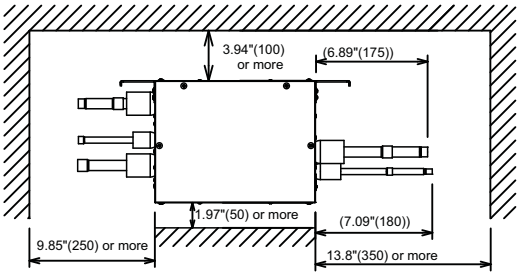
(Unit: in (mm))

<RBM-Y0383FUL / Y0613FUL>





<RBM-Y0383FUL (When attached pipes are used)>



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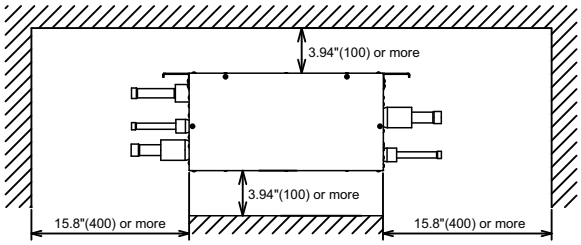
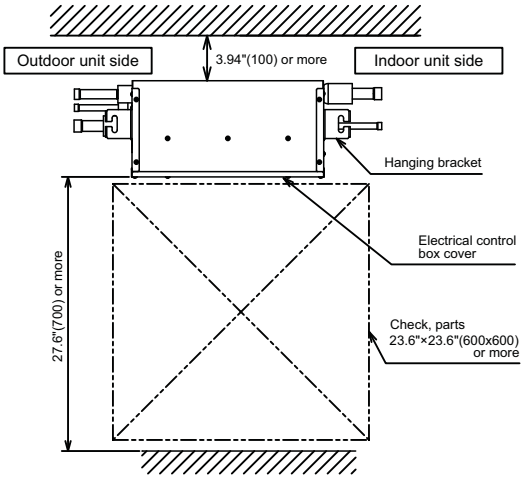
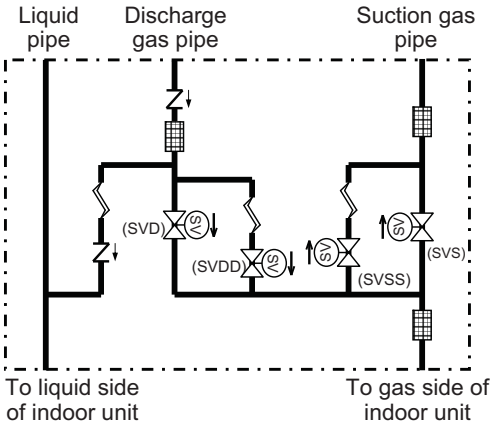


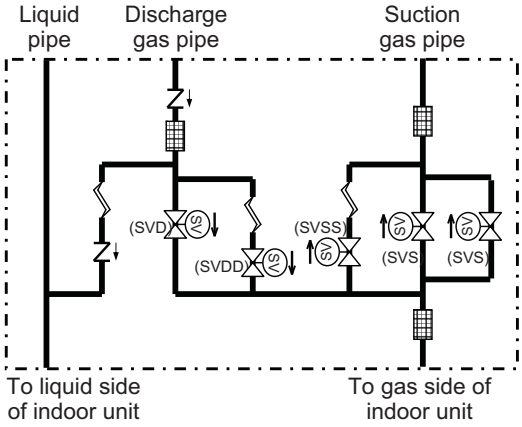


Refrigeration cycle diagram

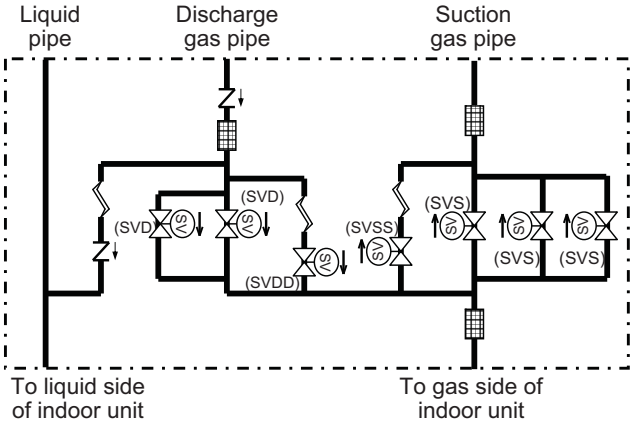
Model RBM-Y0383FUL



Model RBM-Y0613FUL



Model RBM-Y0963FUL



Symbol				
	Solenoid Valve	Capillary Tube	Check Valve	Strainer

6-1. 4-Way Cassette type

4-Way Cassette type

MMU-AP0152H2UL
MMU-AP0182H2UL
MMU-AP0212H2UL
MMU-AP0242H2UL
MMU-AP0302H2UL
MMU-AP0362H2UL
MMU-AP0422H2UL

Contents

1. Specifications

4-Way Cassette type

Model name				MMU-	AP0152H2UL	AP0182H2UL	AP0212H2UL	AP0242H2UL	AP0302H2UL	AP0362H2UL	AP0422H2UL
Cooling Capacity				kBtu/h	15.4	18	21	24	30	36	42
Heating Capacity				kBtu/h	17	20	24	27	34	40	47.5
Electrical characteristics	Power supply				230 V (208/230 V) 1phase 60 Hz						
	Power consumption			kW	0.026	0.026	0.036	0.036	0.043	0.088	0.112
Appearance	Main unit				Zinc hot dipping steel plate Heat-insulating material attached						
	Ceiling panel	Model			RBC-U31PG(W)-UL						
		Panel color			White (2.5GY9.0/0.5)						
Dimension (Ceiling panel)*	Unit	Height		In	10.1(1.2)*	10.1(1.2)*	10.1(1.2)*	10.1(1.2)*	10.1(1.2)*	12.6(1.2)*	12.6(1.2)*
		Width		In	33.1(37.4)*	33.1(37.4)*	33.1(37.4)*	33.1(37.4)*	33.1(37.4)*	33.1(37.4)*	33.1(37.4)*
		Depth		In	33.1(37.4)*	33.1(37.4)*	33.1(37.4)*	33.1(37.4)*	33.1(37.4)*	33.1(37.4)*	33.1(37.4)*
	Packing	Height		In	11.3(3.9)*	11.3(3.9)*	11.3(3.9)*	11.3(3.9)*	11.3(3.9)*	13.8(3.9)*	13.8(3.9)*
		Width		In	36.0(39.8)*	36.0(39.8)*	36.0(39.8)*	36.0(39.8)*	36.0(39.8)*	36.0(39.8)*	36.0(39.8)*
		Depth		In	37.2(39.8)*	37.2(39.8)*	37.2(39.8)*	37.2(39.8)*	37.2(39.8)*	37.2(39.8)*	37.2(39.8)*
Total weight (Ceiling panel)*	Unit			lbs	44(10)*	44(10)*	44(10)*	44(10)*	44(10)*	55(10)*	55(10)*
	Packed unit			lbs	53(15.5)*	53(15.5)*	53(15.5)*	53(15.5)*	53(15.5)*	64(15.5)*	64(15.5)*
Heat exchanger					Finned tube						
Fan unit	Fan				Turbo fan						
	Standard air flow (High/Mid/Low)			cfm	550/480/440	550/480/440	670/540/490	670/540/490	730/630/510	1160/840/630	1250/840/670
	Motor			W	60	60	60	60	60	150	150
Air filter					Standard filter (Long life filter)						
Connecting pipe	Gas side			In	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"
	Liquid side			In	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"
	Drain port (Nominal dia.)			In	VP25(Polyvinyl chloride tube: External Dia.1-1/4 Internal Dia.1)						
Sound pressure level (High/Mid/Low) (*1)				dB(A)	35/33/31	35/33/31	38/33/31	38/33/31	41/36.5/34	46/40.5/36.5	48.5/40.5/37.5
Option parts	Spacer for height adjustment				TCB-SP1602UUL						
	Air-discharge direction kit				TCB-BC1602UUL						
	Fresh-air chamber				TCB-GFC1602UUL						
	Fresh Air inlet box				TCB-GB1602UUL						
	Auxiliary fresh air flange				TCB-FF101URUL						

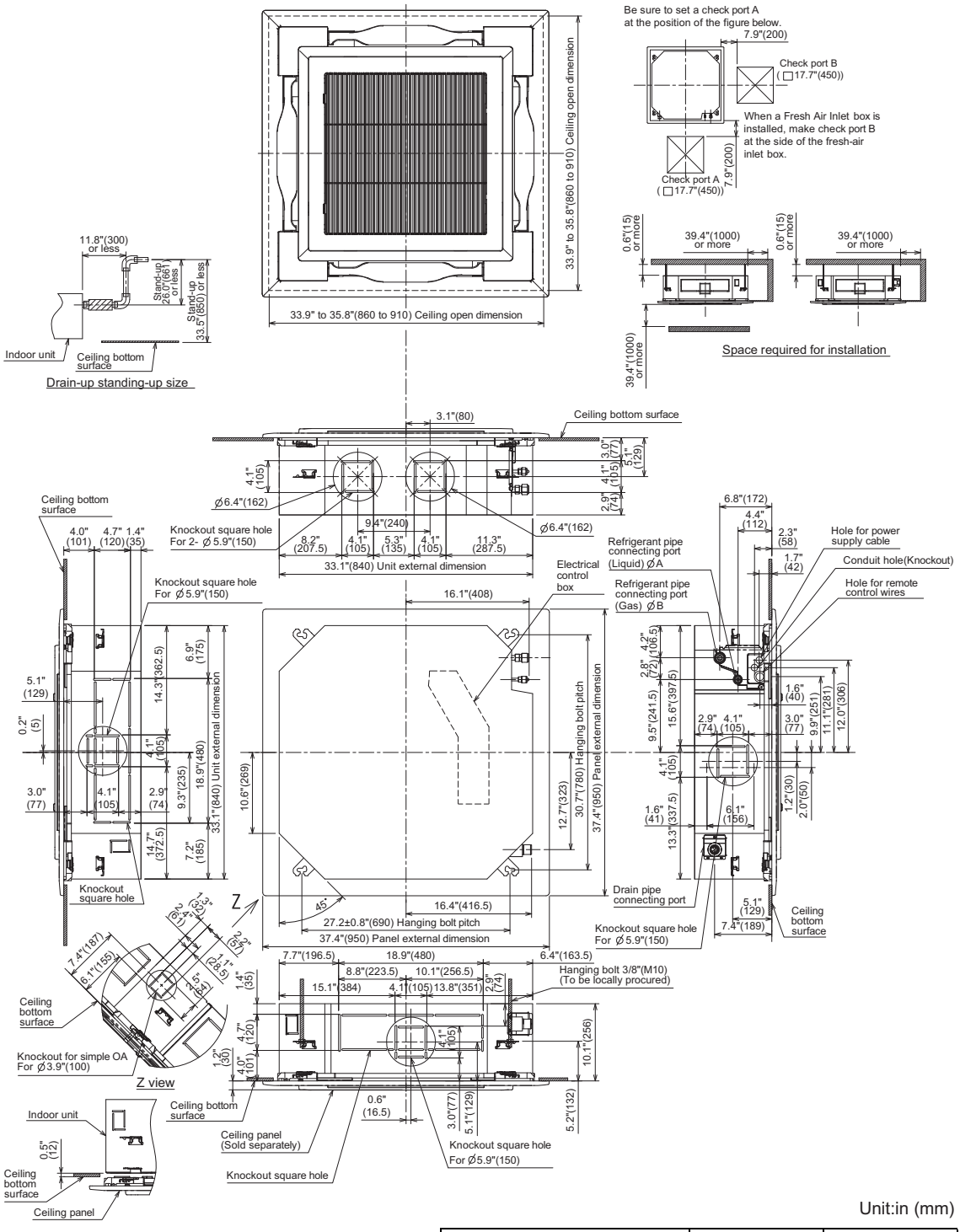
Note

* Figures in parentheses are for ceiling panels.

(*1) The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.

2. Dimensions

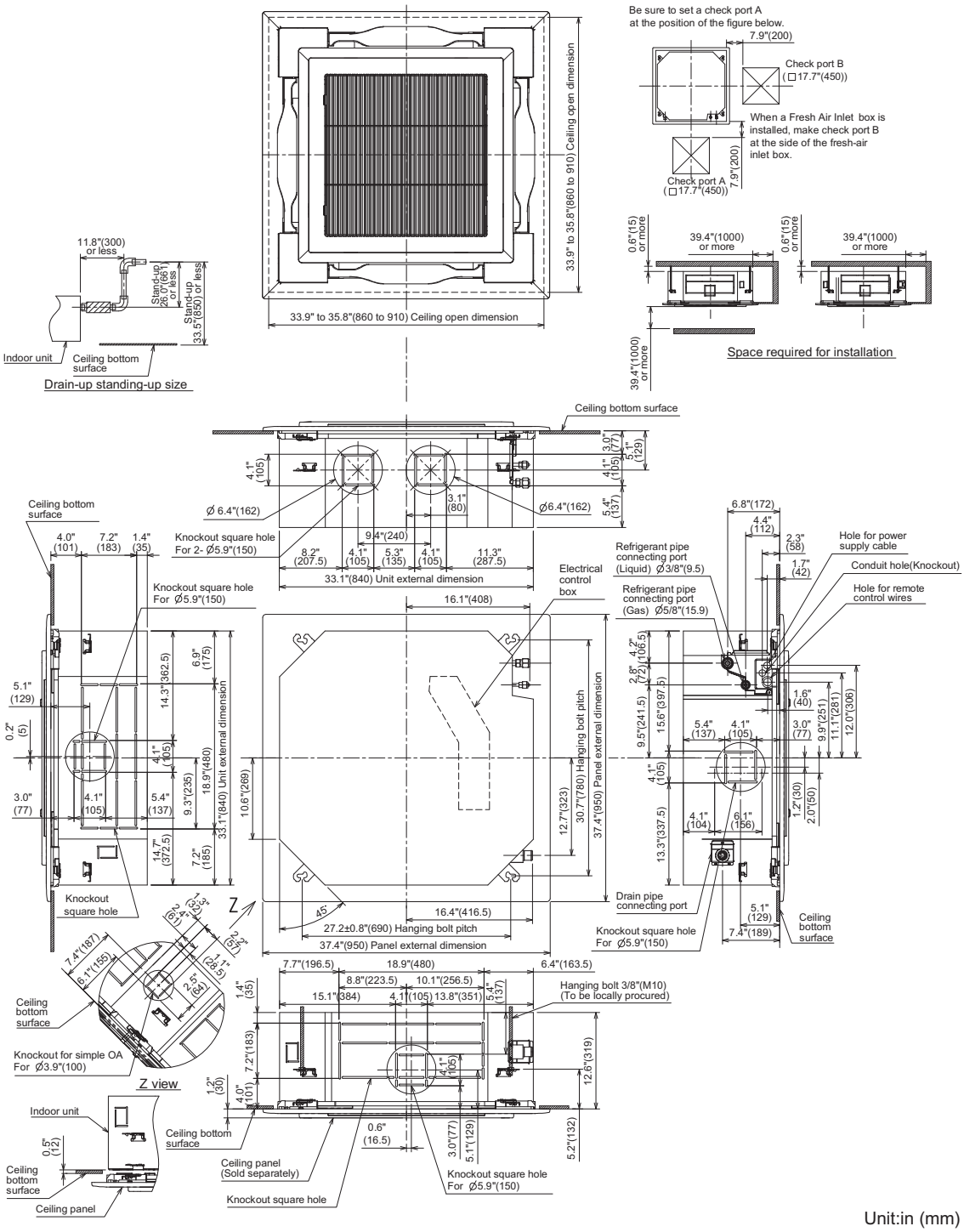
MMU-AP0152H2UL, AP0182H2UL, AP0212H2UL, AP0242H2UL, AP0302H2UL



Unit:in (mm)

Model MMU-	A	B
AP015, 018 Type	1/4" (6.4)	1/2" (12.7)
AP021, 024, 030 Type	3/8" (9.5)	5/8" (15.9)

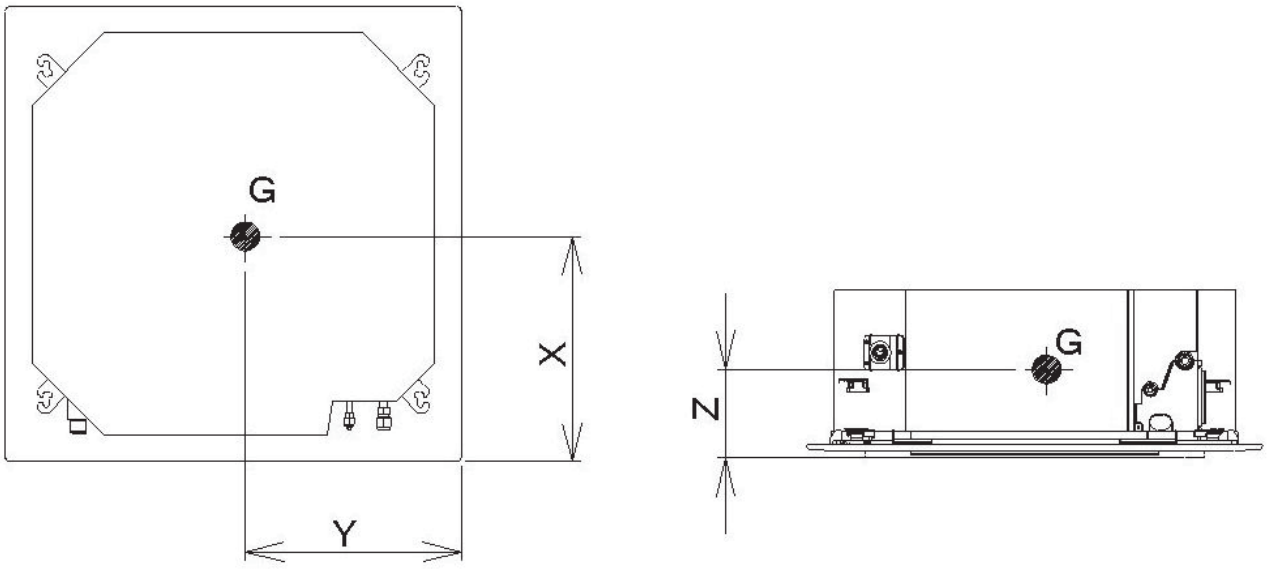
MMU-AP0362H2UL, AP0422H2UL



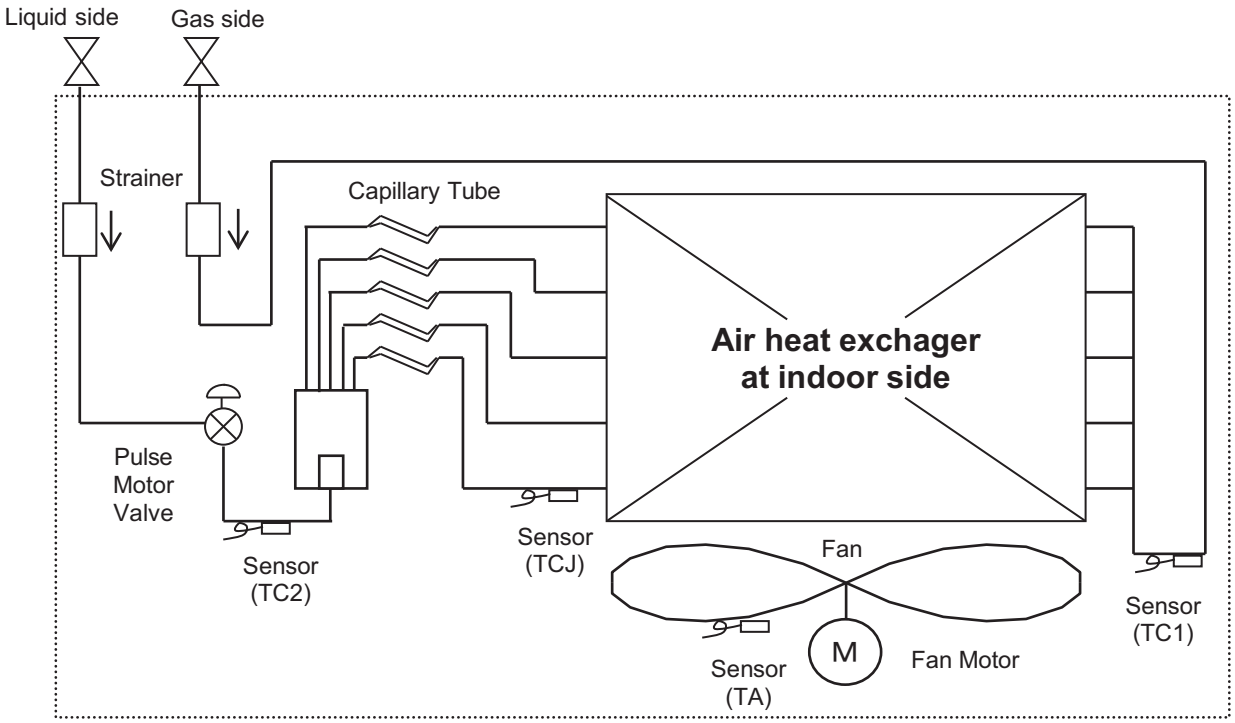
Unit:in (mm)

3. Center of gravity

Model name	X (In)	Y (In)	Z (In)	Total weight	
				Main unit (lbs)	Ceiling panel (lbs)
MMU-AP0152H2UL	18.5	17.9	6.05	44	10
MMU-AP0182H2UL					
MMU-AP0212H2UL					
MMU-AP0242H2UL					
MMU-AP0302H2UL					
MMU-AP0362H2UL		17.7	7.25	53	
MMU-AP0422H2UL					

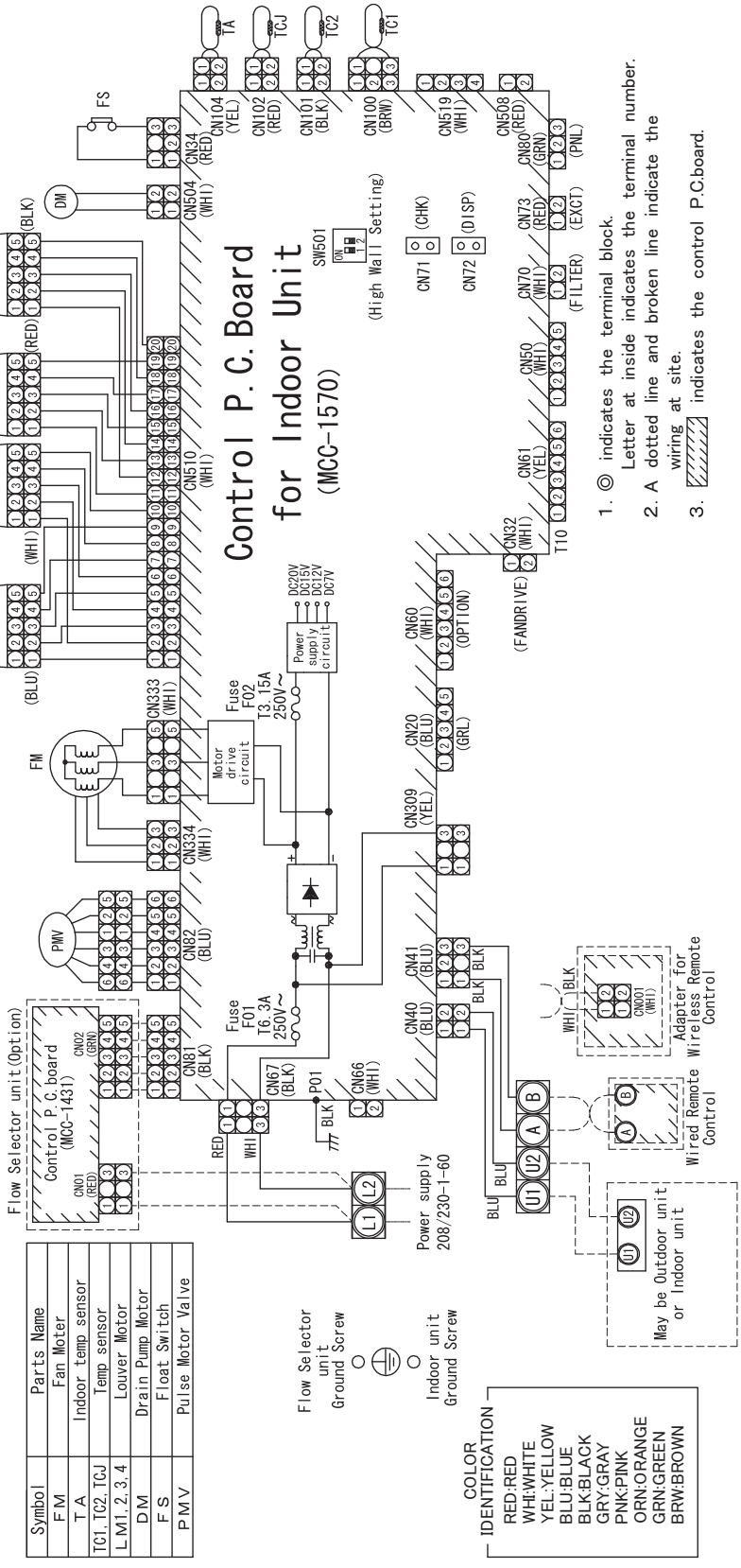


4. Piping diagram



5. Wiring diagram

MMU-AP0152H2UL, AP0182H2UL, AP0212H2UL, AP0242H2UL, AP0302H2UL, AP0362H2UL, AP0422H2UL



6. Electrical current characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range (V)		Power consumption	FLA	MCA	MOCP
			Min	Max	kW	A	A	A
4-Way Cassette type	MMU-AP0152H2UL	208/230-1-60	187	253	0.026	0.6	0.8	15
	MMU-AP0182H2UL	208/230-1-60	187	253	0.026	0.6	0.8	15
	MMU-AP0212H2UL	208/230-1-60	187	253	0.036	0.8	1.0	15
	MMU-AP0242H2UL	208/230-1-60	187	253	0.036	0.8	1.0	15
	MMU-AP0302H2UL	208/230-1-60	187	253	0.043	0.8	1.0	15
	MMU-AP0362H2UL	208/230-1-60	187	253	0.088	1.0	1.3	15
	MMU-AP0422H2UL	208/230-1-60	187	253	0.112	1.0	1.3	15

MCA : Minimum Circuit Amps
FLA : Full Load Amps
MOCP : Maximum Overcurrent Protection (Amps)

7. Sensible capacity table

4-Way Cassette type (MMU-AP***2H2UL)

TC: Total capacity [Btu/h] SHC: Sensible capacity [Btu/h]

unit size	outdoor air temp. °FDB	indoor air temp.													
		59 °FWB		61 °FWB		64 °FWB		67 °FWB		68 °FWB		72 °FWB		75 °FWB	
		71 °FDB		73 °FDB		77 °FDB		80 °FDB		82 °FDB		86 °FDB		90 °FDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
015	50	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	54	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	57	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	61	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	64	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	68	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	70	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	73	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	77	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	81	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	84	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	88	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	91	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	95	13110	10960	13710	11260	14580	11720	15400	12090	15660	12120	16660	11970	17340	11520
	99	12730	10640	13310	10930	14160	11380	14950	11740	15210	11770	16180	11620	16840	11190
	102	12430	10390	13000	10670	13820	11110	14600	11460	14850	11490	15790	11350	16440	10920
018	50	15320	11660	16030	11980	17040	12470	18000	12860	18310	12900	19470	12730	20270	12260
	54	15320	11660	16030	11980	17040	12470	18000	12860	18310	12900	19470	12730	20270	12260
	57	15320	11660	16030	11980	17040	12470	18000	12860	18310	12900	19470	12730	20270	12260
	61	15320	11660	16030	11980	17040	12470	18000	12860	18310	12900	19470	12730	20270	12260
	64	15320	11660	16030	11980	17040	12470	18000	12860	18310	12900	19470	12730	20270	12260
	68	15320	11660	16030	11980	17040	12470	18000	12860	18310	12900	19470	12730	20270	12260
	70	15320	11660	16030	11980	17040	12470	18000	12860	18310	12900	19470	12730	20270	12260
	73	15320	11660	16030	11980	17040	12470	18000	12860	18310	12900	19470	12730	20270	12260
	77	15320	11660	16030	11980	17040	12470	18000	12860	18310	12900	19470	12730	20270	12260
	81	15320	11660	16030	11980	17040	12470	18000	12860	18310	12900	19470	12730	20270	12260
	84	15320	11660	16030	11980	17040	12470	18000	12860	18310	12900	19470	12730	20270	12260
	88	15320	11660	16030	11980	17040	12470	18000	12860	18310	12900	19470	12730	20270	12260
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	95	15320	11660	16030	11980	17040	12470	18000	12860	18310	12900	19470	12730	20270	12260
	99	14880	11320	15570	11630	16550	12110	17480	12490	17780	12530	18910	12360	19680	11900
	102	14520	11050	15200	11360	16150	11820	17060	12190	17360	12230	18460	12070	19220	11620
021	50	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	54	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	57	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	61	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	64	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	68	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	70	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	73	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	77	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	81	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	84	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	88	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	91	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	95	17870	14150	18700	14540	19880	15130	21000	15610	21360	15650	22710	15450	23650	14880
	99	17350	13740	18160	14120	19300	14690	20390	15160	20740	15200	22050	15000	22960	14450
	102	16940	13410	17730	13780	18850	14340	19910	14800	20250	14840	21530	14650	22420	14110
024	50	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	54	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	57	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	61	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	64	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	68	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	70	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	73	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	77	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	81	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	84	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	88	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	91	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	95	20430	15020	21370	15430	22730	16060	24000	16563	24410	16610	25960	16400	27020	15780
	99	19838	14584	20750	14983	22071	15594	23304	16083	23702	16128	25207	15924	26236	15322
	102	19368	14239	20259	14628	21548	15225	22752	15702	23141	15746	24610	15547	25615	14959

4-Way Cassette type (MMU-AP***2H2UL)

TC: Total capacity [Btu/h] SHC: Sensible capacity [Btu/h]

unit size	outdoor air temp. °FDB	indoor air temp.													
		59 °FWB		61 °FWB		64 °FWB		67 °FWB		68 °FWB		72 °FWB		75 °FWB	
		71 °FDB		73 °FDB		77 °FDB		80 °FDB		82 °FDB		86 °FDB		90 °FDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
030	50	25530	18740	26720	19260	28410	20040	30000	20670	30510	20720	32450	20470	33780	19700
	54	25530	18740	26720	19260	28410	20040	30000	20670	30510	20720	32450	20470	33780	19700
	57	25530	18740	26720	19260	28410	20040	30000	20670	30510	20720	32450	20470	33780	19700
	61	25530	18740	26720	19260	28410	20040	30000	20670	30510	20720	32450	20470	33780	19700
	64	25530	18740	26720	19260	28410	20040	30000	20670	30510	20720	32450	20470	33780	19700
	68	25530	18740	26720	19260	28410	20040	30000	20670	30510	20720	32450	20470	33780	19700
	70	25530	18740	26720	19260	28410	20040	30000	20670	30510	20720	32450	20470	33780	19700
	73	25530	18740	26720	19260	28410	20040	30000	20670	30510	20720	32450	20470	33780	19700
	77	25530	18740	26720	19260	28410	20040	30000	20670	30510	20720	32450	20470	33780	19700
	81	25530	18740	26720	19260	28410	20040	30000	20670	30510	20720	32450	20470	33780	19700
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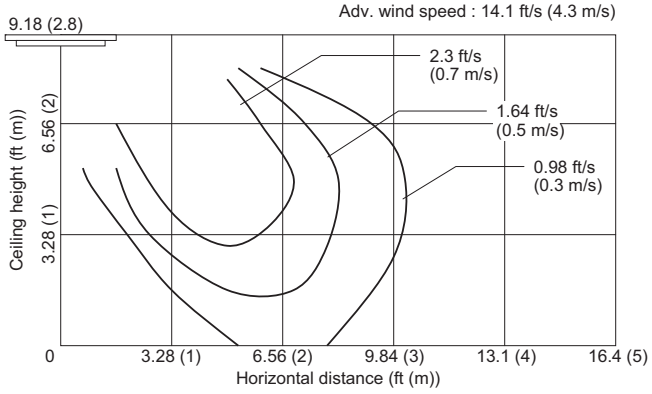
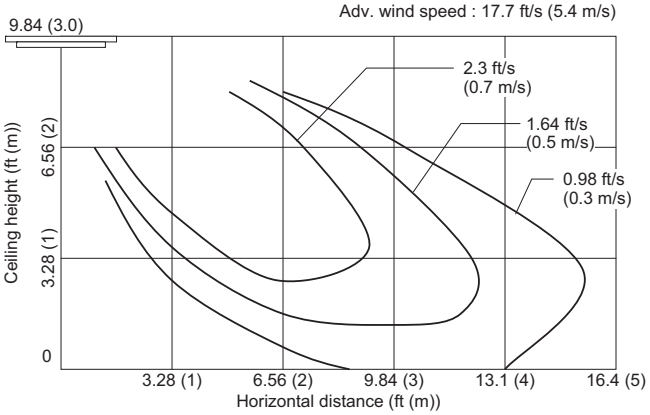
	91	25530	18740	26720	19260	28410	20040	30000	20670	30510	20720	32450	20470	33780	19700
	95	25530	18740	26720	19260	28410	20040	30000	20670	30510	20720	32450	20470	33780	19700
	99	24790	18200	25950	18700	27590	19460	29130	20070	29630	20120	31510	19880	32800	19130
	102	24200	17770	25330	18260	26930	19000	28440	19600	28920	19640	30760	19410	32020	18680
036	50	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	54	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	57	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	61	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	64	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	68	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	70	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	73	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	77	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	81	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	84	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	88	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	91	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	95	30640	22440	32060	23060	34090	24000	36000	24750	36620	24820	38930	24500	40540	23590
	99	29750	21790	31130	22390	33100	23300	34960	24030	35560	24100	37800	23790	39360	22910
	102	29050	21270	30390	21860	32320	22750	34130	23460	34720	23530	36910	23230	38430	22360
042	50	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	54	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	57	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	61	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	64	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	68	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	70	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	73	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	77	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	81	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	84	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	88	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	91	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	95	35750	26660	37400	27380	39770	28500	42000	29400	42720	29480	45420	29100	47290	28020
	99	34710	25890	36320	26590	38620	27670	40780	28550	41480	28630	44100	28260	45920	27210
	102	33890	25270	35460	25960	37700	27020	39820	27870	40500	27950	43060	27590	44830	26560

8. Air throw distance chart

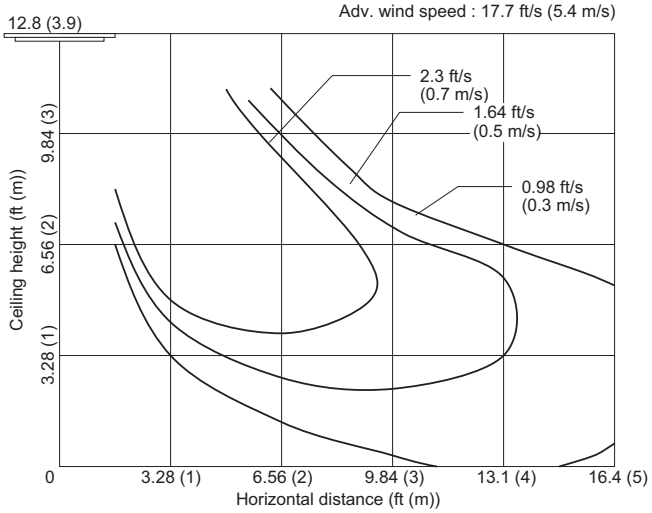
MMU-AP0152H2UL/AP0182H2UL



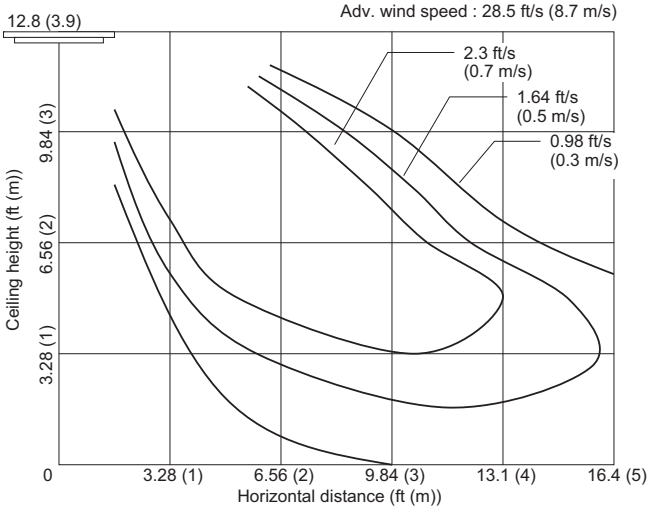
MMU-AP0212H2UL/AP0242H2UL/AP0302H2UL



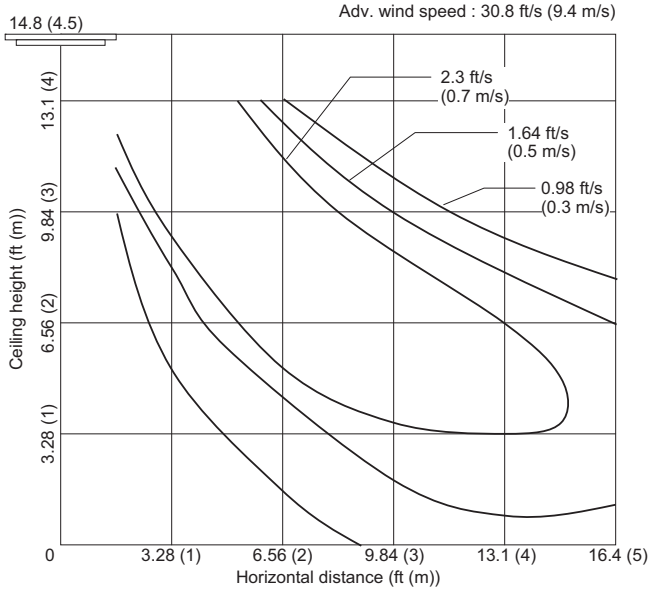
MMU-AP0362H2UL



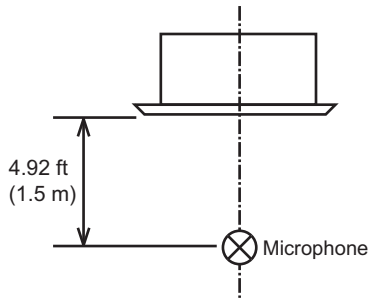
MMU-AP0422H2UL



MMU-AP0362H2UL/AP0422H2UL (High ceiling (3))

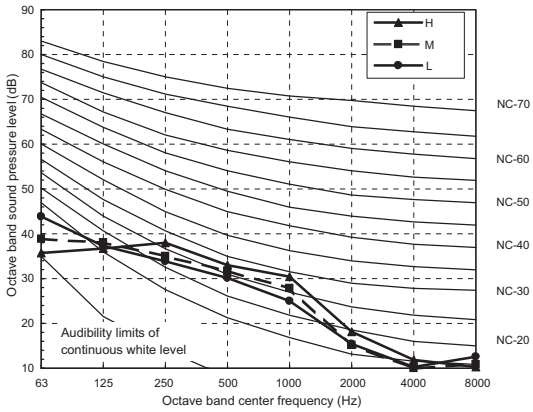


9. Sound data



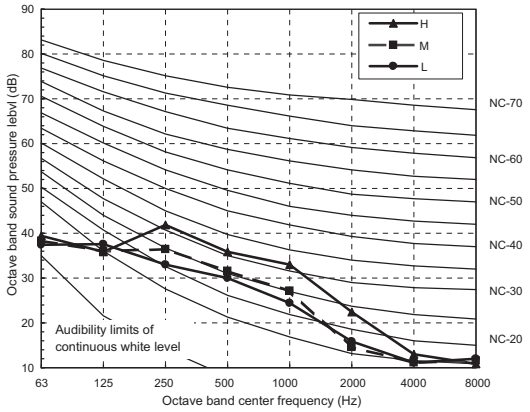
MMU-AP0152H2UL/0182H2UL

Sound pressure level (dB (A))	H - M - L
	35-33-31



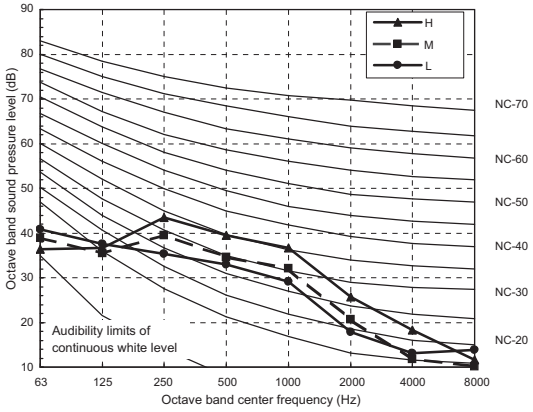
MMU-AP0212H2UL/0242H2UL

Sound pressure level (dB (A))	H - M - L
	38-33-31



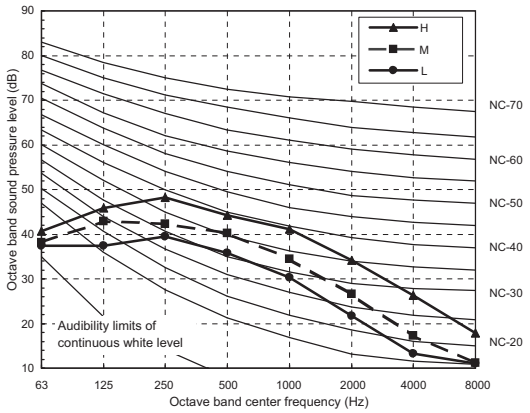
MMU-AP0302H2UL

Sound pressure level (dB (A))	H - M - L
	41-36.5-34



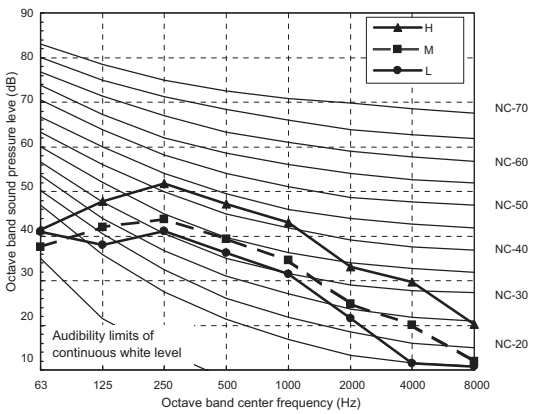
MMU-AP0362H2UL

Sound pressure level (dB (A))	H - M - L
	46-40.5-36.5



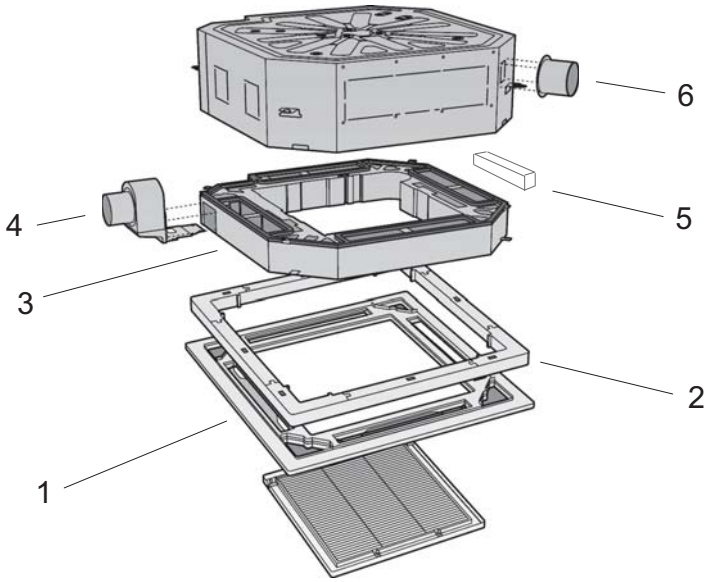
MMU-AP0422H2UL

Sound pressure level (dB (A))	H - M - L
	48.5-40.5-37.5



10. Accessories

Optional parts for 4-Way Cassette type



Optional parts list

No	Type	Model name	Qty/unit	Notes
1	Ceiling Panel	RBC-U31PG(W)-UL	1	White (2.5GY9.0/0.5)
2	Spacer for height adjustment	TCB-SP1602UUL	1	50 mm
3	Fresh-air chamber	TCB-GFC1602UUL	1	Use with TCB-GB1602UUL
4	Fresh-air inlet box	TCB-GB1602UUL	1	Connection=Dia.100 mm
5	Air-discharge direction kit	TCB-BC1602UUL	1	6-direction patterns
6	Auxiliary fresh air flange	TCB-FF101URUL	1	Connection=Dia.100 mm

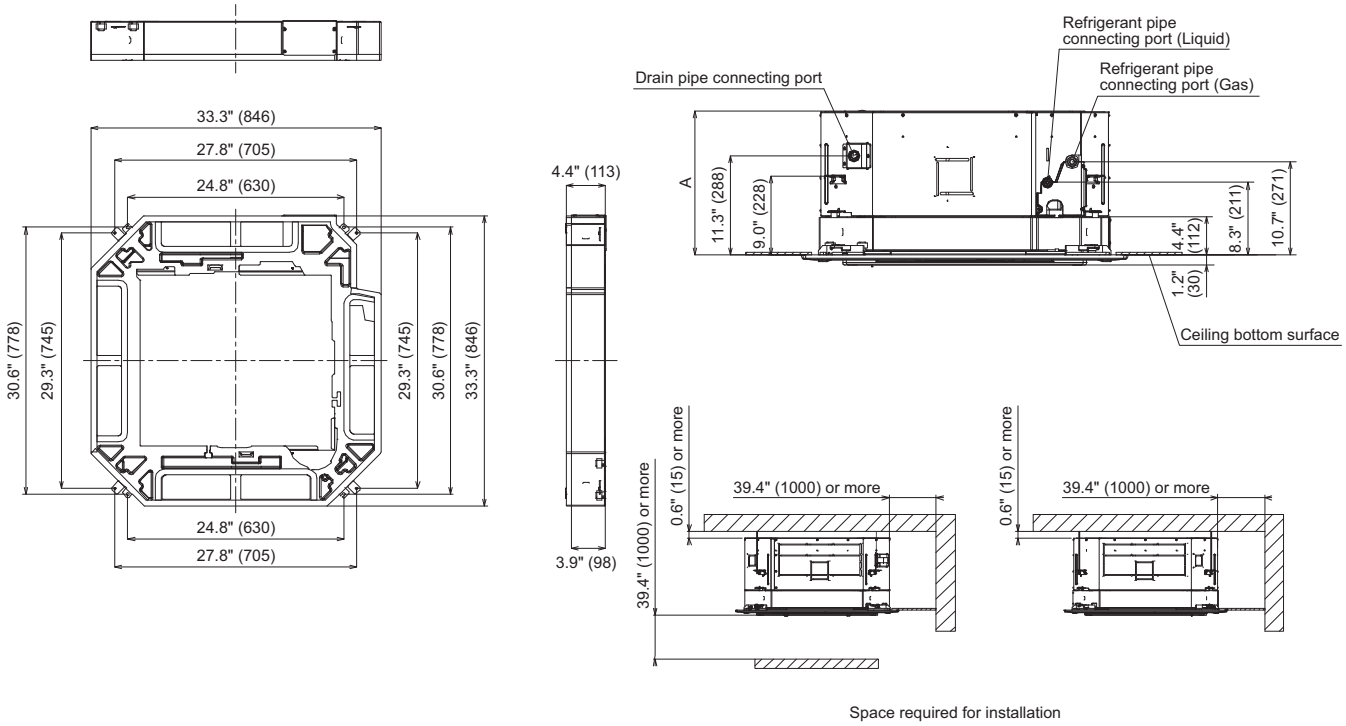
Combination pattern

			Ceiling Panel RBC-U31PG(W)-UL	Wireless remote control kit RBC-AX31U(W)-UL	Spacer for height adjustment TCB-SP1602UUL	Fresh-air chamber TCB-GFC1602UUL	Fresh-air inlet box + Fresh-air chamber TCB-GB1602UUL + TCB-GFC1602UUL	Air-discharge direction kit TCB-BC1602UUL	Auxiliary fresh air flange TCB-FF101URUL
Panel	Ceiling Panel	RBC-U31PG(W)-UL		OK	OK	OK	OK	OK	OK
	Wireless remote control kit	RBC-AX31U(W)-UL	OK		OK	OK	OK	OK	OK
Optional parts	Spacer for height adjustment	TCB-SP1602UUL	OK	OK		OK	—	OK	OK
	Fresh-air chamber	TCB-GFC1602UUL	OK	OK	OK		—	OK	OK
	Fresh-air inlet box + Fresh-air chamber	TCB-GB1602UUL + TCB-GFC1602UUL	OK	OK	—	—		OK	OK
	Air-discharge direction kit	TCB-BC1602UUL	OK	OK	OK	OK	OK		OK
	Auxiliary fresh air flange	TCB-FF101URUL	OK	OK	OK	OK	OK	OK	

11. Reference

11-1 Fresh-air chamber (TCB-GFC1602UUL)

Unit : in (mm)



	A
015 to 030 type	14.0" (356)
036 to 042 type	16.5" (419)

11-2 Fresh-air inlet box (TCB-GB1602UUL)

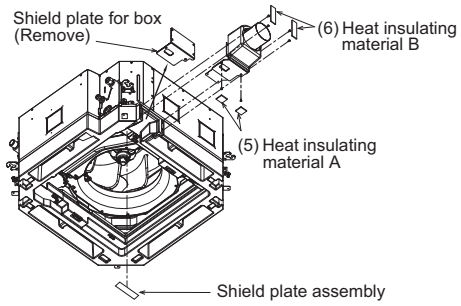
Accessories

(The following parts are included.)

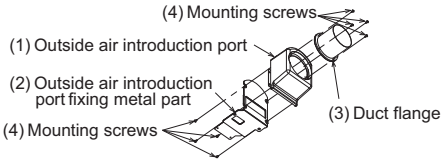
No.	Name	Qty	Remark
(1)	Outside air introduction port	1	
(2)	Outside air introduction port fixing metal part	1	
(3)	Duct flange Ø3.9" (100 mm)	1	
(4)	Mounting screws 0.16" x 0.4" (4 x 10 mm)	16	
(5)	Heat insulating material A	2	
(6)	Heat insulating material B	2	
(7)	Wind shield	1	
(8)	Installation manual	1	
(9)	Wire	1	

Installation

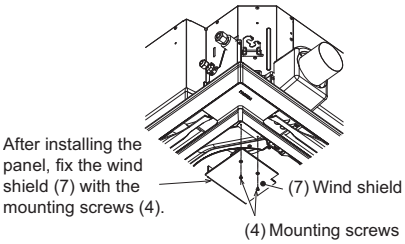
(Fig. 1)



(Fig. 2)

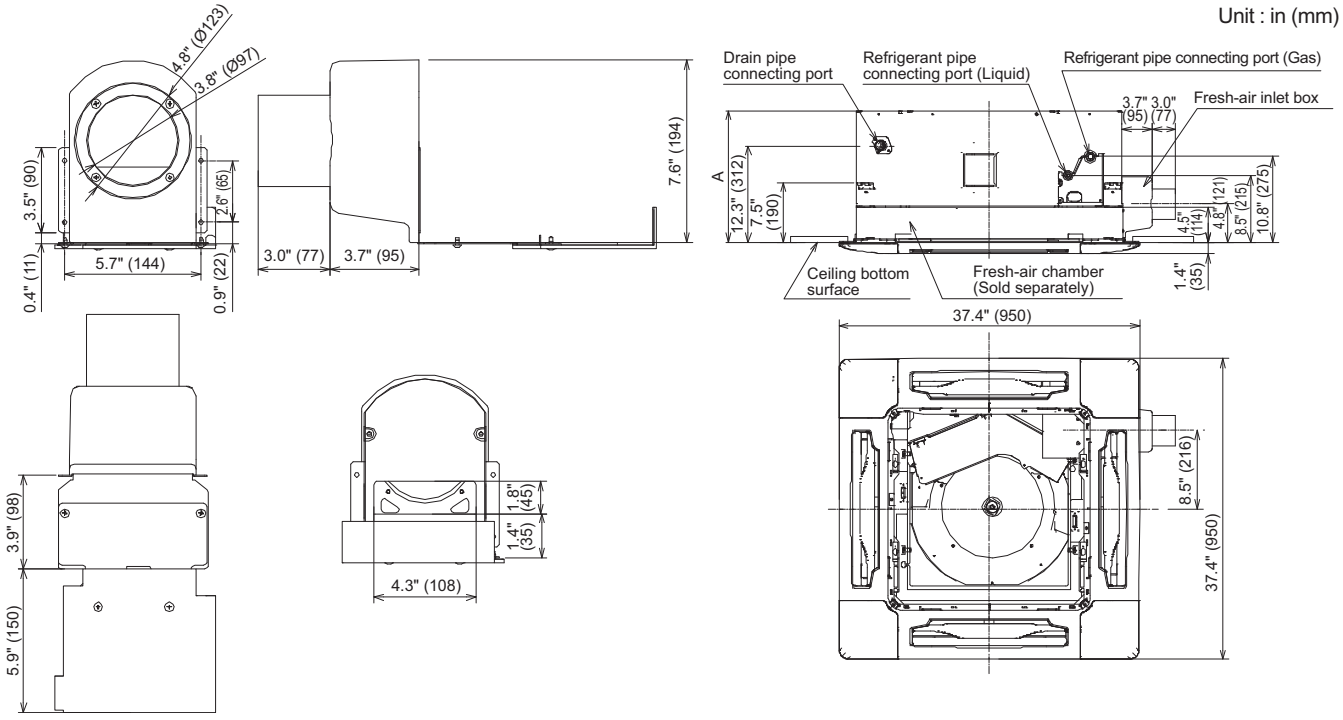


(Fig. 3)



Dimension

Unit : in (mm)



	A
015 to 030 type	14.1" (358)
036 to 042 type	16.6" (421)

NOTE

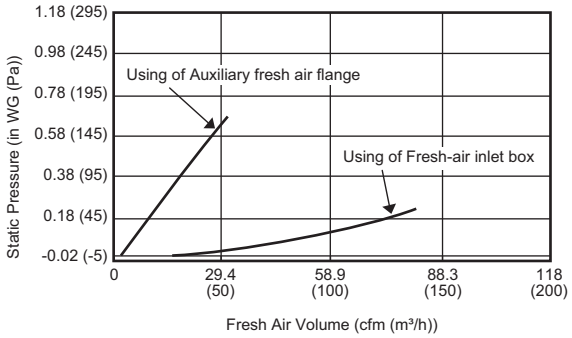
This inlet box shall be used with the fresh-air chamber.

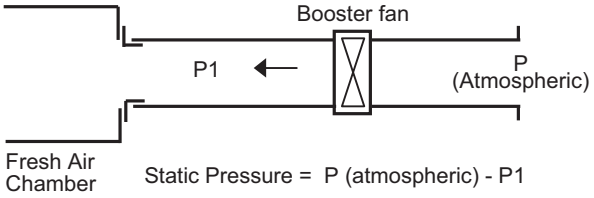
11-3 Fresh Air Intake

4-Way Cassette type

Usage
Fresh air is taken by using Fresh-air chamber and Fresh-air inlet box. And also is subsidiarily taken by using Auxiliary fresh air flange through the knock-out hole of the indoor unit body.

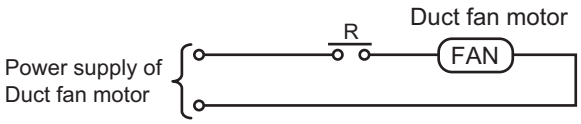
Caution
1. Be sure to provide air return.
2. The fresh air shall be treated by heat reclaim ventilator or the like.
3. Recommended treated air temperature is 54 °F to 86 °F.
4. Be sure to decide the fresh air volume so that mixed suction air with fresh air keep operating temperature. Provide an air filter in fresh air way to prevent sucking dust.
5. Be sure to insulate the fresh air duct. In order to accelerate starting up in heating mode, implement pre-heating operation by cutting off Fresh Air Intake.
6. The operating sound might increase when fresh air intake.

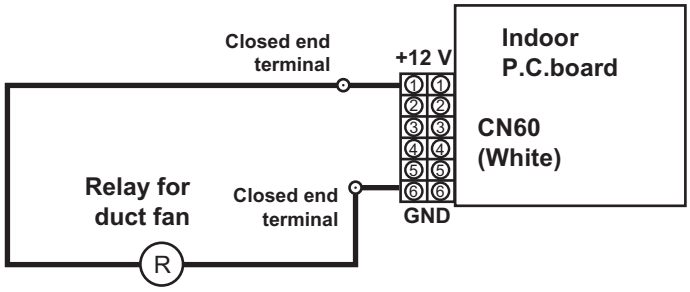




Characteristics between air volume of branching duct and static pressure
Following fresh air intake ratio is available by using the booster fan.
1. Fresh-air inlet box with Fresh-air chamber
   Up to 88 cfm and 10 % of rated air volume
2. Auxiliary fresh air flange through the knock-out hole of the indoor unit body
   Up to 24 cfm

Inter - lock circuit
1. Connect the driving relay of the duct fan (DC 12 V) between 1 and 6 on the indoor P.C.board.
   Part indicated with a bold line is the connecting circuit.
   After installation, implement a test run to check that the duct fan of the indoor unit start / stop simultaneously.
   (Implement the test run following to the installation manual of the indoor unit.)

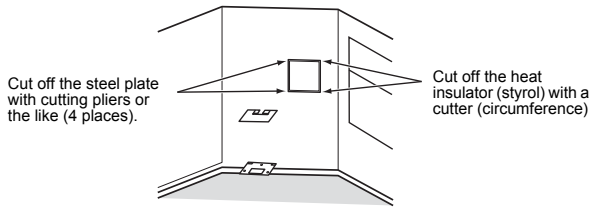




11-4 Auxiliary fresh air flange (TCB-FF101URUL)

Installation

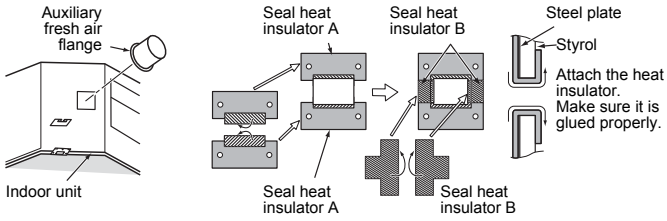
1. Using the knockout of the indoor unit main body, as a marker, cut off the flange with the heat insulator (styrol) with cutting pliers or cutter.



NOTE

When cutting off the styrol inside, be careful not to insert the cutter blade deeper than 1.2" (30mm). (Damage to the drain pan inside can cause water leakage.)
Wear safety globes to carry out these works. Do not attempt with bare hands.

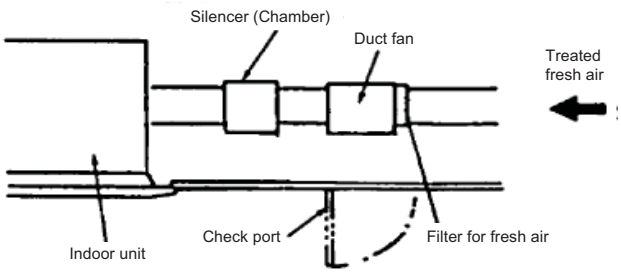
2. A gap between the styrol and steel plate may cause a trouble such as condensation. Be sure to attach the attached heat insulator A first with it aligned to the screw hole, and then attach B, according to the right figure.
3. Install the auxiliary fresh air flange to the indoor unit main body with attached 4 fixing screws.



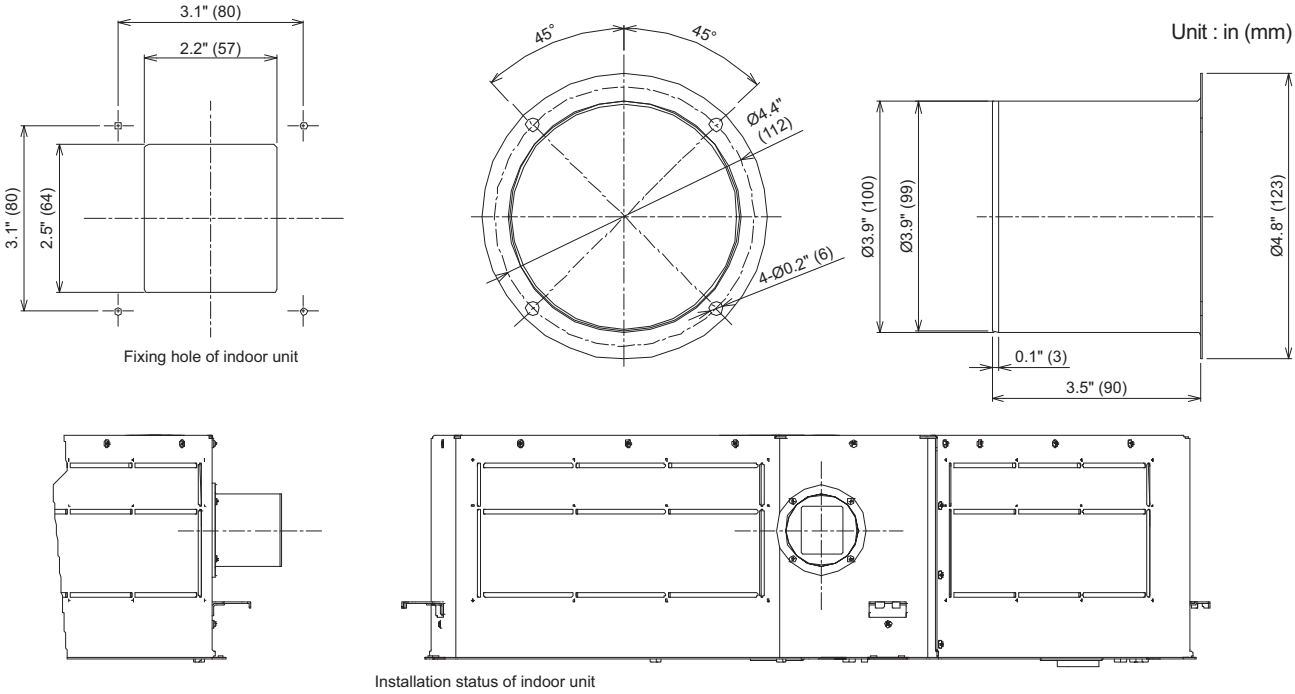
Duct fan

In order to take fresh air, provide the duct fan separately.

1. Install the filter for fresh air
2. Provide the check port beneath the duct fan for maintenance.
3. Connect the duct fan and the indoor unit with inter-lock wiring.
4. Provide the silencer to prevent the effect of noise.

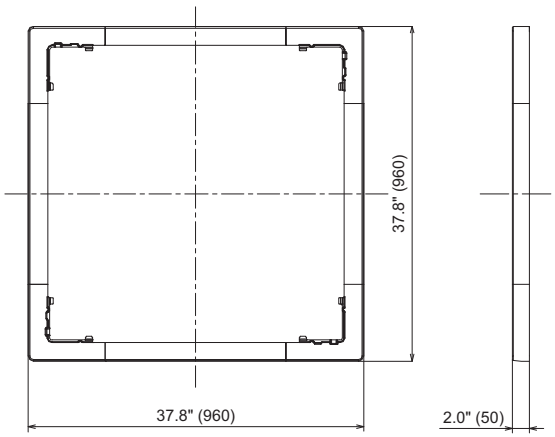


Dimension

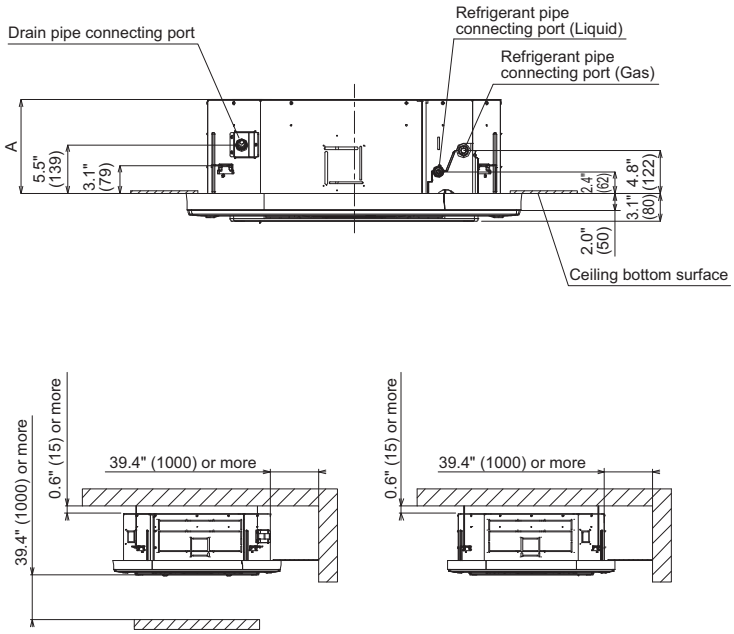


11-5 Spacer for height adjustment (TCB-SP1602UUL)

Unit : in (mm)



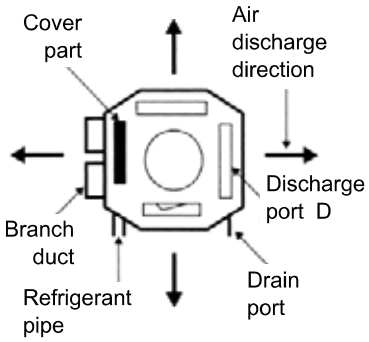
Material : Styrene foam
Color : Moon white

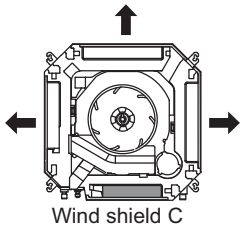
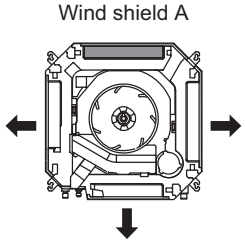
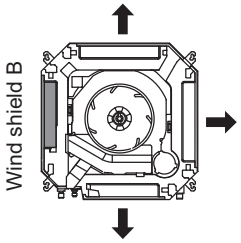
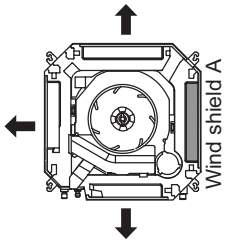
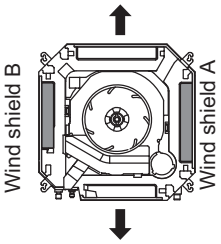
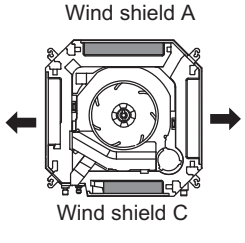
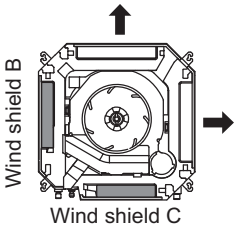


Space required for installation

	A
015 to 030 type	8.1" (206)
036 to 042 type	10.6" (269)

11-6 Air discharge direction kit (TCB-BC1602UUL)



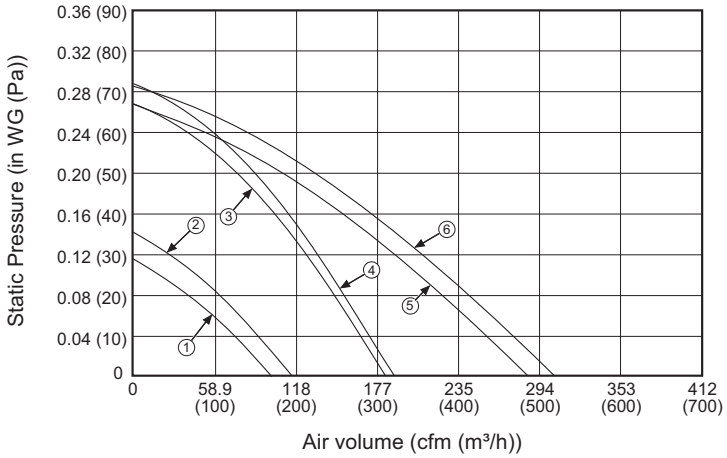
			Limited models only	
3-way air flow				
	Available for all models	Available for all models	Available only for 015 to 024 type	Available only for 030 to 042 type
2-way air flow				
	Available for all models	Available for all models	Available for all models	

11-7 Branching duct

4-Way Cassette type

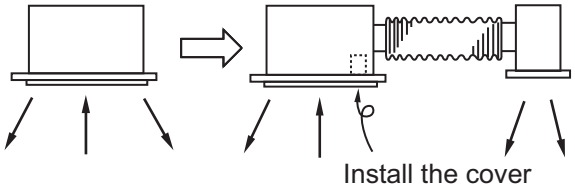
Characteristics between air volume of branching duct and static pressure

In case of connecting dia.= 5.91 inch (150 mm) branching duct, static pressure is as follows.



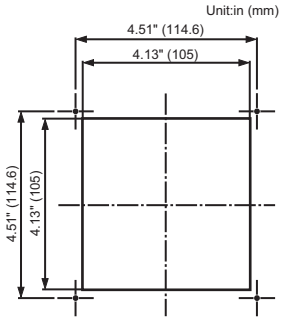
	Model
①	015, 018, 021 type : 3 directions + 1 branch
②	024, 030 type : 3 directions + 1 branch
③	036 type : 3 directions + 1 branch
④	042 type : 3 directions + 1 branch
⑤	036 type : 3 directions + 2 branches
⑥	042 type : 3 directions + 2 branches

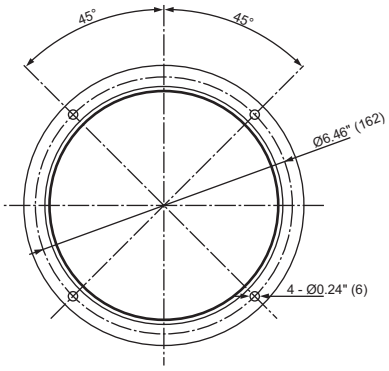
Cover method

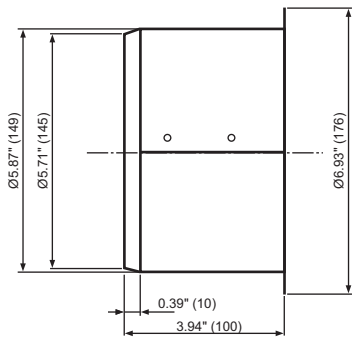


Use air discharge direction kit
(TCB-BC1602UUL)
to cover the air discharge port.

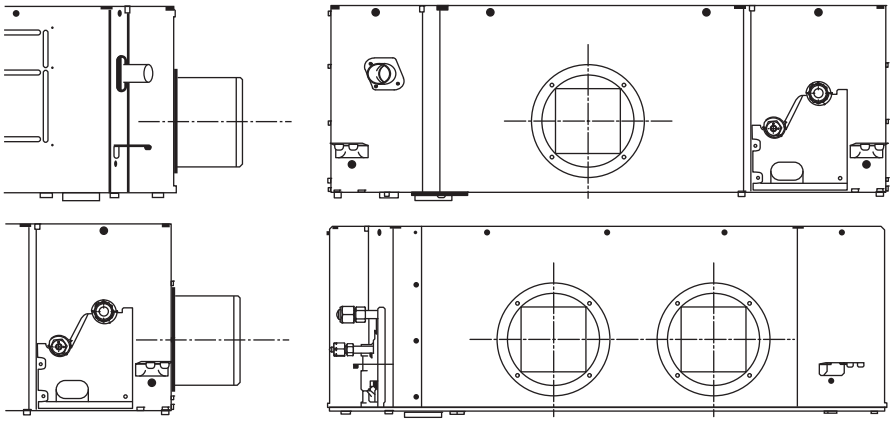
Dimension







Design sample of branching duct flange



Installation sample

6-2. Compact 4-Way Cassette type

Compact 4-Way Cassette type

MMU-AP0071MH2UL
MMU-AP0091MH2UL
MMU-AP0121MH2UL
MMU-AP0151MH2UL
MMU-AP0181MH2UL

Contents

1. Specifications

Compact 4-Way Cassette type

Model name				MMU-	AP0071MH2UL	AP0091MH2UL	AP0121MH2UL	AP0151MH2UL	AP0181MH2UL
Cooling Capacity				kBtu/h	7.5	9.5	12	15.4	18
Heating Capacity				kBtu/h	8.5	10.5	13.5	17	20
Electrical characteristics	Power supply				230 V (208/230 V) 1phase 60 Hz				
	Power consumption			kW	0.034	0.036	0.038	0.041	0.052
Appearance	Main unit				Zinc hot dipping steel plate Heat-insulating material attached to only upper plate				
	Ceiling panel	Model			RBC-U11PG(W)-UL				
		Panel color			White (2.5GY9.0/0.5)				
Dimension (Ceiling panel)*	Unit	Height		In	10.6(1.1)*	10.6(1.1)*	10.6(1.1)*	10.6(1.1)*	10.6(1.1)*
		Width		In	22.6(27.6)*	22.6(27.6)*	22.6(27.6)*	22.6(27.6)*	22.6(27.6)*
		Depth		In	22.6(27.6)*	22.6(27.6)*	22.6(27.6)*	22.6(27.6)*	22.6(27.6)*
	Packing	Height		In	12.7(3.9)*	12.7(3.9)*	12.7(3.9)*	12.7(3.9)*	12.7(3.9)*
		Width		In	25.1(30.9)*	25.1(30.9)*	25.1(30.9)*	25.1(30.9)*	25.1(30.9)*
		Depth		In	27.8(31.8)*	27.8(31.8)*	27.8(31.8)*	27.8(31.8)*	27.8(31.8)*
Total weight (Ceiling panel)*	Unit			lbs	35(7)*	35(7)*	35(7)*	35(7)*	35(7)*
	Packed unit			lbs	42(13)*	42(13)*	42(13)*	42(13)*	42(13)*
Heat exchanger					Finned tube				
Fan unit	Fan				Turbo fan				
	Standard air flow (High/Mid/Low)			cfm	320/270/220	330/280/220	330/300/240	390/330/280	450/380/310
	Motor			W	60	60	60	60	60
Air filter					Long life filter				
Connecting pipe	Gas side			In	3/8"	3/8"	3/8"	1/2"	1/2"
	Liquid side			In	1/4"	1/4"	1/4"	1/4"	1/4"
	Drain port (Nominal dia.)			In	VP25(Polyvinyl chloride tube: External Dia.1-1/4 Internal Dia.1)				
Sound pressure level (High/Mid/Low) (*1)				dB(A)	38.5/35/31	40/35.5/31	40/36/32	42.5/37.5/33	46.5/41.5/36

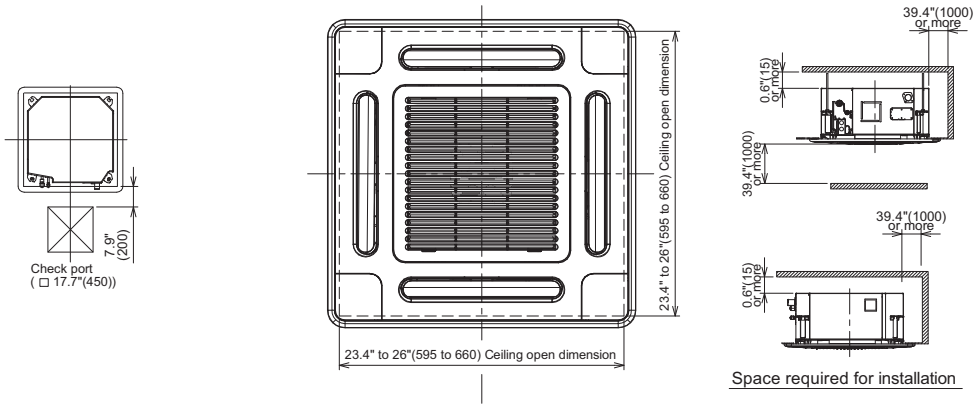
Note

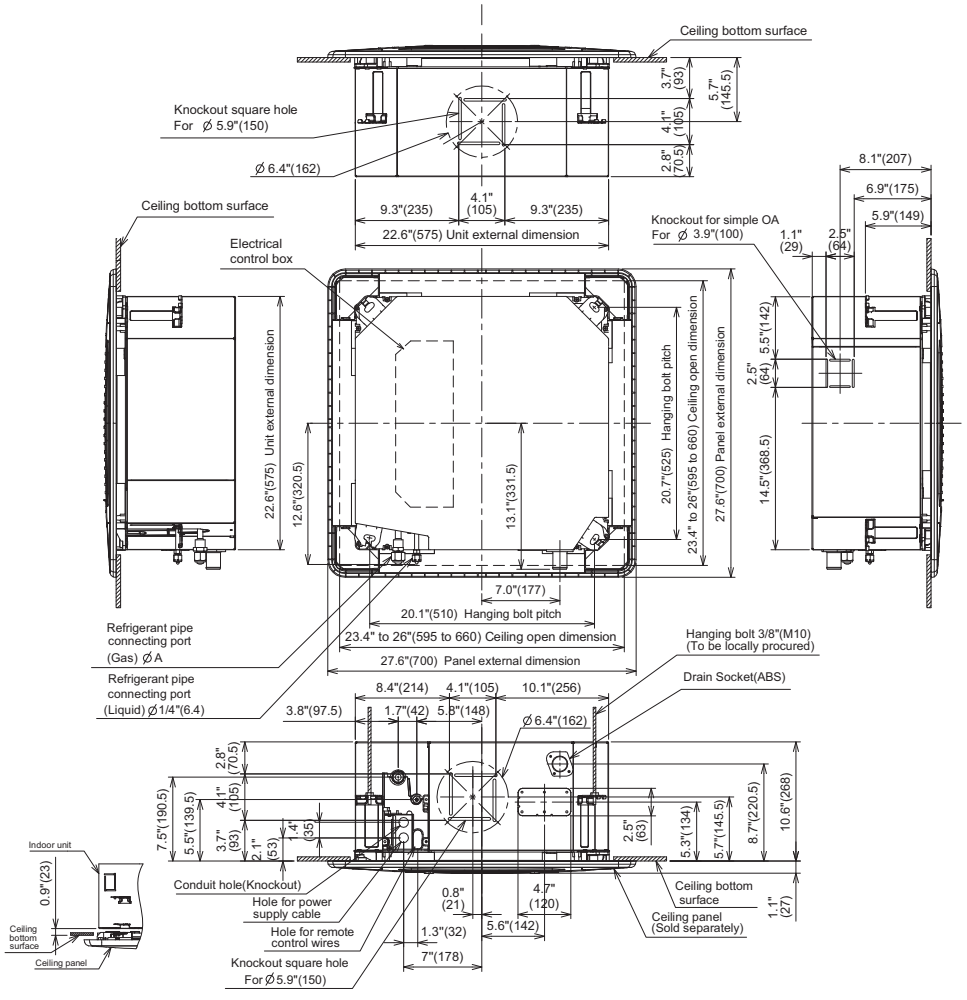
* Figures in parentheses are for ceiling panels.

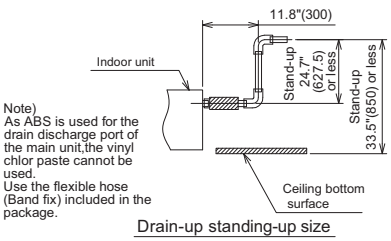
(*1) The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.

2. Dimensions

MMU-AP0071MH2UL, AP0091MH2UL, AP0121MH2UL, AP0151MH2UL, AP0181MH2UL







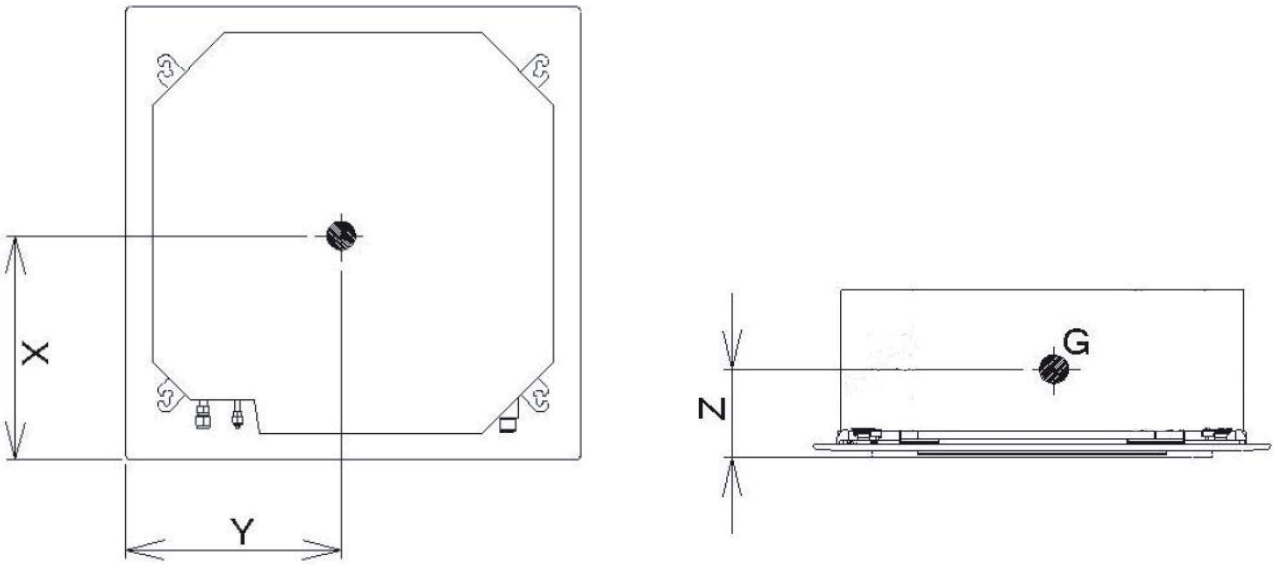
Drain-up standing-up size

Unit:in (mm)

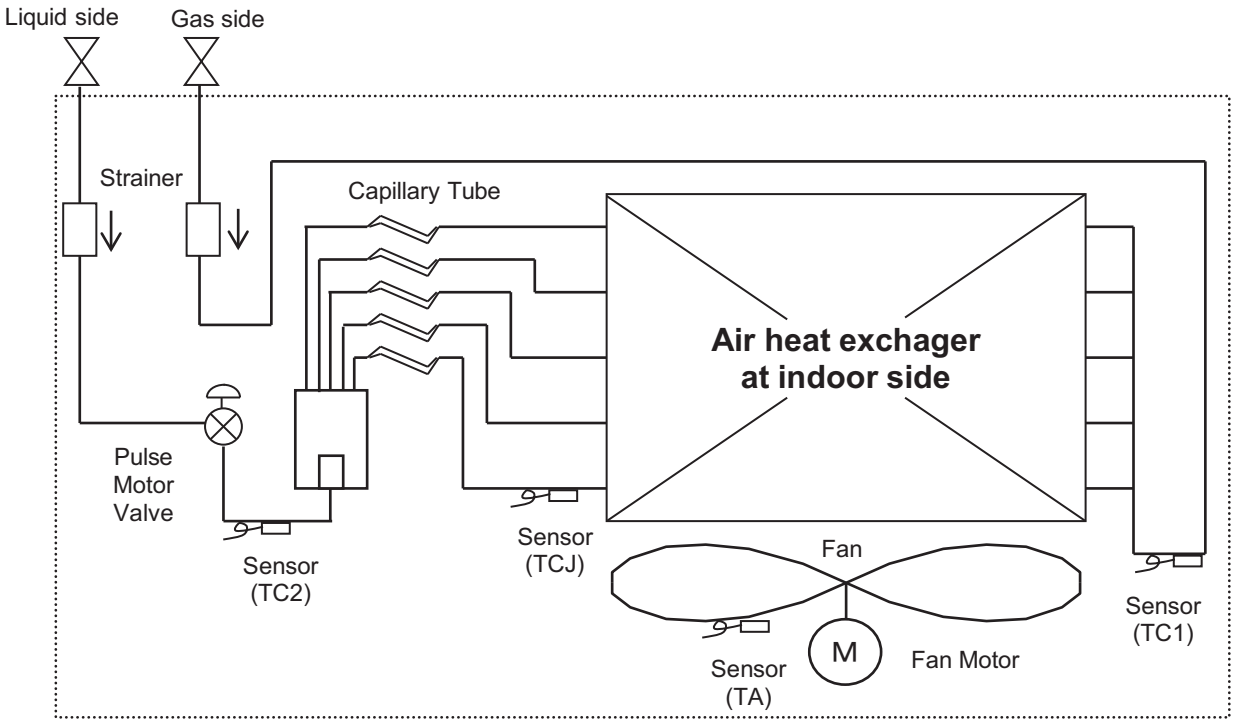
Model MMU-	A
AP007, 009, 012 Type	3/8" (9.5)
AP015, 018 Type	1/2" (12.7)

3. Center of gravity

Model name	X (In)	Y (In)	Z (In)	Total weight	
				Main unit (lbs)	Ceiling panel (lbs)
MMU-AP0071MH2UL	12.46	13.25	6.85	35	6.6
MMU-AP0091MH2UL					
MMU-AP0121MH2UL					
MMU-AP0151MH2UL					
MMU-AP0181MH2UL					

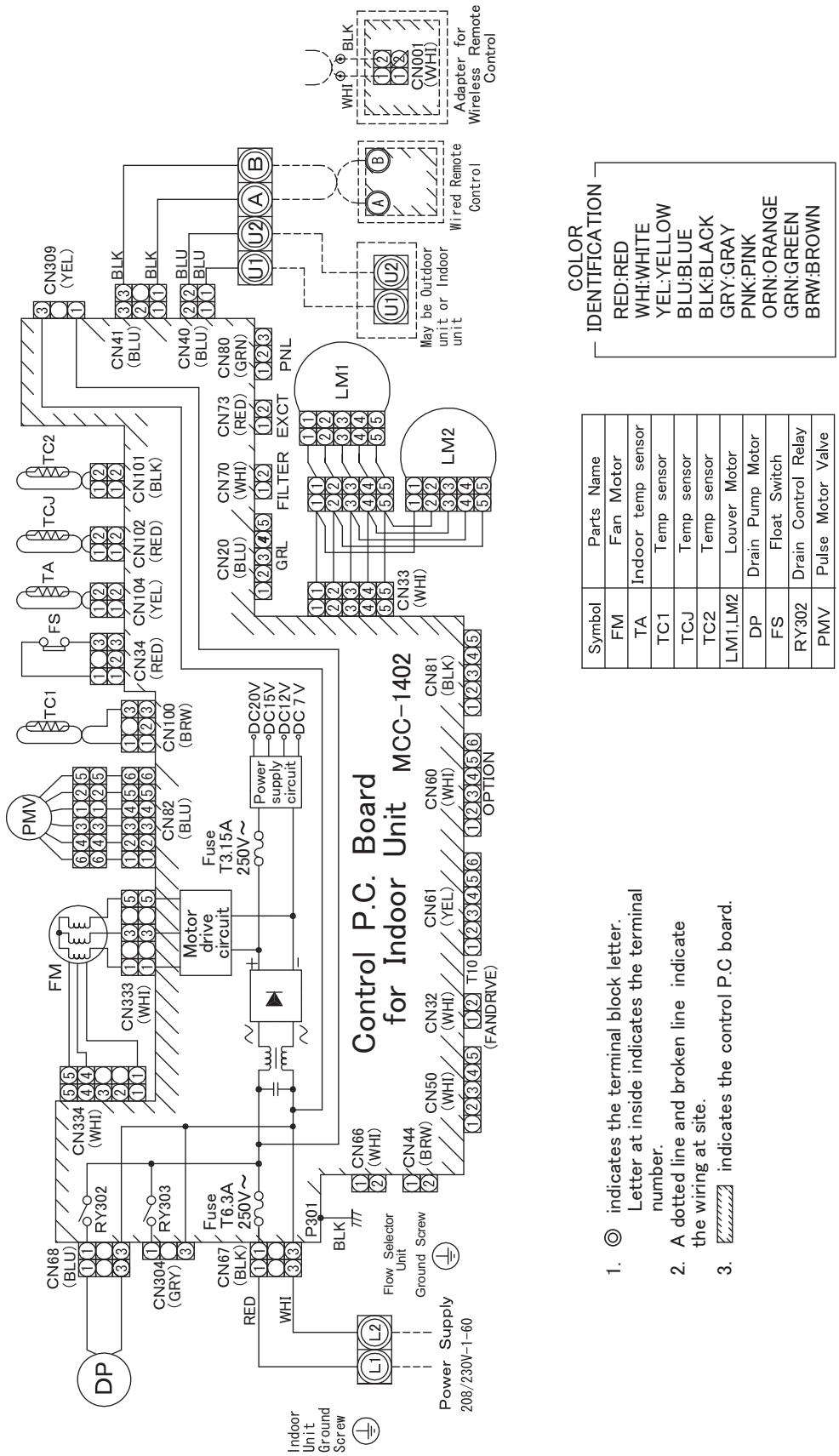


4. Piping diagram



5. Wiring diagram

MMU-AP0071MH2UL, AP0091MH2UL, AP0121MH2UL, AP0151MH2UL, AP0181MH2UL



Symbol	Parts Name
FM	Fan Motor
TA	Indoor temp sensor
TC1	Temp sensor
TCJ	Temp sensor
TC2	Temp sensor
LM1,LM2	Louver Motor
DP	Drain Pump Motor
FS	Float Switch
RY302	Drain Control Relay
PMV	Pulse Motor Valve

1. ◎ indicates the terminal block letter. Letter at inside indicates the terminal number.
2. A dotted line and broken line indicate the wiring at site.
3. ▨ indicates the control P.C board.

6. Electrical current characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range (V)		Power consumption	FLA	MCA	MOCP
			Min	Max	kW	A	A	A
Compact 4-Way Cassette type	MMU-AP0071MH2UL	208/230-1-60	187	253	0.034	0.4	0.5	15
	MMU-AP0091MH2UL	208/230-1-60	187	253	0.036	0.4	0.5	15
	MMU-AP0121MH2UL	208/230-1-60	187	253	0.038	0.4	0.5	15
	MMU-AP0151MH2UL	208/230-1-60	187	253	0.041	0.5	0.7	15
	MMU-AP0181MH2UL	208/230-1-60	187	253	0.052	0.5	0.7	15

MCA : Minimum Circuit Amps
FLA : Full Load Amps
MOCP : Maximum Overcurrent Protection (Amps)

7. Sensible capacity table

Compact 4-Way Cassette type (MMU-***1MH2UL)

TC: Total capacity [Btu/h] SHC: Sensible capacity [Btu/h]

unit size	outdoor air temp. °FDB	indoor air temp.													
		59 °FWB		61 °FWB		64 °FWB		67 °FWB		68 °FWB		72 °FWB		75 °FWB	
		71 °FDB		73 °FDB		77 °FDB		80 °FDB		82 °FDB		86 °FDB		90 °FDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	50	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	54	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	57	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	61	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	64	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	68	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	70	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	73	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	77	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	81	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	84	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	88	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	91	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	95	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	99	6190	5110	6490	5240	6890	5460	7280	5630	7410	5650	7870	5570	8200	5370
	102	6050	4990	6330	5120	6730	5330	7110	5500	7230	5520	7690	5440	8010	5240
009	50	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	54	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	57	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	61	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	64	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	68	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	70	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	73	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	77	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	81	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	84	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	88	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	91	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	95	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	99	7860	5980	8210	6140	8740	6400	9220	6590	9380	6610	9970	6530	10390	6280
	102	7670	5840	8020	5990	8530	6250	9010	6440	9160	6460	9740	6370	10140	6130
012	50	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	54	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	57	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	61	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
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	68	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
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	73	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	77	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	81	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	84	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	88	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	91	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	95	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	99	9910	7330	10380	7530	11030	7840	11650	8090	11860	8120	12600	8010	13120	7710
	102	9680	7160	10130	7360	10770	7650	11380	7900	11580	7930	12310	7820	12810	7530

Compact 4-Way Cassette type (MMU-***1MH2UL)

TC: Total capacity [Btu/h] SHC: Sensible capacity [Btu/h]

unit size	outdoor air temp. °FDB	indoor air temp.													
		59 °FWB		61 °FWB		64 °FWB		67 °FWB		68 °FWB		72 °FWB		75 °FWB	
		71 °FDB		73 °FDB		77 °FDB		80 °FDB		82 °FDB		86 °FDB		90 °FDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
015	50	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	54	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	57	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	61	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	64	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	68	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	70	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	73	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	77	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	81	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	84	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	88	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	91	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	95	13110	9620	13710	9880	14580	10290	15400	10610	15660	10640	16660	10510	17340	10110
	99	12730	9340	13310	9590	14160	9990	14950	10300	15210	10330	16180	10210	16840	9820
	102	12430	9120	13000	9370	13820	9750	14600	10060	14850	10090	15790	9960	16440	9580
018	50	15320	10490	16030	10780	17040	11210	18000	11570	18310	11600	19470	11460	20270	11030
	54	15320	10490	16030	10780	17040	11210	18000	11570	18310	11600	19470	11460	20270	11030
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	64	15320	10490	16030	10780	17040	11210	18000	11570	18310	11600	19470	11460	20270	11030
	68	15320	10490	16030	10780	17040	11210	18000	11570	18310	11600	19470	11460	20270	11030
	70	15320	10490	16030	10780	17040	11210	18000	11570	18310	11600	19470	11460	20270	11030
	73	15320	10490	16030	10780	17040	11210	18000	11570	18310	11600	19470	11460	20270	11030
	77	15320	10490	16030	10780	17040	11210	18000	11570	18310	11600	19470	11460	20270	11030
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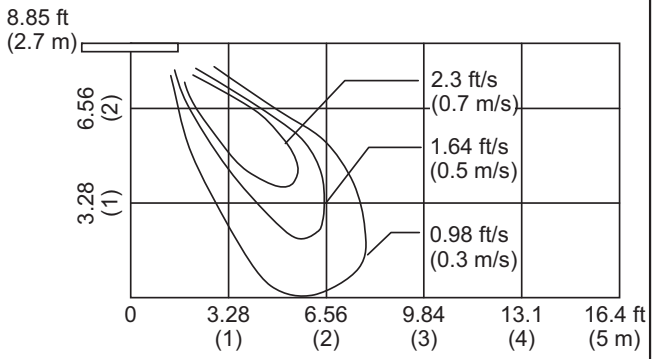
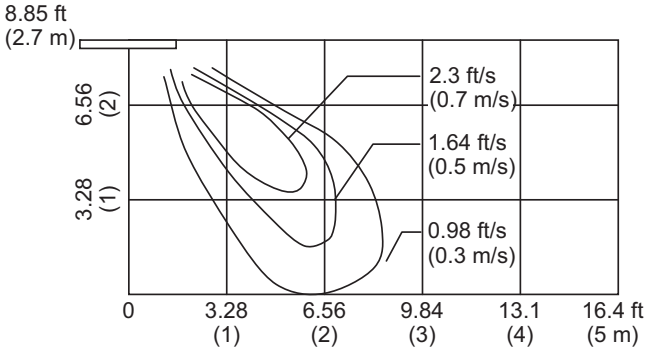
	84	15320	10490	16030	10780	17040	11210	18000	11570	18310	11600	19470	11460	20270	11030
	88	15320	10490	16030	10780	17040	11210	18000	11570	18310	11600	19470	11460	20270	11030
	91	15320	10490	16030	10780	17040	11210	18000	11570	18310	11600	19470	11460	20270	11030
	95	15320	10490	16030	10780	17040	11210	18000	11570	18310	11600	19470	11460	20270	11030
	99	14880	10190	15570	10470	16550	10880	17480	11230	17780	11260	18910	11130	19680	10710
	102	14520	9940	15200	10220	16150	10630	17060	10970	17360	11000	18460	10860	19220	10460

8. Air throw distance chart

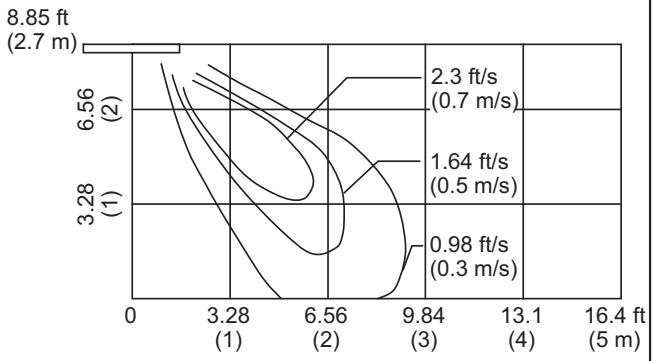
MMU-AP0071MH2UL



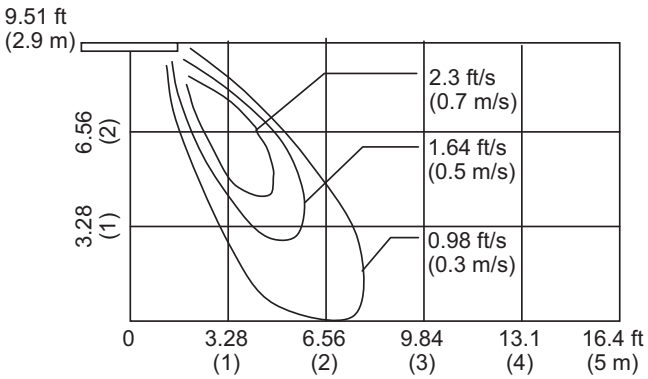
MMU-AP0091MH2UL



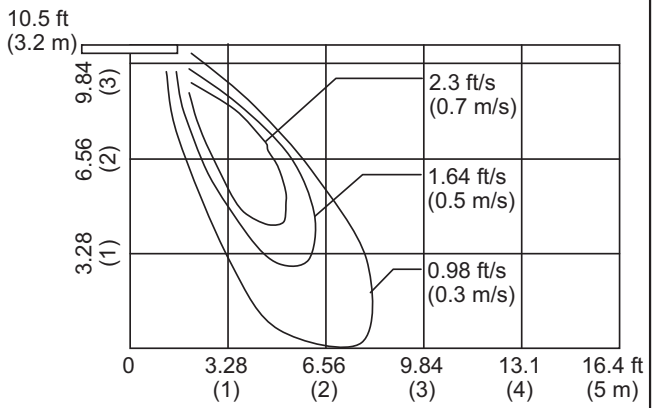
MMU-AP0121MH2UL



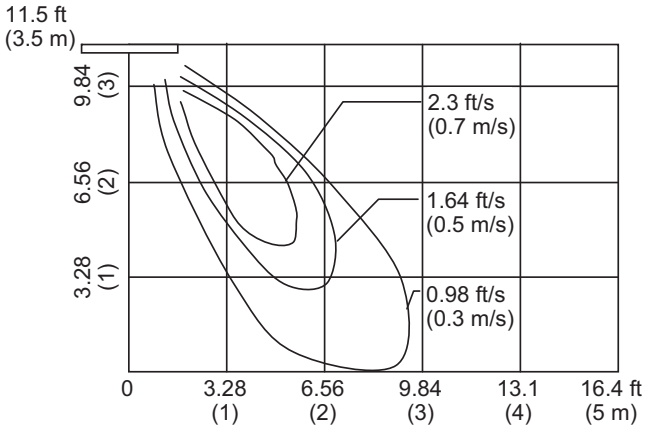
MMU-AP0151MH2UL



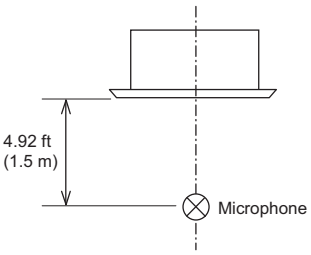
MMU-AP0181MH2UL



MMU-AP0151MH2UL/AP0181MH2UL
(High ceiling mode)

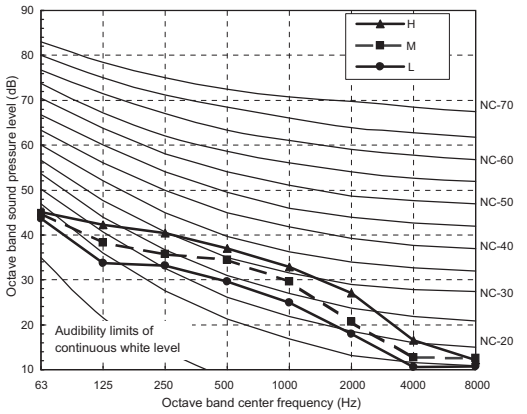


9. Sound data



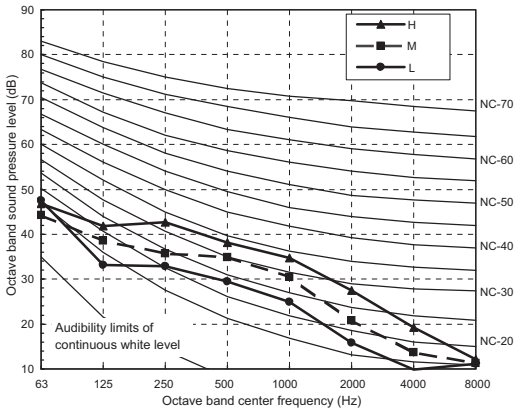
MMU-AP0071MH2UL

Sound pressure level (dB (A))	H - M - L
	38.5-35-31



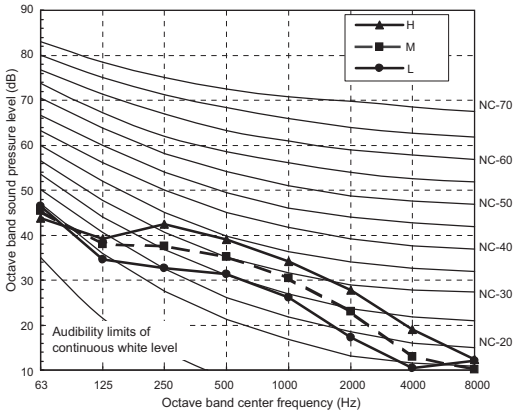
MMU-AP0091MH2UL

Sound pressure level (dB (A))	H - M - L
	40-35.5-31



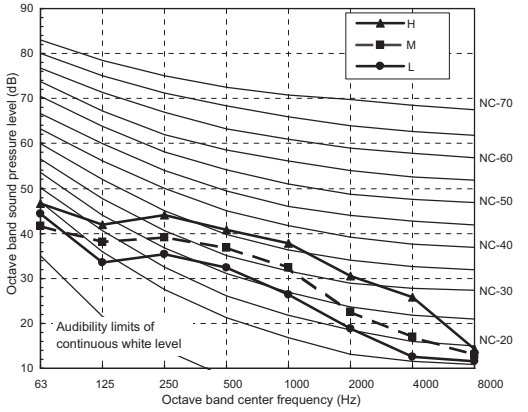
MMU-AP0121MH2UL

Sound pressure level (dB (A))	H - M - L
	40-36-32



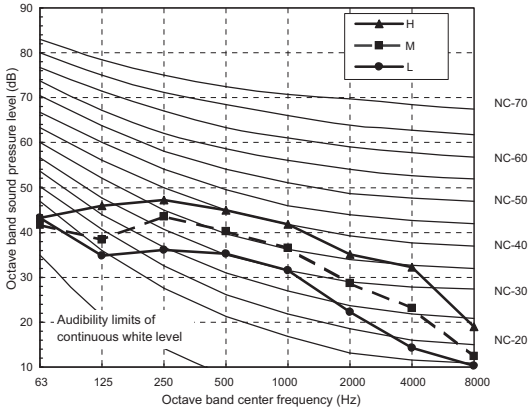
MMU-AP0151MH2UL

Sound pressure level (dB (A))	H - M - L
	42.5-37.5-33



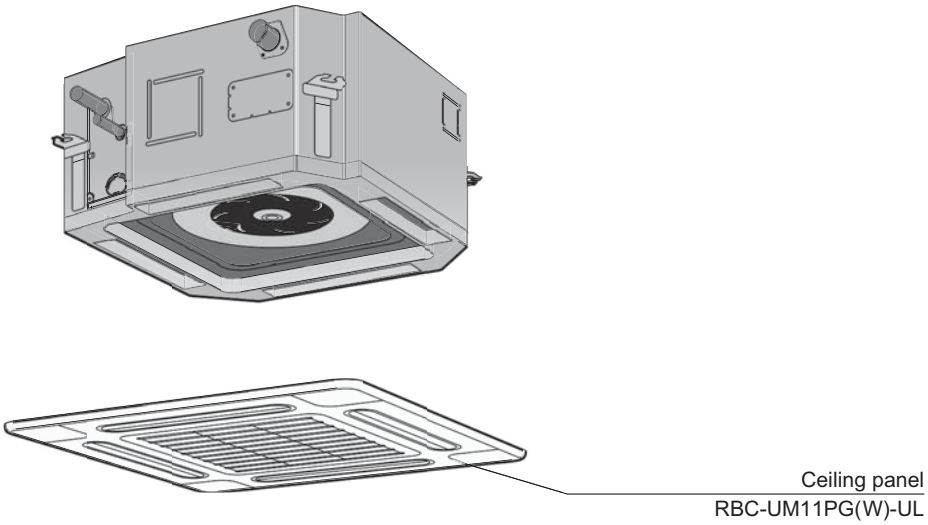
MMU-AP0181MH2UL

Sound pressure level (dB (A))	H - M - L
	46.5-41.5-36



10. Accessories

Optional part for Compact 4-Way Cassette type



Parts Name	Model name	Applied Model	Note
Ceiling panel	RBC-UM11PG(W)-UL	MMU-AP****MH2UL	Required accessory

6-3. Ceiling type

Ceiling type

MMC-AP0181H2UL
MMC-AP0241H2UL
MMC-AP0361H2UL
MMU-AP0421H2UL

Contents

1. Specifications

Ceiling type

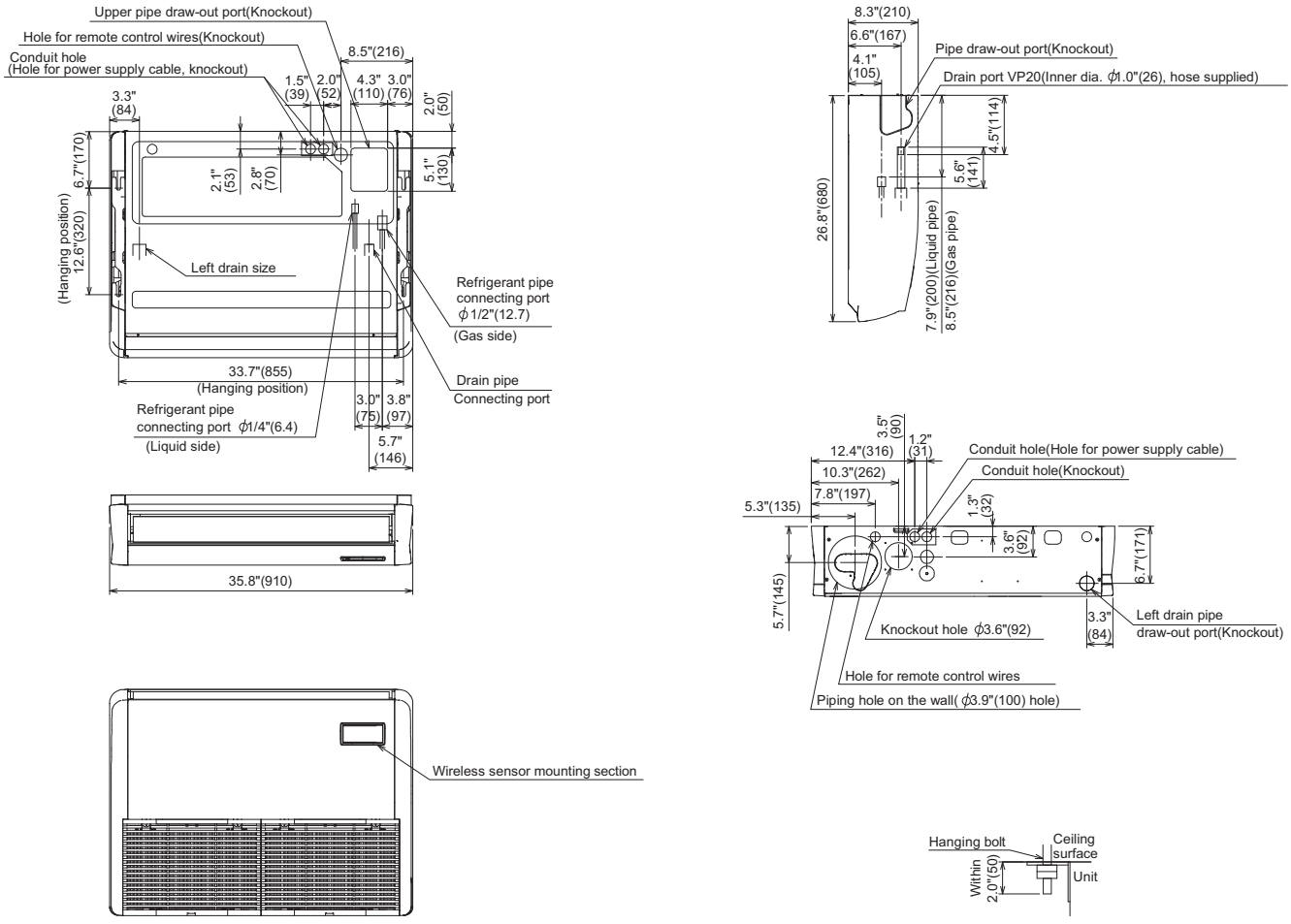
Model name				MMC-	AP0181H2UL	AP0241H2UL	AP0361H2UL	AP0421H2UL
Cooling Capacity				kBtu/h	18	24	36	42
Heating Capacity				kBtu/h	20	27	40	47.5
Electrical characteristics	Power supply				230 V (208/230 V) 1phase 60 Hz			
	Power consumption			kW	0.038	0.05	0.091	0.11
Appearance					White (Munsell 10Y 9.3/0.4)			
Dimension	Unit	Height		In	8.3	8.3	8.3	8.3
		Width		In	35.8	46.5	62.8	62.8
		Depth		In	26.8	26.8	26.8	26.8
	Packing	Height		In	12.4	12.4	12.4	12.4
		Width		In	39.1	50.0	66	66
		Depth		In	32.0	32.0	32.0	32.0
Total weight	Unit			lbs	46	57	75	75
	Packed unit			lbs	62	75	97	97
Heat exchanger					Finned tube			
Fan unit	Fan				Centrifugal fan			
	Standard air flow (High/Mid/Low)			cfm	410/360/320	590/530/470	880/770/680	950/820/730
	Motor			W	60	60	60	60
Air filter					Standard filter (Long life filter)			
Connecting pipe	Gas side			In	1/2"	5/8"	5/8"	5/8"
	Liquid side			In	1/4"	3/8"	3/8"	3/8"
	Drain port (Nominal dia.)			In	VP20(Polyvinyl chloride tube: External Dia.1 Internal Dia.0.79)			
Sound pressure level (High/Mid/Low) (*1)				dB(A)	38.5/35/32.5	40.5/38/35	44/41/37	46/42.5/39.5
Option parts	Drain Pump Kit				TCB-DP22CUL			
	Elbow Piping Kit				TCB-KP12CUL			
					TCB-KP22CUL			

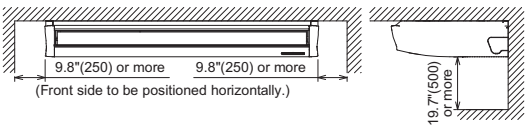
Note

(*1) The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.

2. Dimensions

MMC-AP0181H2UL

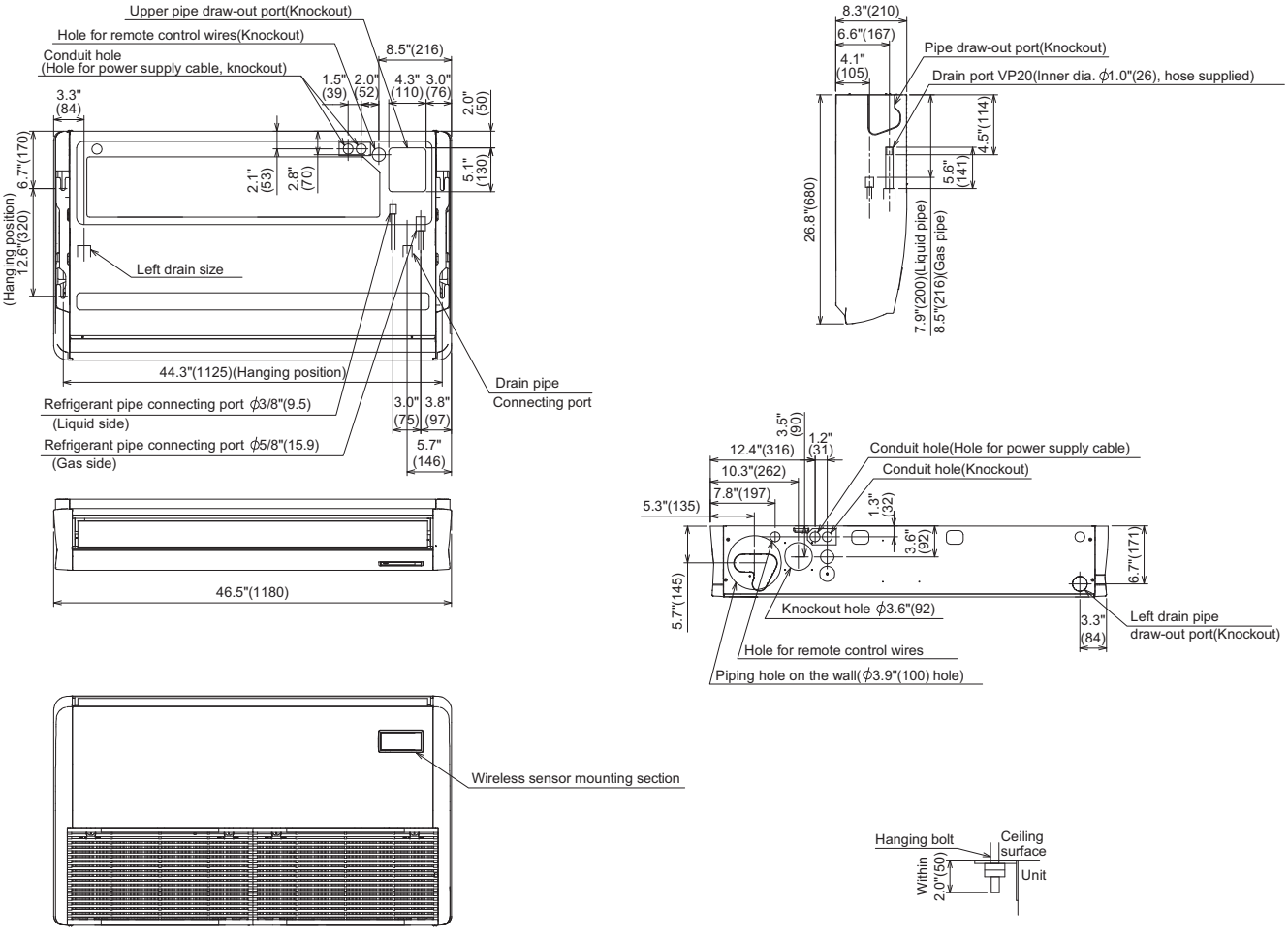


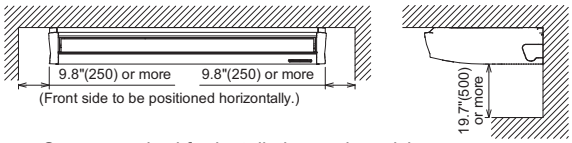


Space required for installation and servicing

Unit:in (mm)

MMC-AP0241H2UL

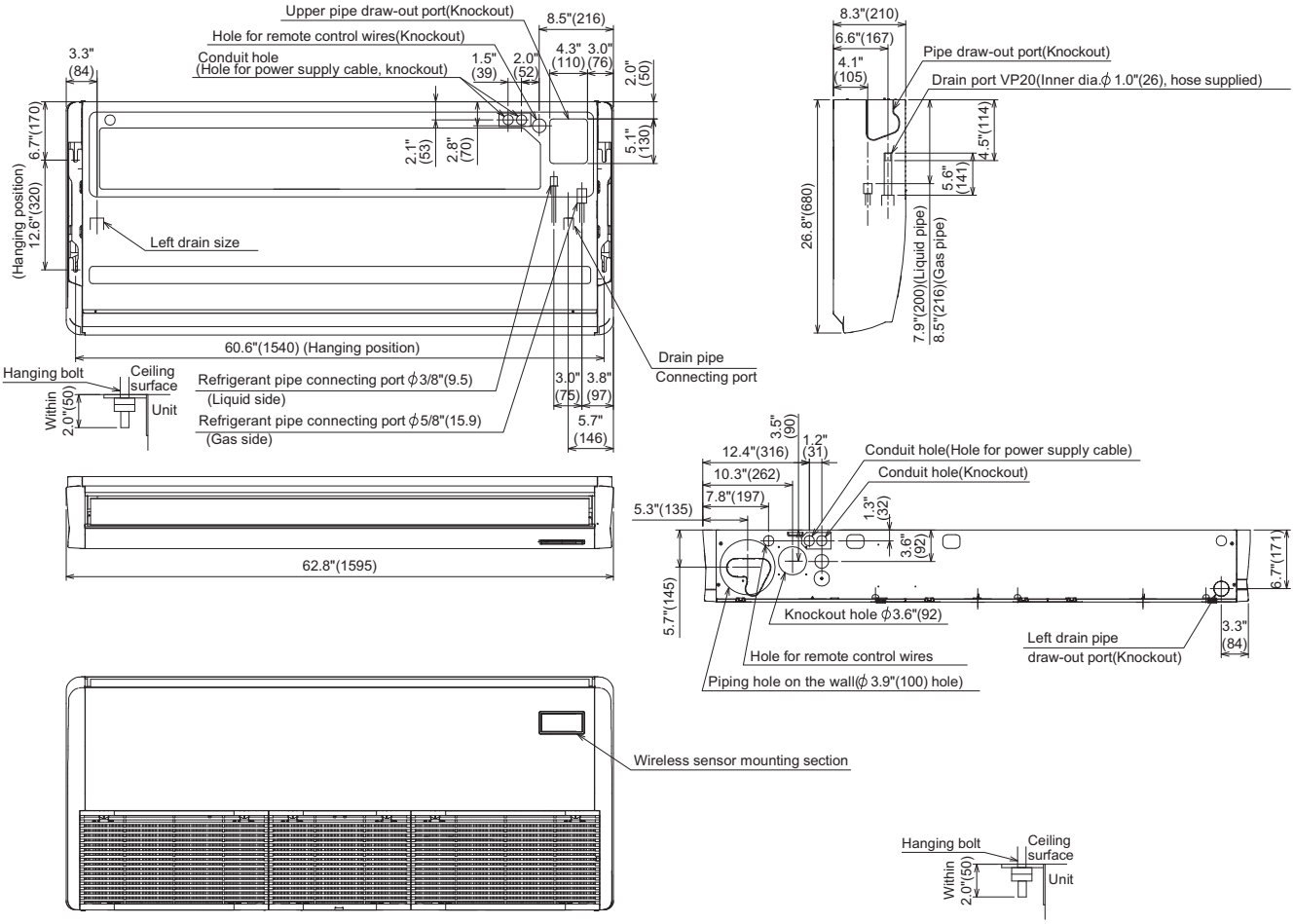


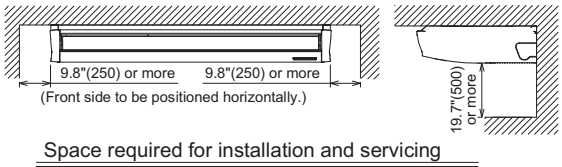


Space required for installation and servicing

Unit:in (mm)

MMC-AP0361H2UL, AP0421H2UL



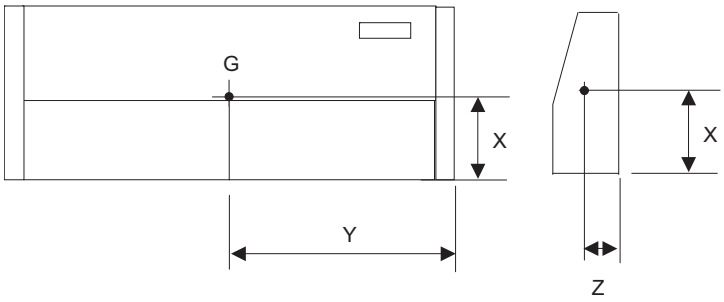


Space required for installation and servicing

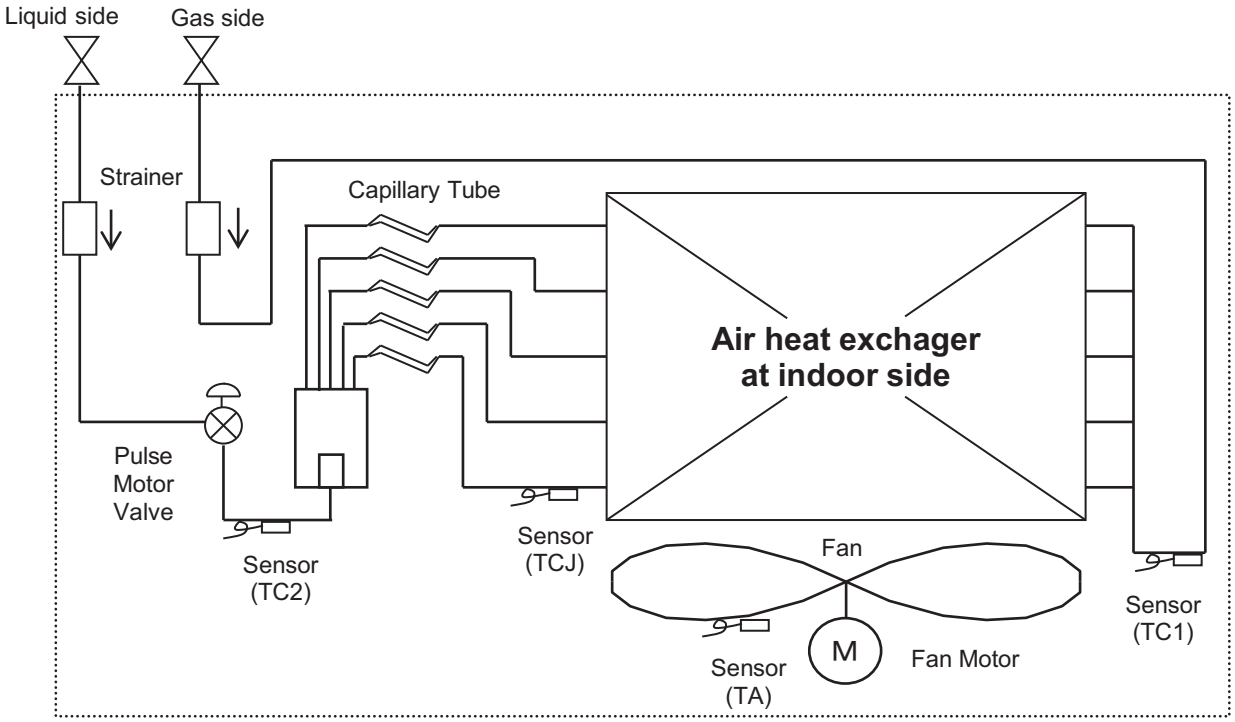
Unit:in(mm)

3. Center of gravity

Model name	X (In)	Y (In)	Z (In)	Total weight (lbs)
MMC-AP0181H2UL	12.6	18.1	3.55	46
MMC-AP0241H2UL		22.4		57
MMC-AP0361H2UL		30.3		75
MMC-AP0421H2UL				

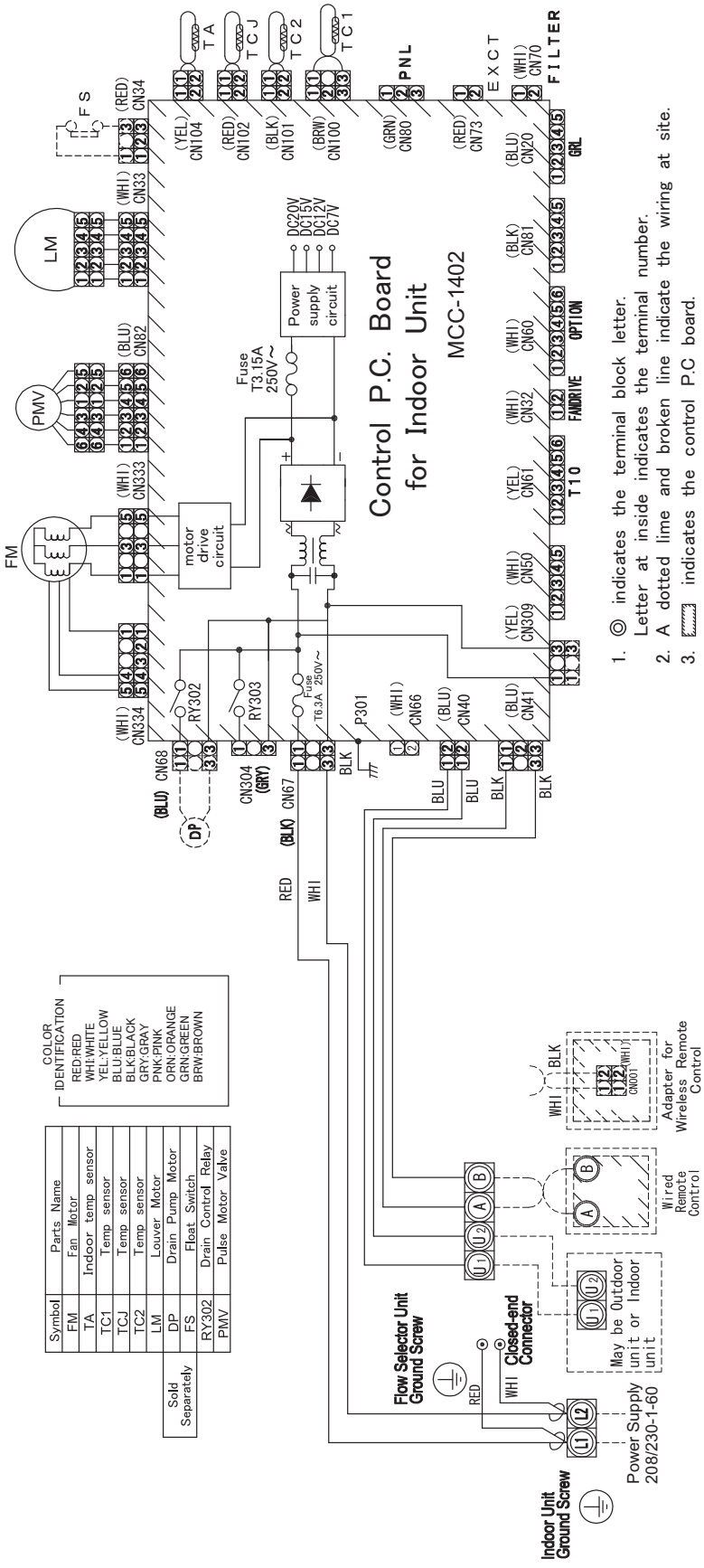


4. Piping diagram



5. Wiring diagram

MMC-AP0181H2UL, AP0241H2UL, AP0361H2UL, AP0421H2UL



6. Electrical current characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range (V)		Power consumption	FLA	MCA	MOCP
			Min	Max	kW	A	A	A
Ceiling type	MMC-AP0181H2UL	208/230-1-60	187	253	0.038	0.4	0.5	15
	MMC-AP0241H2UL	208/230-1-60	187	253	0.05	0.5	0.7	15
	MMC-AP0361H2UL	208/230-1-60	187	253	0.091	0.8	1.0	15
	MMC-AP0421H2UL	208/230-1-60	187	253	0.11	0.9	1.2	15

MCA : Minimum Circuit Amps FLA : Full Load Amps
MOCP : Maximum Overcurrent Protection (Amps)

7. Sensible capacity table

Ceiling type (MMC-AP***1H2UL)

TC: Total capacity [Btu/h] SHC: Sensible capacity [Btu/h]

unit size	outdoor air temp. °FDB	indoor air temp.													
		59 °FWB		61 °FWB		64 °FWB		67 °FWB		68 °FWB		72 °FWB		75 °FWB	
		71 °FDB		73 °FDB		77 °FDB		80 °FDB		82 °FDB		86 °FDB		90 °FDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
018	50	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	54	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	57	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	61	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	64	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	68	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	70	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	73	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	77	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	81	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	84	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	88	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	91	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	95	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	99	14880	11040	15570	11340	16550	11800	17480	12180	17780	12220	18910	12060	19680	11600
	102	14520	10780	15200	11070	16150	11520	17060	11890	17360	11930	18460	11770	19220	11330
024	50	20430	15630	21370	16060	22730	16720	24000	17240	24410	17290	25960	17070	27020	16430
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	95	30640	22150	32060	22760	34090	23690	36000	24430	36620	24500	38930	24180	40540	23280
	99	29750	21510	31130	22100	33100	23000	34960	23720	35560	23790	37800	23480	39360	22600
	102	29050	21000	30390	21580	32320	22460	34130	23160	34720	23230	36910	22920	38430	22070
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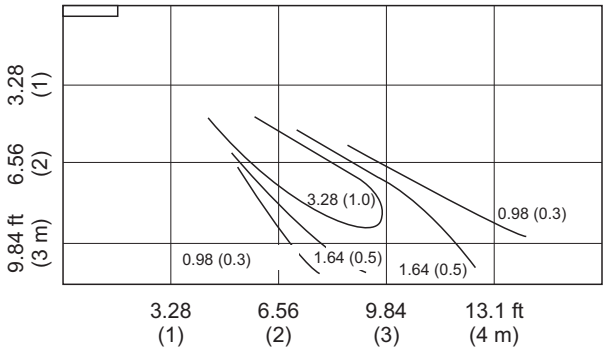
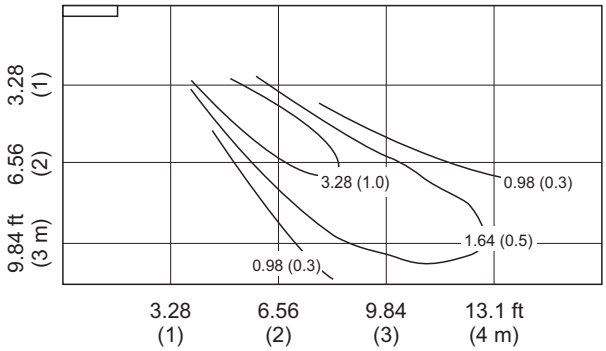
	102	33890	25270	35460	25960	37700	27020	39820	27870	40500	27950	43060	27590	44830	26560

8. Air throw distance chart

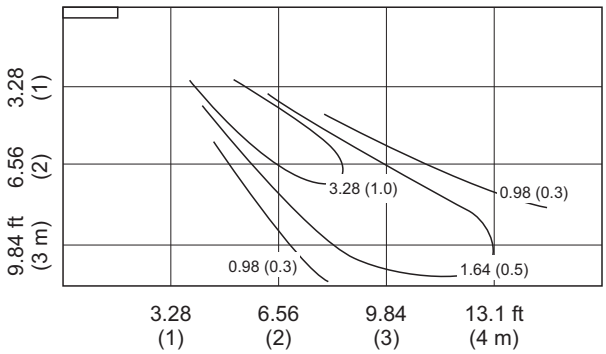
MMC-AP0181H2UL/AP0421H2UL



MMC-AP0361H2UL

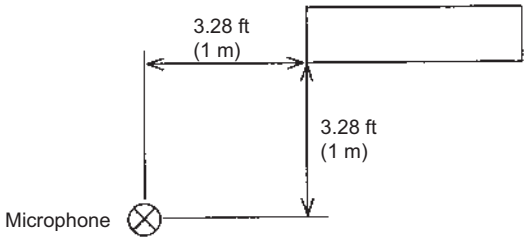


MMC-AP0241H2UL



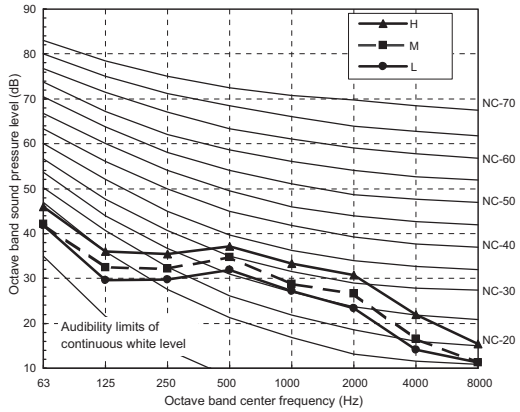
unit : [ft/s (m/s)]

9. Sound data



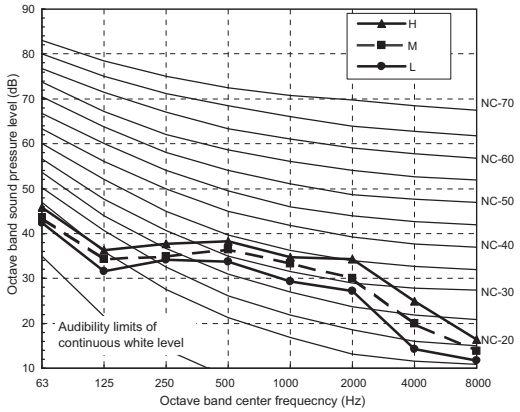
MMC-AP0181H2UL

Sound pressure level (dB (A))	H - M - L
	38.5-35-32.5



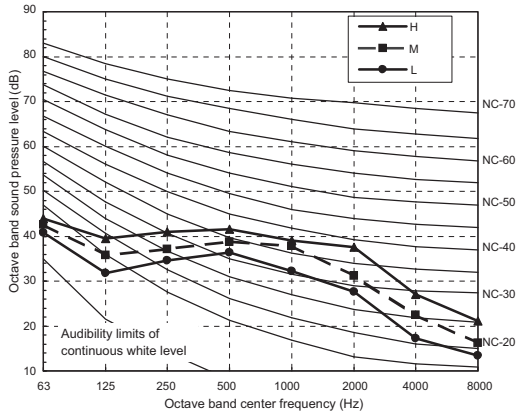
MMC-AP0241H2UL

Sound pressure level (dB (A))	H - M - L
	40.5-38-35



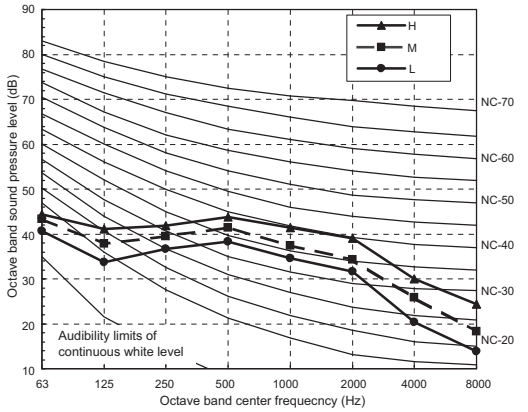
MMC-AP0361H2UL

Sound pressure level (dB (A))	H - M - L
	44-41-37

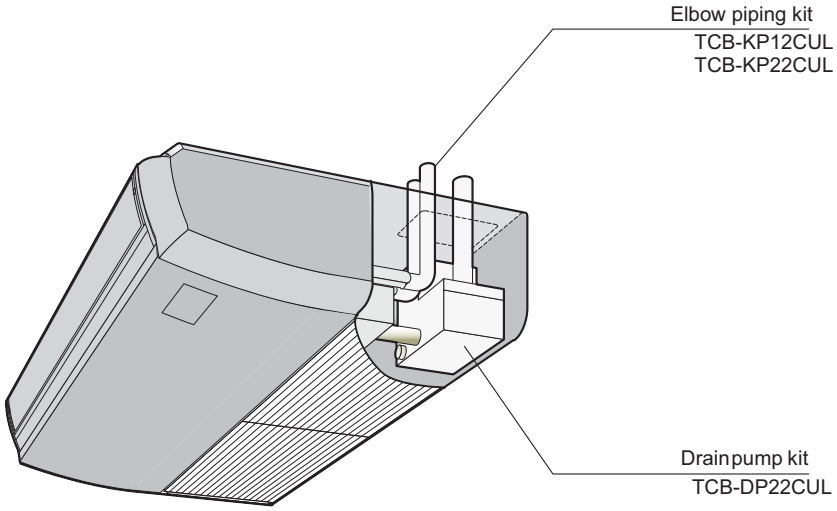


MMC-AP0421H2UL

Sound pressure level (dB (A))	H - M - L
	46-42.5-39.5



10. Accessories



Parts Name	Model name	Applied Model	Notes	Remarks
Drain pump kit	TCB-DP22CUL	MMC-AP****H2UL	Stand-up 600 or less (from bottom face of ceiling)	Use with TCB-KP12CUL and TCB-KP22CUL
Elbow piping kit	TCB-KP12CUL	MMC-AP0181H2UL	Needed when drain pump kit is used	
	TCB-KP22CUL	MMC-AP0241 to 0421H2UL		

6-4. High Wall type

High Wall type

MMK-AP0073H2UL
MMK-AP0093H2UL
MMK-AP0123H2UL
MMK-AP0153H2UL
MMK-AP0183H2UL
MMK-AP0243H2UL

Contents

1. Specifications

High Wall type

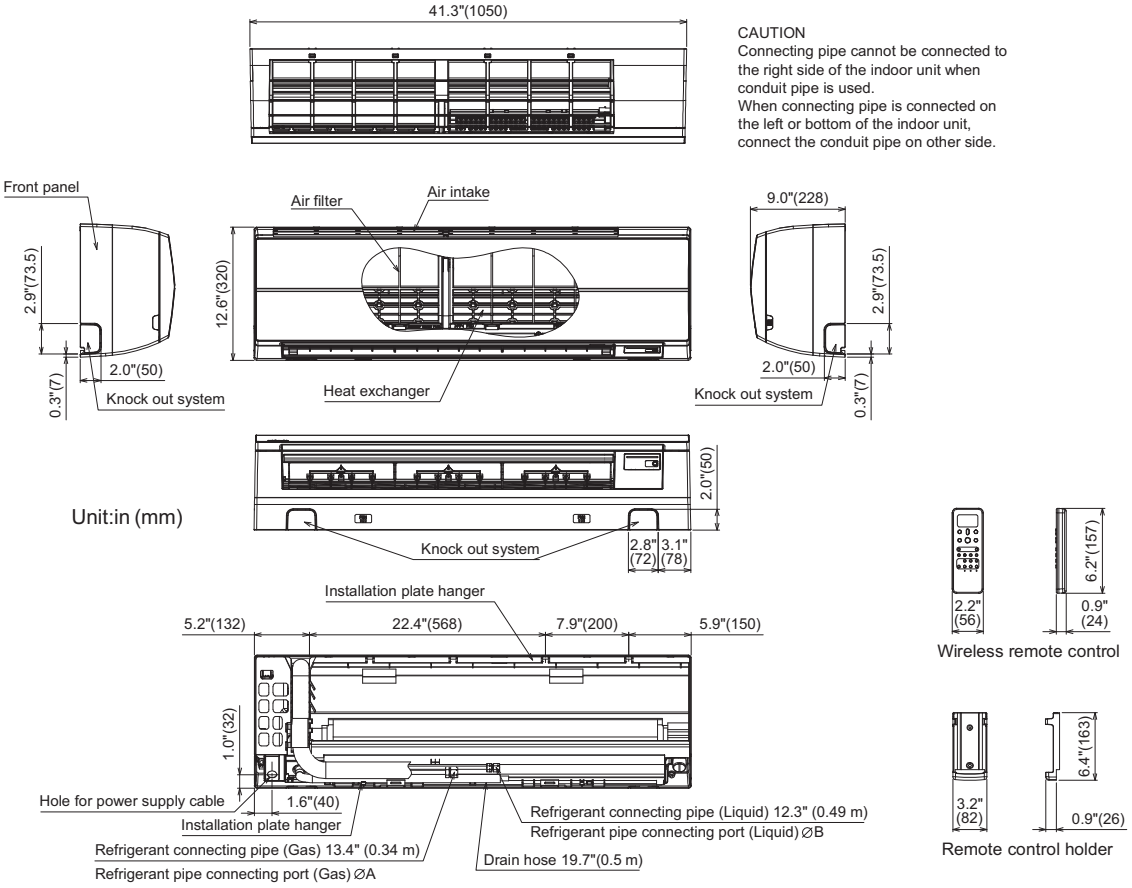
Model name				MMK-	AP0073H2UL	AP0093H2UL	AP0123H2UL	AP0153H2UL	AP0183H2UL	AP0243H2UL
Cooling Capacity				kBtu/h	7.5	9.5	12	15.4	18	24
Heating Capacity				kBtu/h	8.5	10.5	13.5	17	20	27
Electrical characteristics	Power supply				230 V(208/230 V) 1phase 60 Hz					
	Power consumption			kW	0.018	0.021	0.021	0.043	0.043	0.05
Appearance	Air intake grille and side panel				Moon white (Munsell 2.5GY9.0/0.5)					
	Discharge-grille				Moon white (Munsell 2.5GY9.0/0.5)					
	Bottom surface				Moon white (Munsell 2.5GY9.0/0.5)					
Dimension	Unit	Height		In	12.6	12.6	12.6	12.6	12.6	12.6
		Width		In	41.3	41.3	41.3	41.3	41.3	41.3
		Depth		In	9.0	9.0	9.0	9.0	9.0	9.0
	Packing	Height		In	15.7	15.7	15.7	15.7	15.7	15.7
		Width		In	43.9	43.9	43.9	43.9	43.9	43.9
		Depth		In	11.9	11.9	11.9	11.9	11.9	11.9
Total weight	Unit			lbs	33	33	33	33	33	33
	Packed unit			lbs	42	42	42	42	42	42
Heat exchanger					Finned tube					
Fan unit	Fan				Cross-flow fan					
	Standard air flow (High/Mid/Low)			cfm	340/270/230	350/280/230	350/280/230	490/390/320	490/390/320	600/440/340
	Motor			W	30	30	30	30	30	30
Air filter					Standard filter attached					
Connecting pipe	Gas side			In	3/8"	3/8"	3/8"	1/2"	1/2"	5/8"
	Liquid side			In	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"
	Drain port (Nominal dia.)			In	VP16(Polyvinyl chloride tube: External Dia.0.87 Internal Dia.0.63)					
Sound pressure level (High/Mid/Low) (*1)				dB(A)	36/32.5/30	39/34/30	39/34/30	43/38/34.5	43/38/34.5	47.5/40.5/35

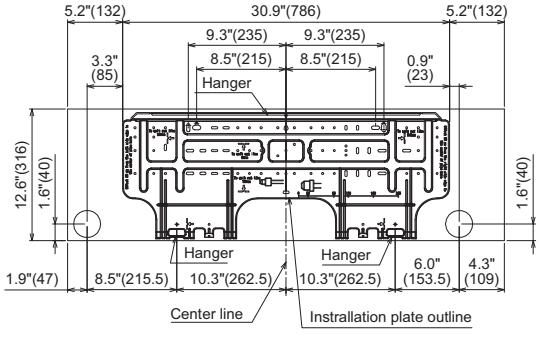
Note

(*1) The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.

2. Dimensions

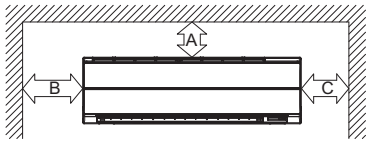
MMK-AP0073H2UL, AP0093H2UL, AP0123H2UL, AP0153H2UL, AP0183H2UL, AP0243H2UL





Installation plate

Space required for installation and servicing



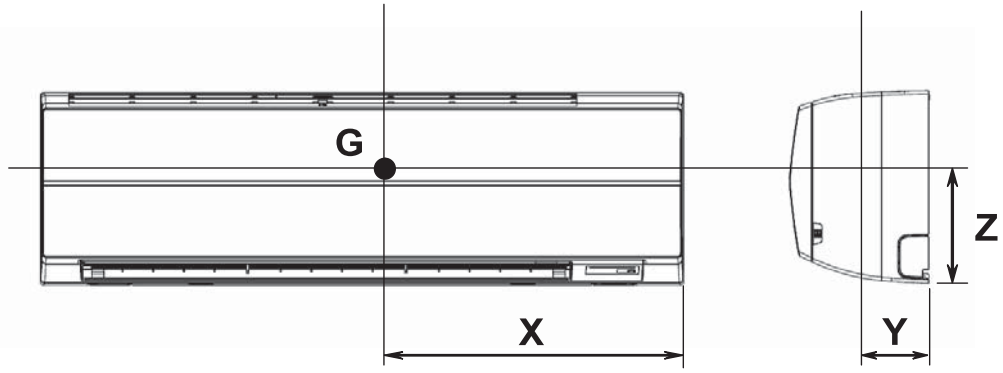
	Distance	Comments
A	2.0"(50) or more	
B	33.5"(850) or more	For exchange of cross flow fan
C	6.7"(170) or more	

Unit:in (mm)

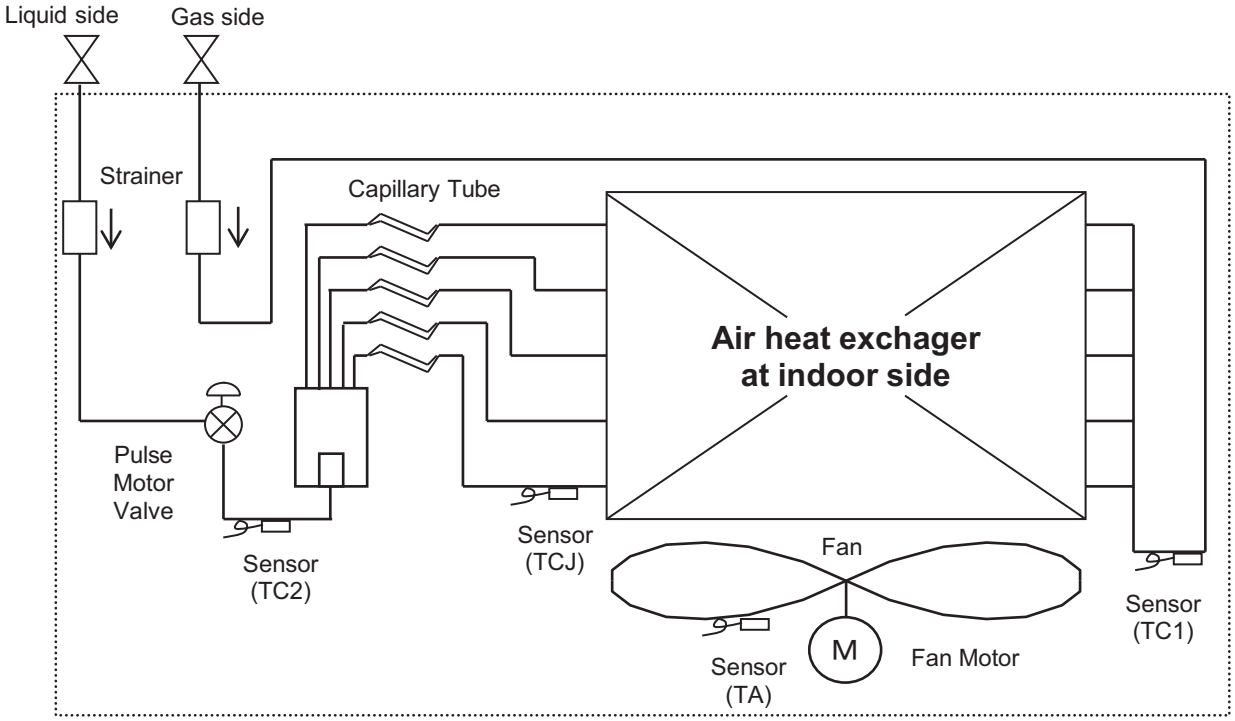
Model MMK-	A	B
AP007, 009, 012 Type	3/8" (9.5)	1/4" (6.4)
AP015, 018 Type	1/2" (12.7)	1/4" (6.4)
AP024 Type	5/8" (15.9)	3/8" (9.5)

3. Center of gravity

Model name	X (In)	Y (In)	Z (In)	Total weight (lbs)
MMK-AP0073H2UL	17.5	4.15	6.7	33
MMK-AP0093H2UL				
MMK-AP0123H2UL				
MMK-AP0153H2UL				
MMK-AP0183H2UL				
MMK-AP0243H2UL				

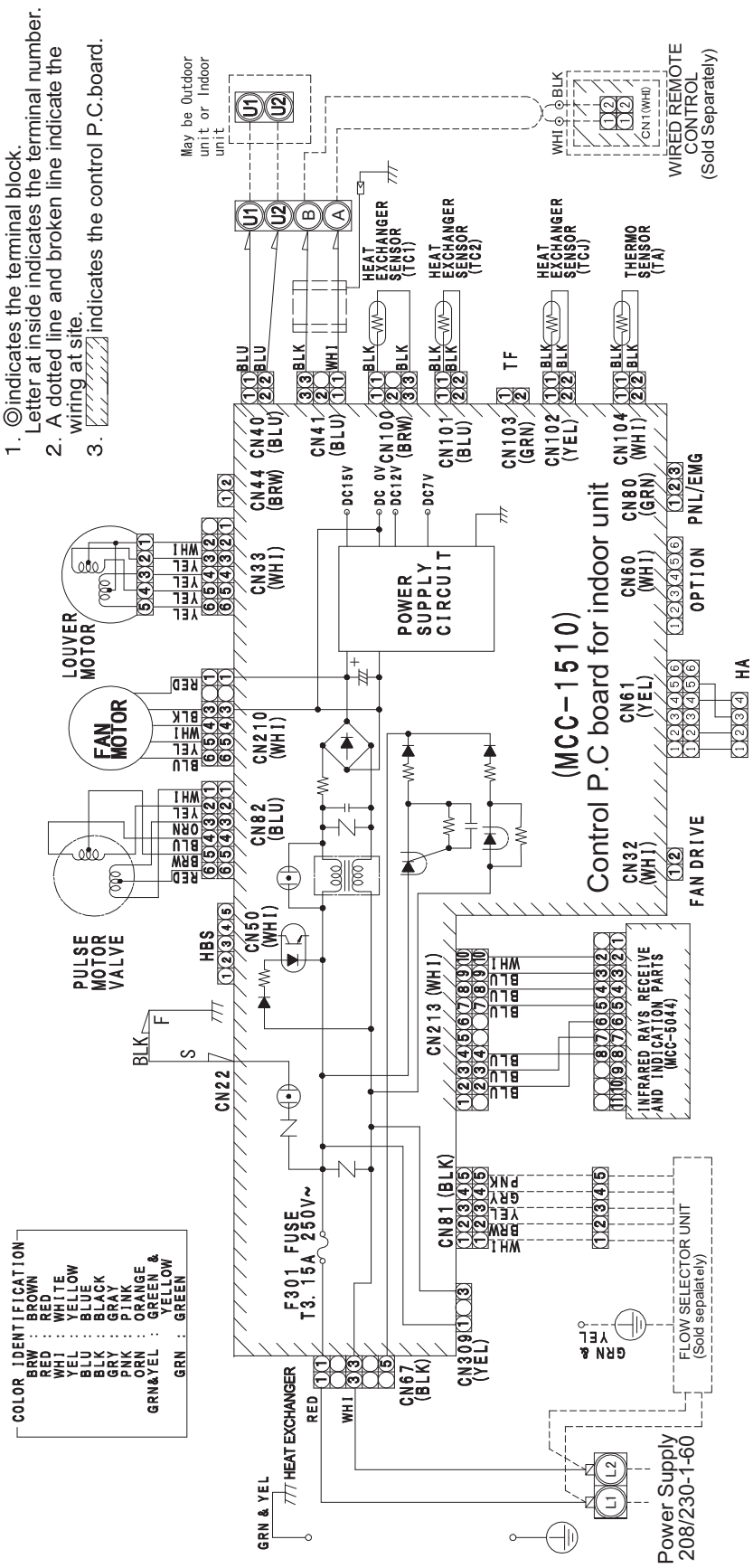


4. Piping diagram



5. Wiring diagram

MMK-AP0073H2UL, AP0093H2UL, AP0123H2UL, AP0153H2UL, AP0183H2UL, AP0243H2UL



6. Electrical current characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range (V)		Power consumption	FLA	MCA	MOCP
			Min	Max	kW	A	A	A
High Wall type	MMK-AP0073H2UL	208/230-1-60	187	253	0.018	0.2	0.3	15
	MMK-AP0093H2UL	208/230-1-60	187	253	0.021	0.2	0.3	15
	MMK-AP0123H2UL	208/230-1-60	187	253	0.021	0.2	0.3	15
	MMK-AP0153H2UL	208/230-1-60	187	253	0.043	0.4	0.5	15
	MMK-AP0183H2UL	208/230-1-60	187	253	0.043	0.4	0.5	15
	MMK-AP0243H2UL	208/230-1-60	187	253	0.05	0.4	0.5	15

MCA : Minimum Circuit Amps
FLA : Full Load Amps
MOCP : Maximum Overcurrent Protection (Amps)

7. Sensible capacity table

High Wall type (MMK-AP***3H2UL)

TC: Total capacity [Btu/h] SHC: Sensible capacity [Btu/h]

unit size	outdoor air temp. °FDB	indoor air temp.													
		59 °FWB		61 °FWB		64 °FWB		67 °FWB		68 °FWB		72 °FWB		75 °FWB	
		71 °FDB		73 °FDB		77 °FDB		80 °FDB		82 °FDB		86 °FDB		90 °FDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	50	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	54	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	57	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	61	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	64	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	68	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	70	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	73	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	77	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	81	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	84	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	88	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	91	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	95	6380	5260	6680	5400	7100	5620	7500	5800	7630	5820	8110	5740	8450	5530
	99	6190	5110	6490	5240	6890	5460	7280	5630	7410	5650	7870	5570	8200	5370
	102	6050	4990	6330	5120	6730	5330	7110	5500	7230	5520	7690	5440	8010	5240
009	50	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	54	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	57	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	61	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	64	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	68	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	70	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	73	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	77	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	81	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	84	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	88	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	91	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	95	8090	6160	8460	6320	9000	6590	9500	6790	9660	6810	10270	6720	10700	6470
	99	7860	5980	8210	6140	8740	6400	9220	6590	9380	6610	9970	6530	10390	6280
	102	7670	5840	8020	5990	8530	6250	9010	6440	9160	6460	9740	6370	10140	6130
012	50	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	54	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	57	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
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	70	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	73	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	77	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	81	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	84	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	88	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	91	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	95	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	99	9910	7330	10380	7530	11030	7840	11650	8090	11860	8120	12600	8010	13120	7710
	102	9680	7160	10130	7360	10770	7650	11380	7900	11580	7930	12310	7820	12810	7530

High Wall type (MMK-AP***3H2UL)

TC: Total capacity [Btu/h] SHC: Sensible capacity [Btu/h]

unit size	outdoor air temp. °FDB	indoor air temp.													
		59 °FWB		61 °FWB		64 °FWB		67 °FWB		68 °FWB		72 °FWB		75 °FWB	
		71 °FDB		73 °FDB		77 °FDB		80 °FDB		82 °FDB		86 °FDB		90 °FDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
015	50	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	54	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	57	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	61	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	64	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	68	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	70	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	73	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	77	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	81	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	84	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	88	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	91	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	95	13110	9000	13710	9240	14580	9620	15400	9920	15660	9950	16660	9820	17340	9450
	99	12730	8740	13310	8970	14160	9340	14950	9630	15210	9660	16180	9540	16840	9180
	102	12430	8530	13000	8760	13820	9120	14600	9400	14850	9430	15790	9310	16440	8960
018	50	15320	10490	16030	10780	17040	11210	18000	11570	18310	11600	19470	11460	20270	11030
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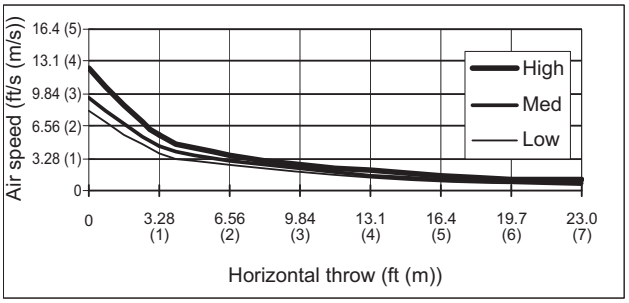
	68	20430	14410	21370	14800	22730	15410	24000	15890	24410	15930	25960	15730	27020	15140
	70	20430	14410	21370	14800	22730	15410	24000	15890	24410	15930	25960	15730	27020	15140
	73	20430	14410	21370	14800	22730	15410	24000	15890	24410	15930	25960	15730	27020	15140
	77	20430	14410	21370	14800	22730	15410	24000	15890	24410	15930	25960	15730	27020	15140
	81	20430	14410	21370	14800	22730	15410	24000	15890	24410	15930	25960	15730	27020	15140
	84	20430	14410	21370	14800	22730	15410	24000	15890	24410	15930	25960	15730	27020	15140
	88	20430	14410	21370	14800	22730	15410	24000	15890	24410	15930	25960	15730	27020	15140
	91	20430	14410	21370	14800	22730	15410	24000	15890	24410	15930	25960	15730	27020	15140
	95	20430	14410	21370	14800	22730	15410	24000	15890	24410	15930	25960	15730	27020	15140
	99	19840	13990	20750	14370	22070	14960	23300	15430	23700	15470	25210	15270	26240	14700
	102	19370	13660	20260	14030	21550	14610	22750	15060	23140	15100	24610	14910	25610	14350

8. Fan characteristics

Discharge Air Speed and Air Throw

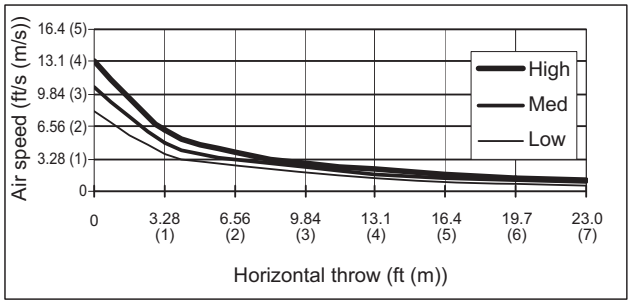
Model: MMK-AP0073H2UL

Horizontal discharge initial speed
High wind : 12.5 ft/s (3.8 m/s)
Med wind : 9.51 ft/s (2.9 m/s)
Low wind : 8.20 ft/s (2.5 m/s)



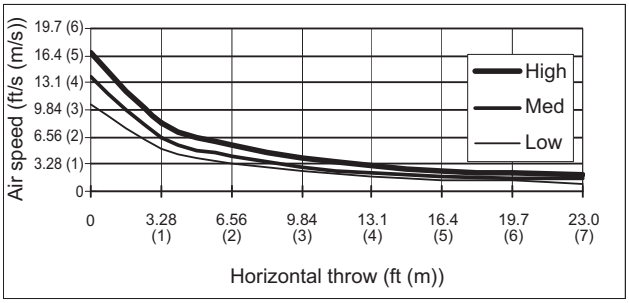
Model: MMK-AP0093H2UL/AP0123H2UL

Horizontal discharge initial speed
High wind : 13.1 ft/s (4.0 m/s)
Med wind : 10.5 ft/s (3.2 m/s)
Low wind : 8.20 ft/s (2.5 m/s)



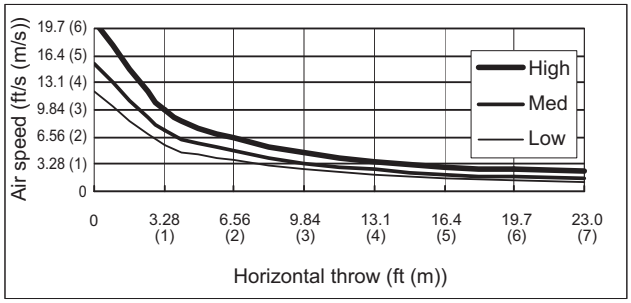
Model: MMK-AP0153H2UL/AP0183H2UL

Horizontal discharge initial speed
High wind : 16.7 ft/s (5.1 m/s)
Med wind : 13.8 ft/s (4.2 m/s)
Low wind : 10.5 ft/s (3.2 m/s)

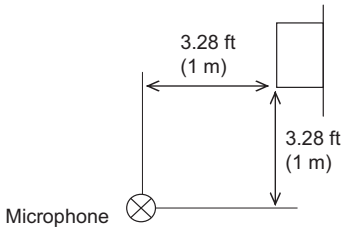


Model: MMK-AP0243H2UL

Horizontal discharge initial speed
High wind : 20.3 ft/s (6.2 m/s)
Med wind : 15.4 ft/s (4.7 m/s)
Low wind : 12.1 ft/s (3.7 m/s)

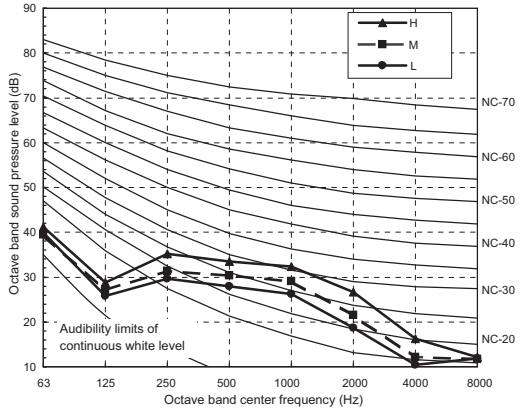


9. Sound data



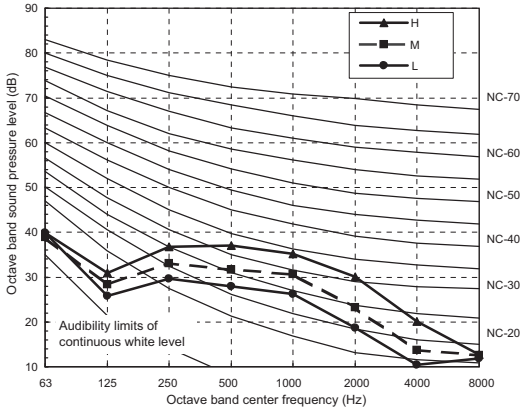
MMK-AP0073H2UL

Sound pressure level (dB (A))	H - M - L
	36-32.5-30



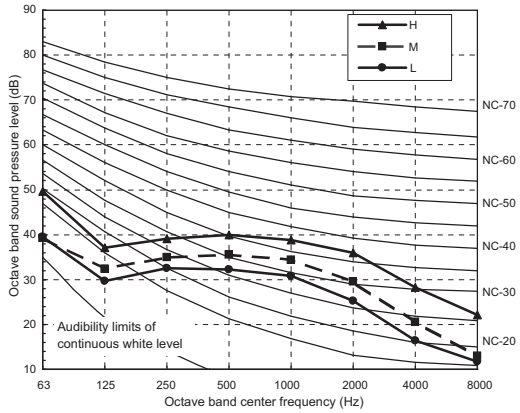
MMK-AP0093/AP0123H2UL

Sound pressure level (dB (A))	H - M - L
	39-34-30



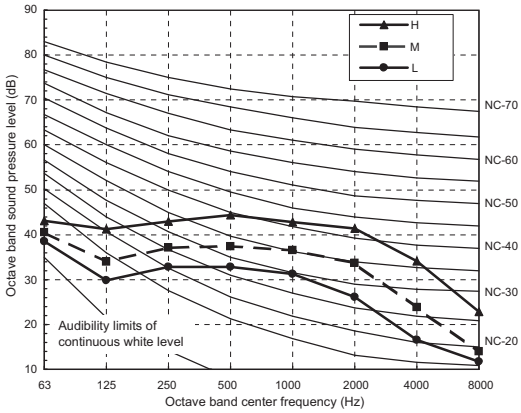
MMK-AP0153/AP0183H2UL

Sound pressure level (dB (A))	H - M - L
	43-38-34.5



MMK-AP0243H2UL

Sound pressure level (dB (A))	H - M - L
	47.5-40.5-35



10. Accessories

Remote control

Packed with the indoor unit

Name	Model name	Appearance	Application	Function
Wireless remote control	WH-L15SE			• Start / Stop • Changing mode • Temperature setting • Air flow changing (5 steps) • Louver setting • Clock • Timer function - ON/OFF timer (10 min. step) - Everyday timer - Sleep timer - COMFORT SLEEP timer • High power mode • QUIET mode • One-touch pre-set memory • A/B temperature display switching

6-5. Medium Static Ducted type

Medium Static Ducted type

MMD-AP0074BH2UL / MMD-AP0094BH2UL
MMD-AP0124BH2UL / MMD-AP0154BH2UL
MMD-AP0184BH2UL / MMD-AP0214BH2UL
MMD-AP0244BH2UL / MMD-AP0304BH2UL
MMD-AP0364BH2UL / MMD-AP0424BH2UL
MMD-AP0484BH2UL

Contents

1. Specifications

Medium Static Ducted type

Model name				MMD-	AP0074 BH2UL	AP0094 BH2UL	AP0124 BH2UL	AP0154 BH2UL	AP0184 BH2UL	AP0214 BH2UL	AP0244 BH2UL	AP0304 BH2UL	AP0364 BH2UL	AP0424 BH2UL	AP0484 BH2UL
Cooling Capacity				kBtu/h	7.5	9.5	12	15.4	18	21	24	30	36	42	48
Heating Capacity				kBtu/h	8.5	10.5	13.5	17	20	24	27	34	40	47.5	54
Electrical characteristics	Power supply				230V (208/230 V) 1phase 60 Hz										
	Power consumption			kW	0.041	0.041	0.049	0.091	0.091	0.091	0.091	0.091	0.106	0.142	0.142
Appearance					Zinc hot dipping steel plate										
Dimension	Unit	Height		In	12.6										
		Width		In	21.7			39.4		53.2					
		Depth		In	31.5										
	Packing	Height		In	14.6										
		Width		In	30.2			47.9		61.7					
		Depth		In	38.4										
Total weight	Unit			lbs	64			93		119					
	Packed unit			lbs	73			104		135					
Heat exchanger					Finned tube										
Fan unit	Fan				Centrifugal fan										
	Standard air flow (High/Mid/Low)			cfm	312/282/165		371/335/224	635/556/382		788/694/424			1088/953/706	1324/1165/871	
	Motor			W	150	150	150	150	150	150	150	150	150	150	150
	External static pressure	Factory default		In WG	0.26	0.26	0.24	0.25	0.25	0.21	0.21	0.21	0.25	0.25	0.25
		Maximum (*1)		In WG	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.44	0.44
Connecting pipe	Gas side			In	3/8"	3/8"	3/8"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
	Liquid side			In	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
	Drain port (Nominal dia.)			In	VP25(Polyvinyl chloride tube: External Dia.1-1/4 Internal Dia.1)										
Sound pressure level (High/Mid/Low) (*2)				dB(A)	34/30.5/27.5	34/30.5/27.5	34.5/32/31	37.5/35.5/29	37.5/35.5/29	35/33/31	35/33/31	35/33/31	38/35.5/34.5	41/38.5/36	41/38.5/36
Option parts	Fan guard				TCB-IG071BUL			TCB-IG151BUL		TCB-IG211BUL					

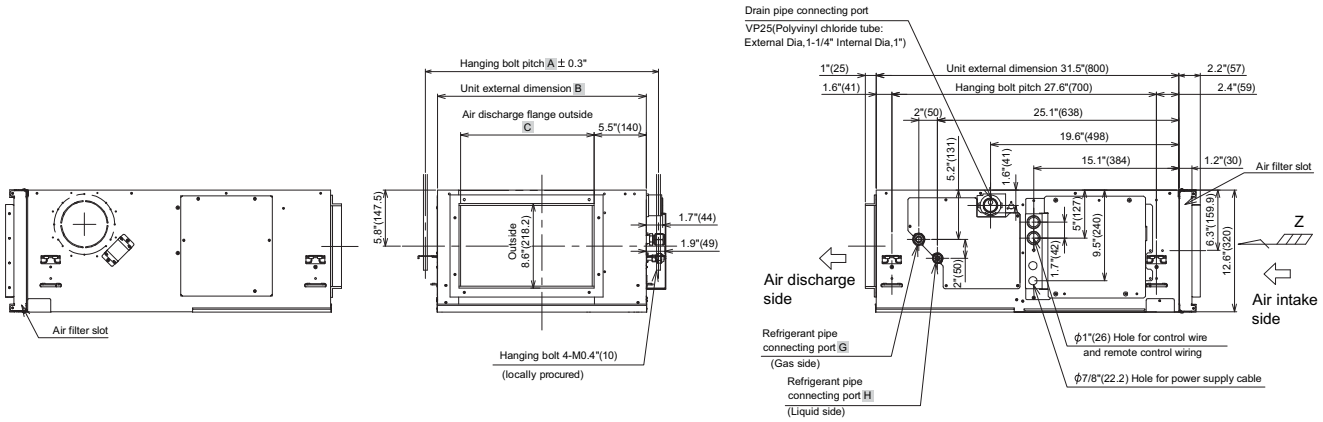
Note

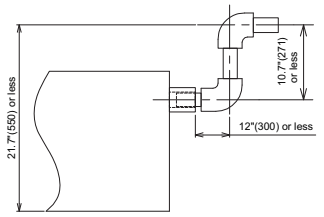
(*1) Non attached filter

(*2) The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.

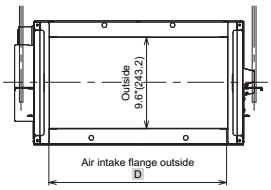
2. Dimensions

MMD-AP0074BH2UL, AP0094BH2UL, AP0124BH2UL, AP0154BH2UL, AP0184BH2UL, AP0214BH2UL, AP0244BH2UL, AP0304BH2UL, AP0364BH2UL, AP0424BH2UL, AP0484BH2UL





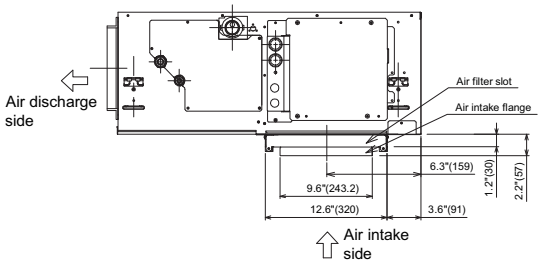
Drain-up piping



Z view

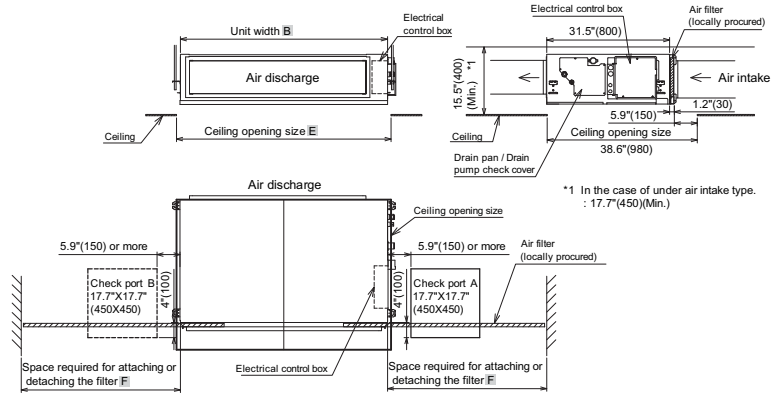
<Under air intake type>

For air intake from under air intake, be sure to attach a separately-sold fan guard.



Space required for installation and servicing

Reserve space required for maintenance the indoor unit and service work.



Notes)

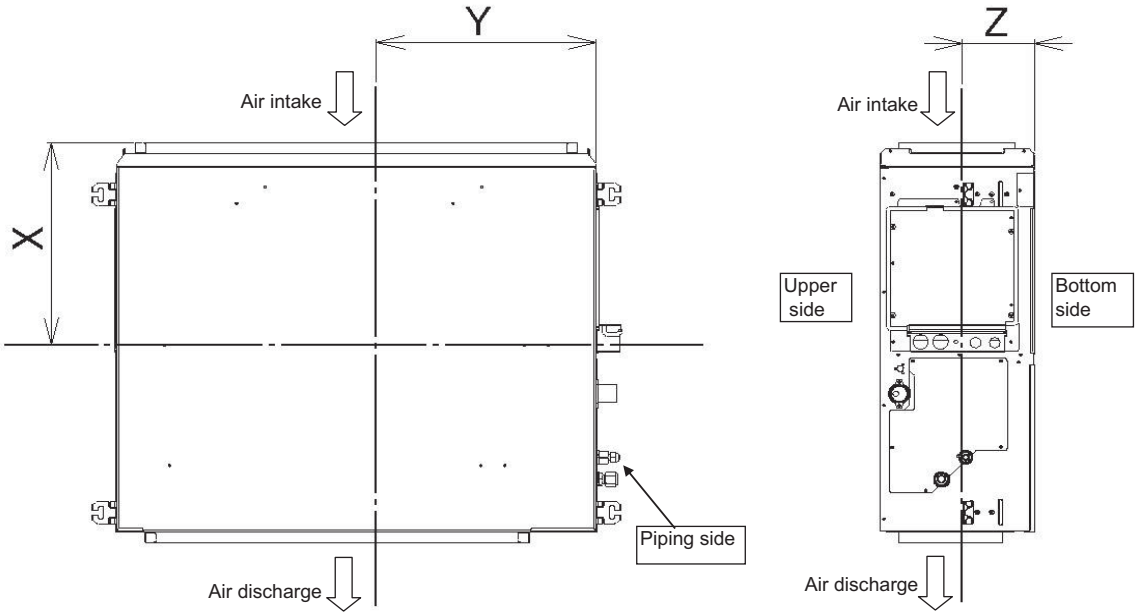
* Set check port A for maintaining the electrical control box, filter, drain pump, drain pipe, and refrigerant pipe.
* Replace the filter through check port A or B.
  (If you pull out the filter in the opposite direction of the electrical control box, check port B is required.)
  Reserve space F required for attaching or detaching thefilter.
  Otherwise, the filter cannot be replaced.
* When pulling the refrigerant pipe, drain pipe, etc, avoid the filter port. Otherwise,the filter cannot be replaced.
* The indoor unit is not equipped with an air filter. Procure and install with locally.
* Set a ceiling opening port for maintaining the fan, fan motor, etc. Otherwise, they cannot be maintained.

Unit:in (mm)

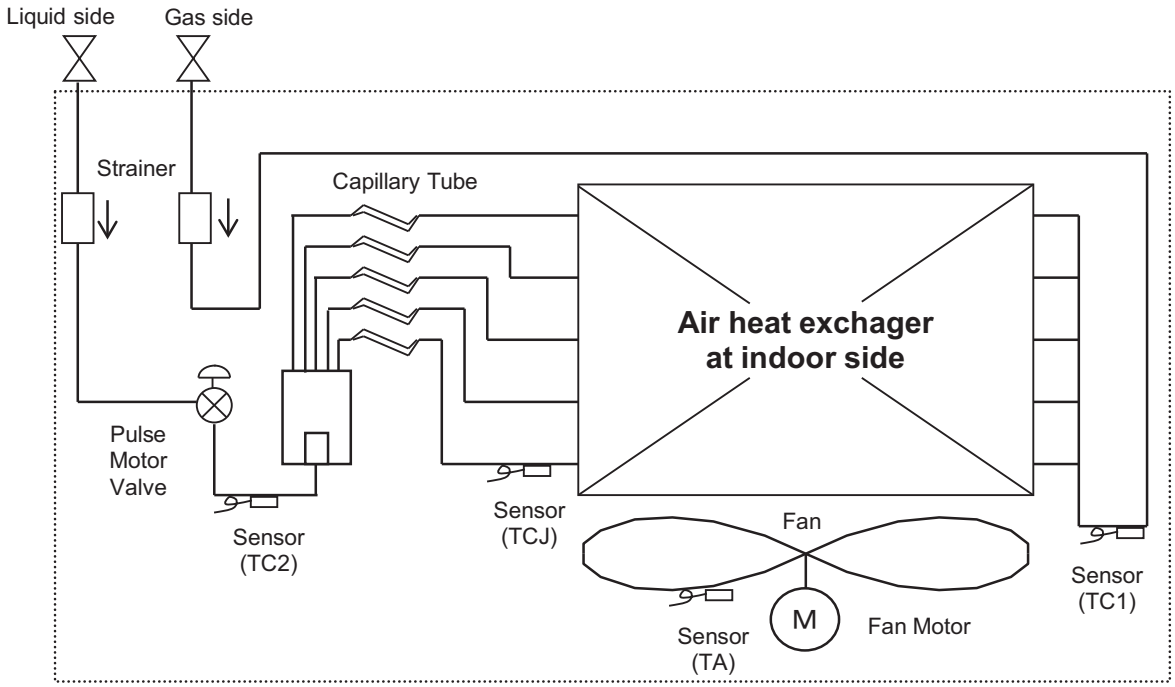
Model MMD-	A	B	C	D	E	F	G	H
AP0074BH2UL, AP0094BH2UL, AP0124BH2UL	24.3" (616)	21.7" (550)	13.9" (351.6)	18.6" (471.6)	23.6" (550)	23.6" (550)	Ø3/8" (9.5)	Ø1/4" (6.4)
AP0154BH2UL, AP0184BH2UL	42" (1066)	39.4" (1000)	31.6" (801.6)	36.3" (921.6)	41.3" (1050)	23.6" (550)	Ø1/2" (12.7)	Ø1/4" (6.4)
AP0214BH2UL, AP0244BH2UL, AP0304BH2UL, AP0364BH2UL, AP0424BH2UL, AP0484BH2UL	55.7" (1416)	53.2" (1350)	45.4" (1151.6)	50.1" (1271.6)	55.1" (1400)	40.5" (1030)	Ø5/8" (15.9)	Ø3/8" (9.5)

3. Center of gravity

Model name	X (In)	Y (In)	Z (In)	Total weight (lbs)
MMD-AP0074BH2UL MMD-AP0094BH2UL MMD-AP0124BH2UL	17.7	10.4	6.50	119
MMD-AP0154BH2UL MMD-AP0184BH2UL	17.5	18.1	5.91	93
MMD-AP0214BH2UL MMD-AP0244BH2UL MMD-AP0304BH2UL MMD-AP0364BH2UL MMD-AP0424BH2UL MMD-AP0484BH2UL	18.7	24.8	5.91	64

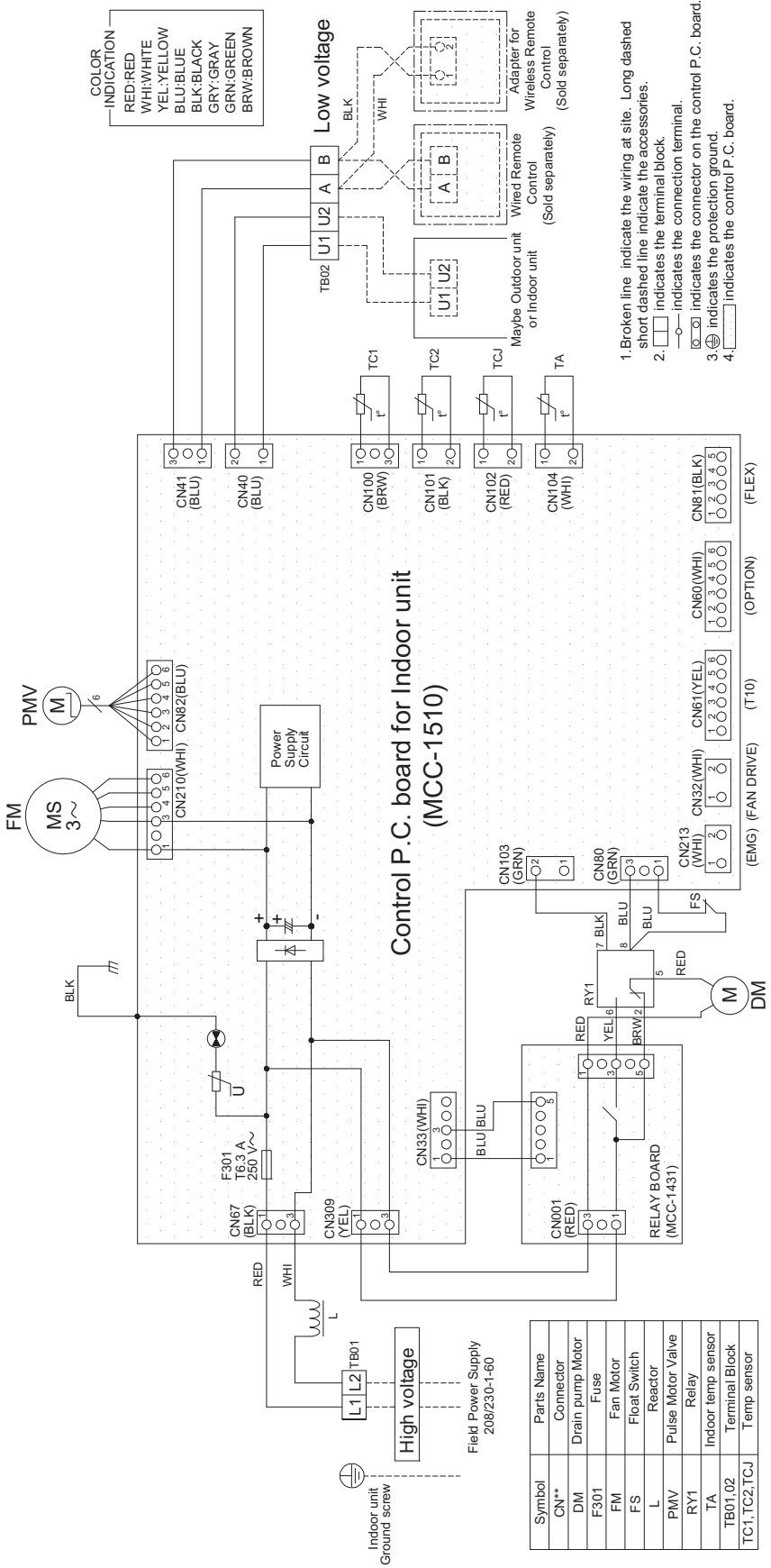


4. Piping diagram



5. Wiring diagram

MMD-AP0074BH2UL, AP0094BH2UL, AP0124BH2UL, AP0154BH2UL, AP0184BH2UL, AP0214BH2UL, AP0244BH2UL, AP0304BH2UL, AP0364BH2UL, AP0424BH2UL, AP0484BH2UL



6. Electrical current characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range (V)		Power consumption	FLA	MCA	MOCP
			Min	Max	kW	A	A	A
Medium Static Ducted type	MMD-AP0074BH2UL	208/230-1-60	187	253	0.038	0.8	1.0	15
	MMD-AP0094BH2UL	208/230-1-60	187	253	0.038	0.8	1.0	15
	MMD-AP0124BH2UL	208/230-1-60	187	253	0.042	0.8	1.0	15
	MMD-AP0154BH2UL	208/230-1-60	187	253	0.091	0.9	1.2	15
	MMD-AP0184BH2UL	208/230-1-60	187	253	0.091	0.9	1.2	15
	MMD-AP0214BH2UL	208/230-1-60	187	253	0.091	1.4	1.8	15
	MMD-AP0244BH2UL	208/230-1-60	187	253	0.091	1.4	1.8	15
	MMD-AP0304BH2UL	208/230-1-60	187	253	0.106	1.4	1.8	15
	MMD-AP0364BH2UL	208/230-1-60	187	253	0.106	1.8	2.3	15
	MMD-AP0424BH2UL	208/230-1-60	187	253	0.142	2.2	2.8	15
	MMD-AP0484BH2UL	208/230-1-60	187	253	0.142	2.2	2.8	15

MCA : Minimum Circuit Amps FLA : Full Load Amps
MOCP : Maximum Overcurrent Protection (Amps)

7. Sensible capacity table

Medium Static Ducted type (MMD-AP***4BH2UL)

TC: Total capacity [Btu/h] SHC: Sensible capacity [Btu/h]

unit size	outdoor air temp. °FDB	indoor air temp.													
		59 °FWB		61 °FWB		64 °FWB		67 °FWB		68 °FWB		72 °FWB		75 °FWB	
		71 °FDB		73 °FDB		77 °FDB		80 °FDB		82 °FDB		86 °FDB		90 °FDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	50	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	54	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	57	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	61	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	64	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	68	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	70	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	73	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	77	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	81	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	84	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	88	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	91	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	95	6380	5920	6680	6080	7100	6330	7500	6530	7630	6550	8110	6460	8450	6230
	99	6190	5750	6490	5900	6890	6150	7280	6340	7410	6360	7870	6270	8200	6050
	102	6050	5610	6330	5760	6730	6000	7110	6190	7230	6210	7690	6120	8010	5910
009	50	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	54	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	57	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	61	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	64	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	68	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	70	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	73	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	77	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	81	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	84	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	88	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	91	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	95	8090	6810	8460	7000	9000	7280	9500	7510	9660	7530	10270	7430	10700	7160
	99	7860	6610	8210	6800	8740	7070	9220	7290	9380	7310	9970	7210	10390	6950
	102	7670	6460	8020	6640	8530	6900	9010	7120	9160	7140	9740	7040	10140	6790
012	50	10210	7400	10690	7600	11360	7910	12000	8160	12210	8190	12980	8080	13510	7770
	54	10210	7400	10690	7600	11360	7910	12000	8160	12210	8190	12980	8080	13510	7770
	57	10210	7400	10690	7600	11360	7910	12000	8160	12210	8190	12980	8080	13510	7770
	61	10210	7400	10690	7600	11360	7910	12000	8160	12210	8190	12980	8080	13510	7770
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	68	10210	7400	10690	7600	11360	7910	12000	8160	12210	8190	12980	8080	13510	7770
	70	10210	7400	10690	7600	11360	7910	12000	8160	12210	8190	12980	8080	13510	7770
	73	10210	7400	10690	7600	11360	7910	12000	8160	12210	8190	12980	8080	13510	7770
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	84	10210	7400	10690	7600	11360	7910	12000	8160	12210	8190	12980	8080	13510	7770
	88	10210	7400	10690	7600	11360	7910	12000	8160	12210	8190	12980	8080	13510	7770
	91	10210	7400	10690	7600	11360	7910	12000	8160	12210	8190	12980	8080	13510	7770
	95	10210	7400	10690	7600	11360	7910	12000	8160	12210	8190	12980	8080	13510	7770
	99	9910	7190	10380	7380	11030	7680	11650	7920	11860	7950	12600	7850	13120	7540
	102	9680	7020	10130	7200	10770	7500	11380	7740	11580	7760	12310	7660	12810	7370
015	50	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	54	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	57	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	61	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	64	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	68	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	70	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	73	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	77	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	81	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	84	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	88	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	91	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	95	13110	11450	13710	11760	14580	12240	15400	12630	15660	12660	16660	12510	17340	12040
	99	12730	11120	13310	11420	14160	11890	14950	12260	15210	12290	16180	12150	16840	11690
	102	12430	10850	13000	11150	13820	11600	14600	11970	14850	12000	15790	11860	16440	11410

Medium Static Ducted type (MMD-AP***4BH2UL)

TC: Total capacity [Btu/h] SHC: Sensible capacity [Btu/h]

unit size	outdoor air temp. °FDB	indoor air temp.													
		59 °FWB		61 °FWB		64 °FWB		67 °FWB		68 °FWB		72 °FWB		75 °FWB	
		71 °FDB		73 °FDB		77 °FDB		80 °FDB		82 °FDB		86 °FDB		90 °FDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
018	50	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	54	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	57	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	61	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	64	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	68	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	70	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	73	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	77	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	81	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	84	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	88	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	91	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	95	15320	12400	16030	12740	17040	13260	18000	13680	18310	13720	19470	13550	20270	13040
	99	14880	12040	15570	12370	16550	12880	17480	13280	17780	13320	18910	13160	19680	12660
	102	14520	11760	15200	12080	16150	12570	17060	12970	17360	13010	18460	12850	19220	12360
021	50	17240	14340	19070	15270	20370	16220	21000	16170	21630	16170	22890	16020	23940	15650
	54	17240	14340	19070	15270	20370	16220	21000	16170	21630	16170	22890	16020	23940	15650
	57	17240	14340	19070	15270	20370	16220	21000	16170	21630	16170	22890	16020	23940	15650
	61	17240	14340	19070	15270	20370	16220	21000	16170	21630	16170	22890	16020	23940	15650
	64	17240	14340	19070	15270	20370	16220	21000	16170	21630	16170	22890	16020	23940	15650
	68	17240	14340	19070	15270	20370	16220	21000	16170	21630	16170	22890	16020	23940	15650
	70	17240	14340	19070	15270	20370	16220	21000	16170	21630	16170	22890	16020	23940	15650
	73	17240	14340	19070	15270	20370	16220	21000	16170	21630	16170	22890	16020	23940	15650
	77	17240	14340	19070	15270	20370	16220	21000	16170	21630	16170	22890	16020	23940	15650
	81	17240	14340	19070	15270	20370	16220	21000	16170	21630	16170	22890	16020	23940	15650
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	88	17240	14340	19070	15270	20370	16220	21000	16170	21630	16170	22890	16020	23940	15650
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	99	16740	13920	18520	14830	19780	15750	20390	15700	21000	15700	22230	15560	23250	15200
	102	16340	13590	18080	14480	19310	15380	19910	15330	20510	15330	21700	15190	22700	14840
024	50	19704	15322	21792	16318	23280	17331	24000	17280	24720	17279	26160	17120	27360	16724
	54	19704	15322	21792	16318	23280	17331	24000	17280	24720	17279	26160	17120	27360	16724
	57	19704	15322	21792	16318	23280	17331	24000	17280	24720	17279	26160	17120	27360	16724
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	64	19704	15322	21792	16318	23280	17331	24000	17280	24720	17279	26160	17120	27360	16724
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	95	19704	15322	21792	16318	23280	17331	24000	17280	24720	17279	26160	17120	27360	16724
	99	19133	14877	21160	15845	22605	16829	23304	16779	24003	16778	25401	16623	26567	16239
	102	18679	14525	20659	15469	22069	16430	22752	16381	23435	16380	24800	16229	25937	15854
030	50	24630	17560	27240	18700	29100	19860	30000	19800	30900	19800	32700	19620	34200	19160
	54	24630	17560	27240	18700	29100	19860	30000	19800	30900	19800	32700	19620	34200	19160
	57	24630	17560	27240	18700	29100	19860	30000	19800	30900	19800	32700	19620	34200	19160
	61	24630	17560	27240	18700	29100	19860	30000	19800	30900	19800	32700	19620	34200	19160
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	88	24630	17560	27240	18700	29100	19860	30000	19800	30900	19800	32700	19620	34200	19160
	91	24630	17560	27240	18700	29100	19860	30000	19800	30900	19800	32700	19620	34200	19160
	95	24630	17560	27240	18700	29100	19860	30000	19800	30900	19800	32700	19620	34200	19160
	99	23920	17050	26450	18160	28260	19280	29130	19230	30000	19230	31750	19050	33210	18600
	102	23350	16650	25820	17730	27590	18830	28440	18770	29290	18770	31000	18600	32420	18160

Medium Static Ducted type (MMD-AP***4BH2UL)

TC: Total capacity [Btu/h] SHC: Sensible capacity [Btu/h]

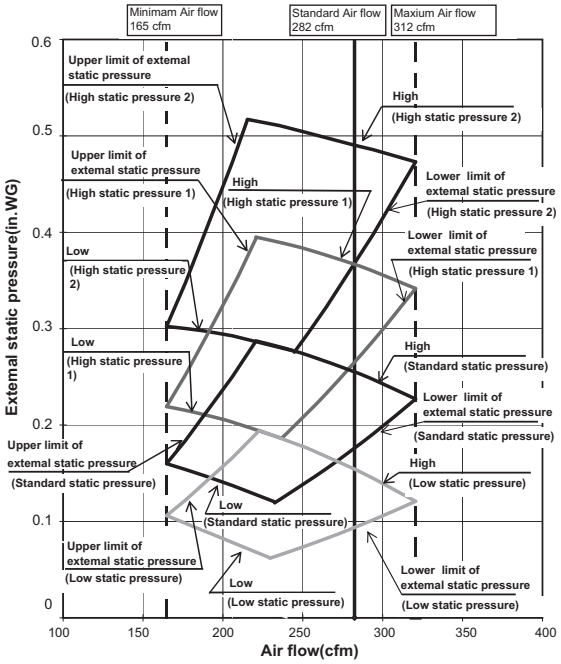
unit size	outdoor air temp. °FDB	indoor air temp.													
		59 °FWB		61 °FWB		64 °FWB		67 °FWB		68 °FWB		72 °FWB		75 °FWB	
		71 °FDB		73 °FDB		77 °FDB		80 °FDB		82 °FDB		86 °FDB		90 °FDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
036	50	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	54	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	57	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	61	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	64	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	68	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	70	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	73	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	77	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	81	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	84	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	88	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	91	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	95	29560	24260	32690	25840	34920	27440	36000	27360	37080	27360	39240	27110	41040	26480
	99	28700	23560	31740	25090	33910	26640	34960	26570	36000	26570	38100	26320	39850	25710
	102	28020	23000	30990	24500	33100	26010	34130	25940	35150	25940	37200	25700	38910	25100
042	50	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	54	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	57	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	61	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	64	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	68	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	70	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	73	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	77	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	81	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	84	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	88	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	91	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	95	34480	26810	38140	28560	40740	30330	42000	30240	43260	30240	45780	29960	47880	29270
	99	33480	26030	37030	27730	39560	29450	40780	29360	42010	29360	44450	29090	46490	28420
	102	32690	25420	36160	27070	38620	28750	39820	28670	41010	28670	43400	28400	45390	27750
048	50	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	54	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	57	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	61	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	64	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	68	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	70	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	73	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	77	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	81	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	84	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	88	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	91	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	95	39410	29370	43580	31270	46560	33220	48000	33120	49440	33120	52320	32810	54720	32050
	99	38270	28520	42320	30360	45210	32260	46610	32160	48010	32160	50800	31860	53130	31120
	102	37360	27840	41310	29640	44140	31490	45500	31400	46870	31400	49600	31100	51870	30380

8. Fan characteristics

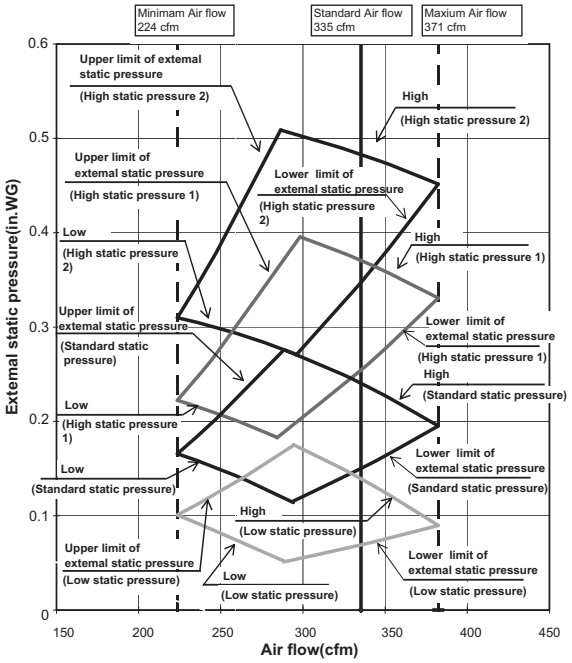
Rear suction

* It is not possible to use the level of external static pressure that is lower than the resistance pressure of the filter (locally procured). Therefore be sure to check the pressure of installed filter, and to set correct pressure level that is higher than pressure of the filter.

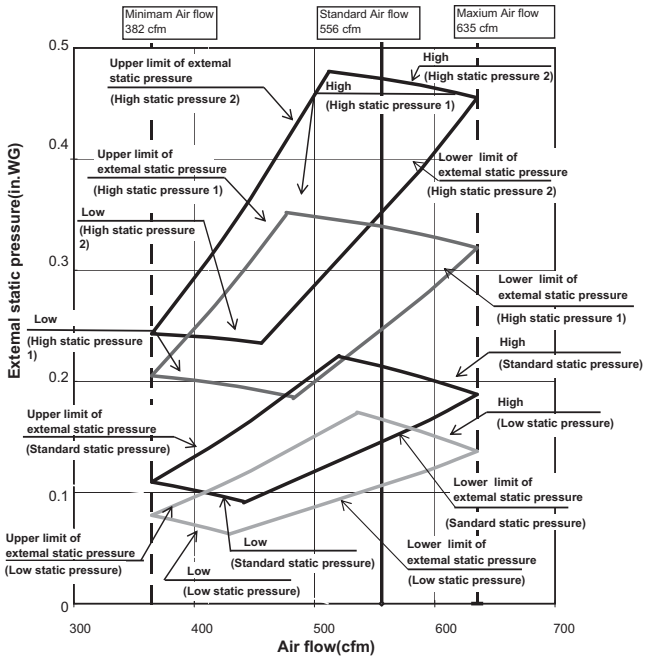
MMD-AP0074BH2UL
MMD-AP0094BH2UL



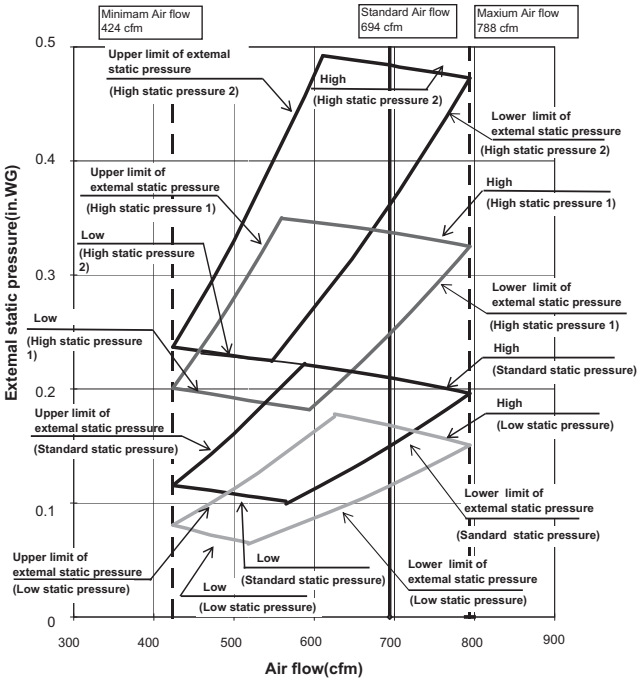
MMD-AP0124BH2UL



MMD-AP0154BH2UL
MMD-AP0184BH2UL

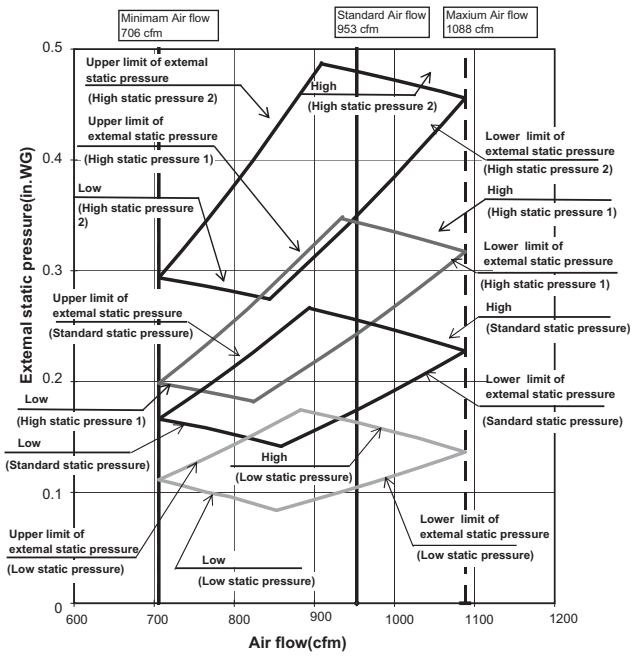


MMD-AP0214BH2UL
MMD-AP0244BH2UL
MMD-AP0304BH2UL

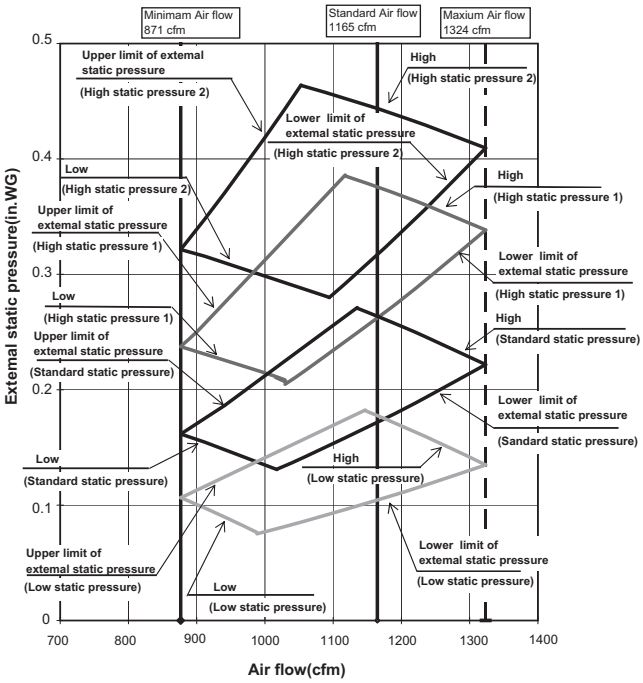


Rear suction

MMD-AP0364BH2UL

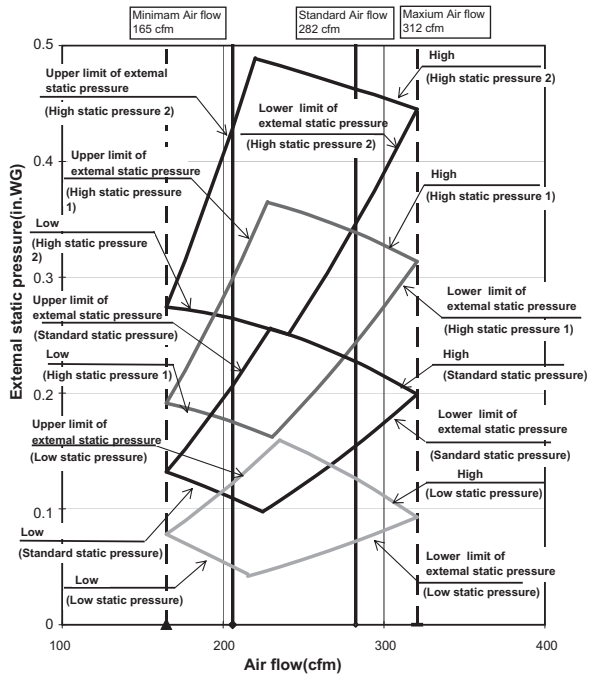


MMD-AP0424BH2UL
MMD-AP0484BH2UL

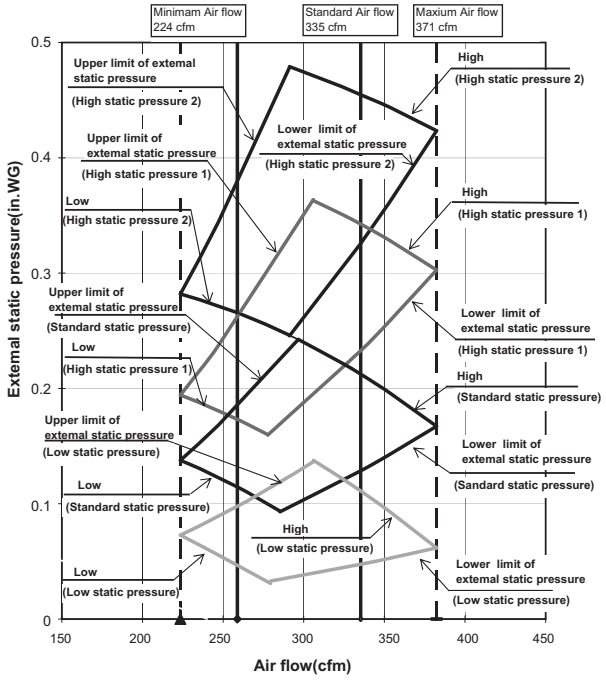


Underside suction

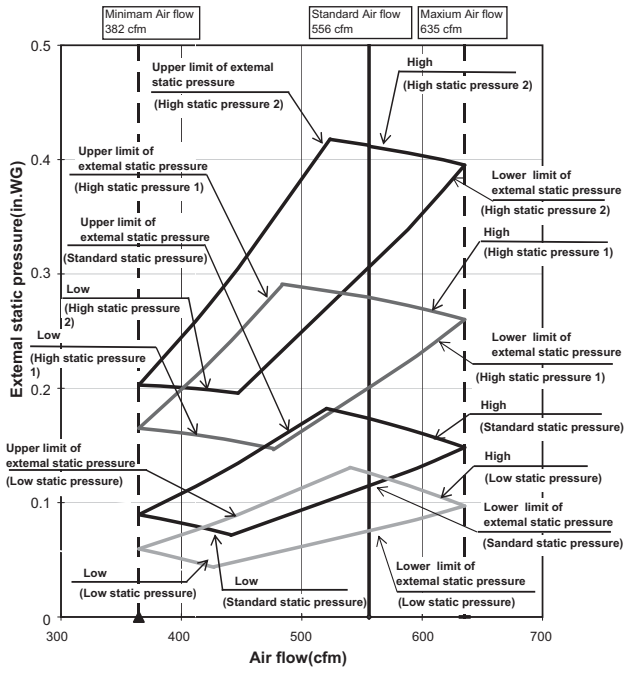
MMD-AP0074BH2UL
MMD-AP0094BH2UL



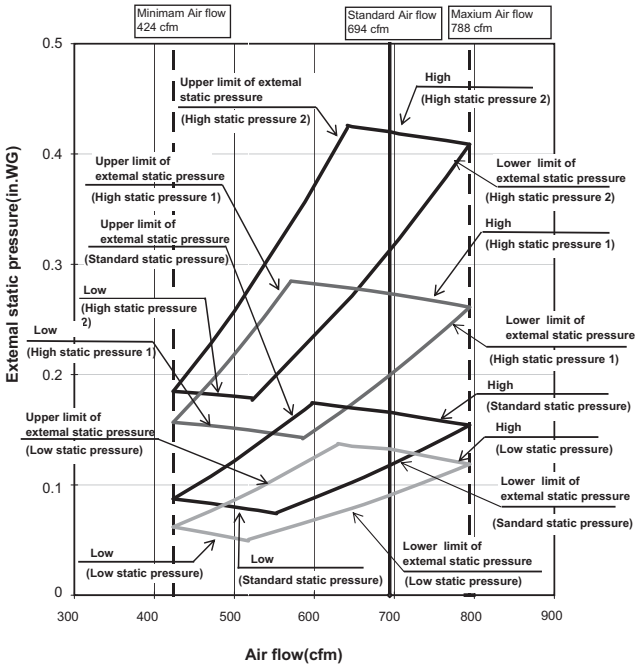
MMD-AP0124BH2UL



MMD-AP0154BH2UL
MMD-AP0184BH2UL

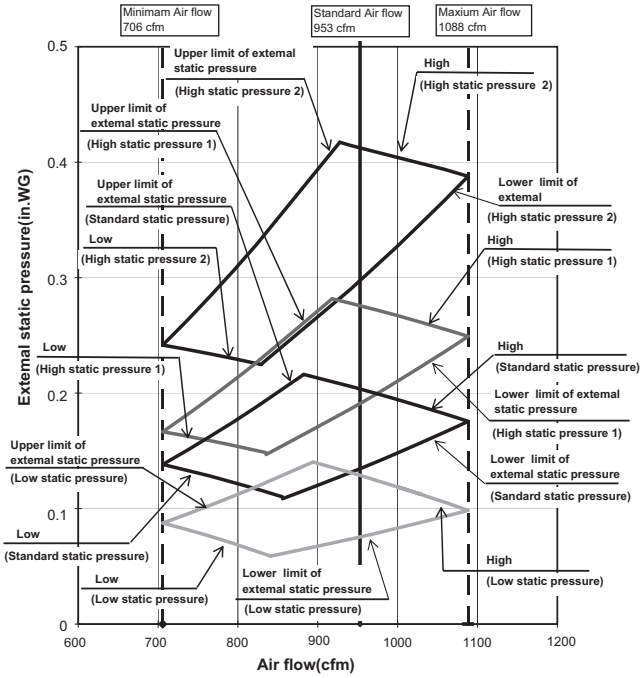


MMD-AP0214BH2UL
MMD-AP0244BH2UL
MMD-AP0304BH2UL

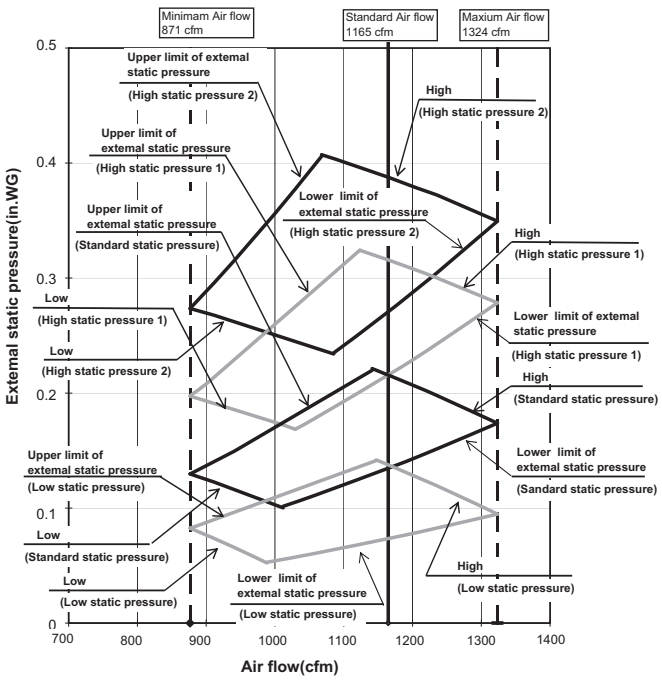


Underside suction

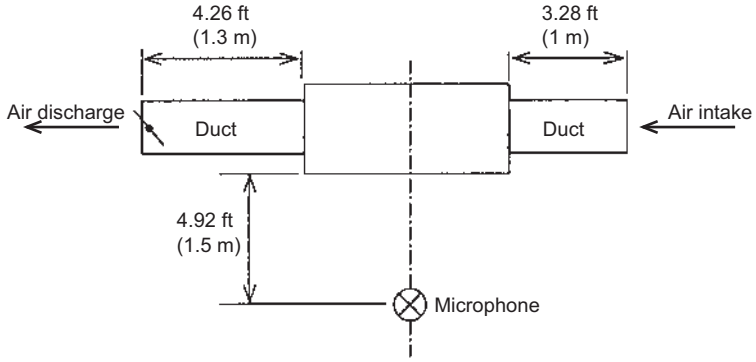
MMD-AP0364BH2UL



MMD-AP0424BH2UL
MMD-AP0484BH2UL

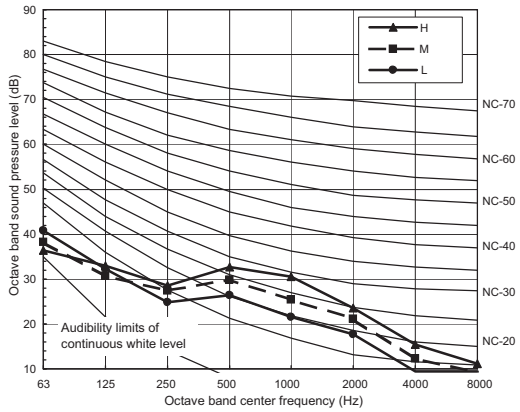


9. Sound data



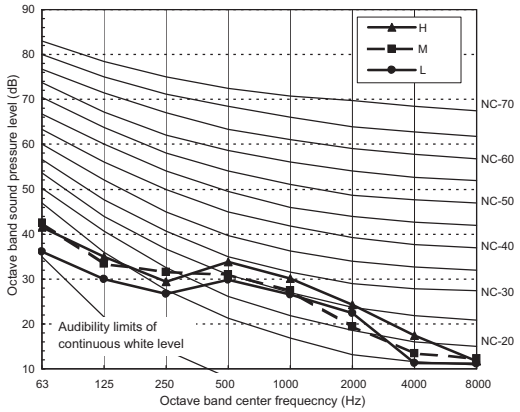
MMD-AP0074/0094BH2UL

Sound pressure level (dB (A))	H - M - L
	34-30.5-27.5



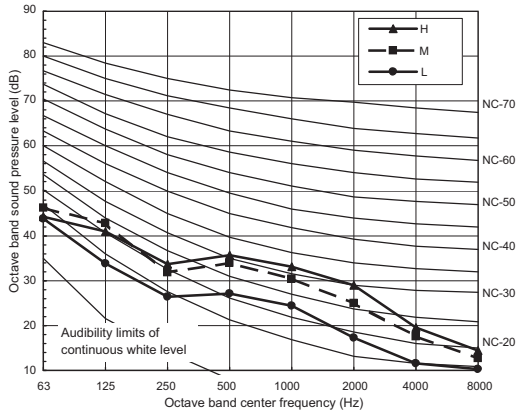
MMD-AP0124BH2UL

Sound pressure level (dB (A))	H - M - L
	34.5-32-31



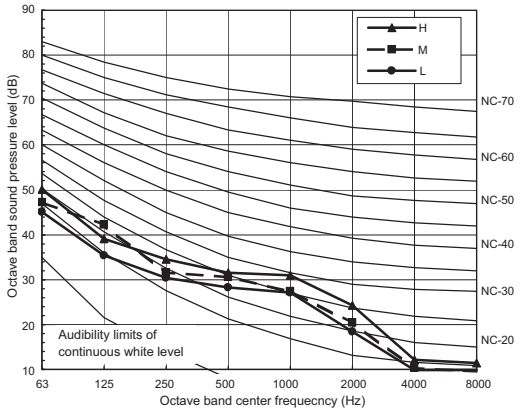
MMD-AP0154/0184BH2UL

Sound pressure level (dB (A))	H - M - L
	37.5-35.5-29



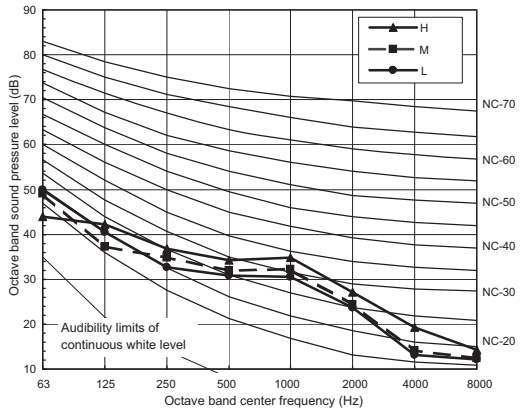
MMD-AP0214/0244/0304BH2UL

Sound pressure level (dB (A))	H - M - L
	35-33-31



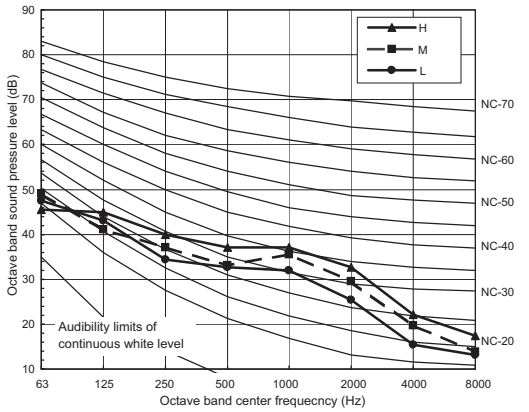
MMD-AP0364BH2UL

Sound pressure level (dB (A))	H - M - L
	38-35.5-34.5



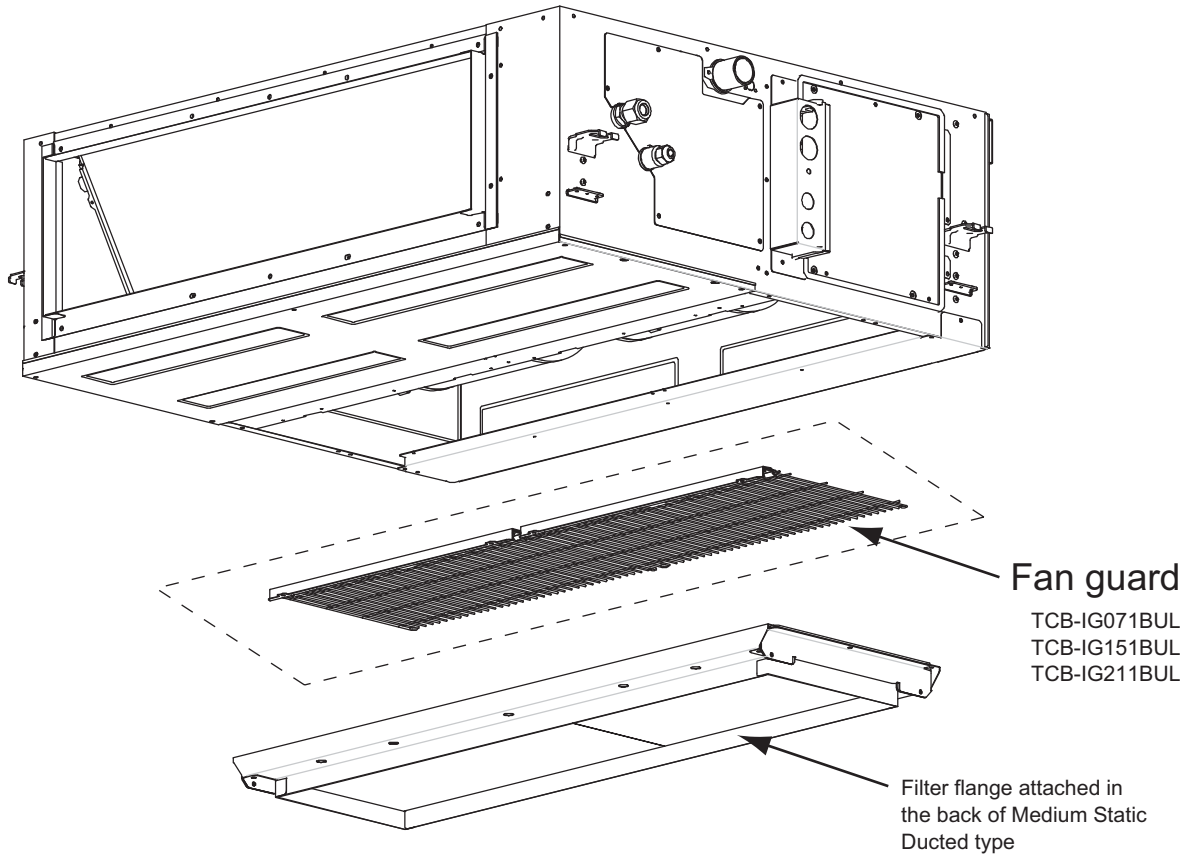
MMD-AP0424/0484BH2UL

Sound pressure level (dB (A))	H - M - L
	41-38.5-36



10. Accessories

Optional part for Medium Static Ducted type



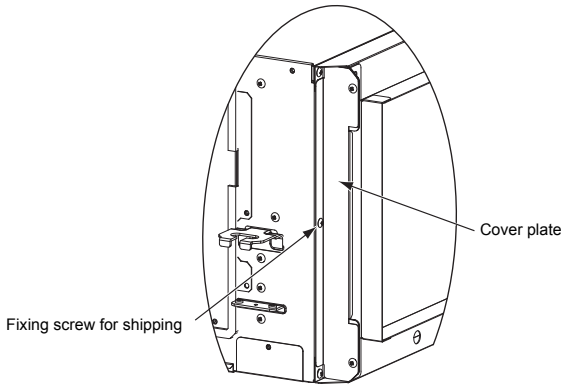
Parts Name	Model name	Applied Model	Note
Fan guard	TCB-IG071BUL	MMD-AP0074 to 0124BH2UL	For underside suction
	TCB-IG151BUL	MMD-AP0154 to 0184BH2UL	
	TCB-IG211BUL	MMD-AP0214 to 0484BH2UL	

11. Reference

11-1 Fan guard

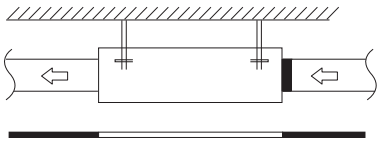
Preparation before installation

Remove a fixing screw for shipping from the cover plate of the filter rack, and block the screw hole with tape.

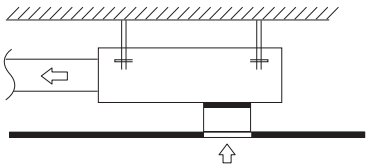


Arranging the under intake type

<Back air intake>



<Under air intake>

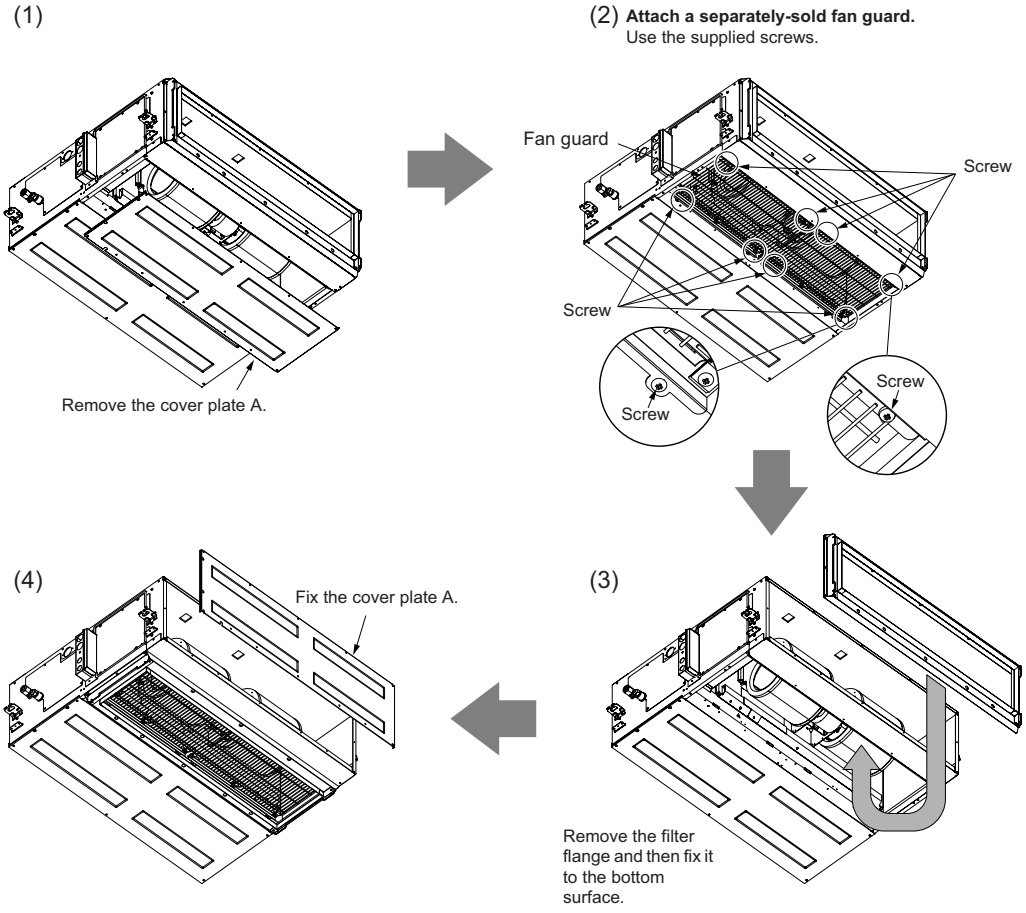


⚠ CAUTION

For air intake from under air intake, be sure to attach a separately-sold fan guard.

Model	MMD-	AP007 to AP012	AP015 to AP018	AP021 to AP048
FAN-GUARD	model name	TCB-IG071BUL	TCB-IG151BUL	TCB-IG211BUL

For air intake from under air intake, replace the cover (A) and filter flange as shown below before installing the unit.



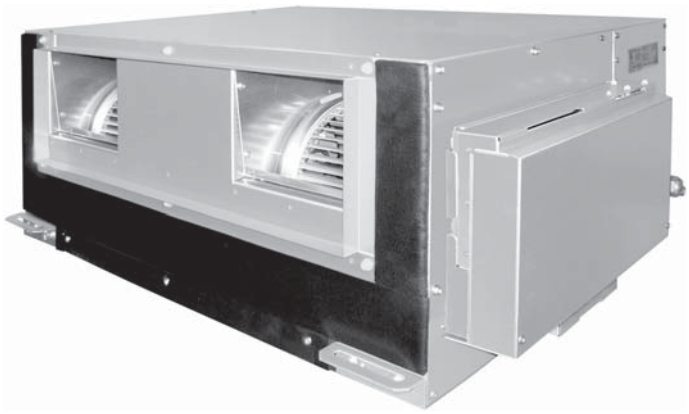
6-6. High Static Ducted type

High Static Ducted type

MMD-AP0304H2UL

MMD-AP0364H2UL

MMD-AP0484H2UL



Contents

1. Specifications

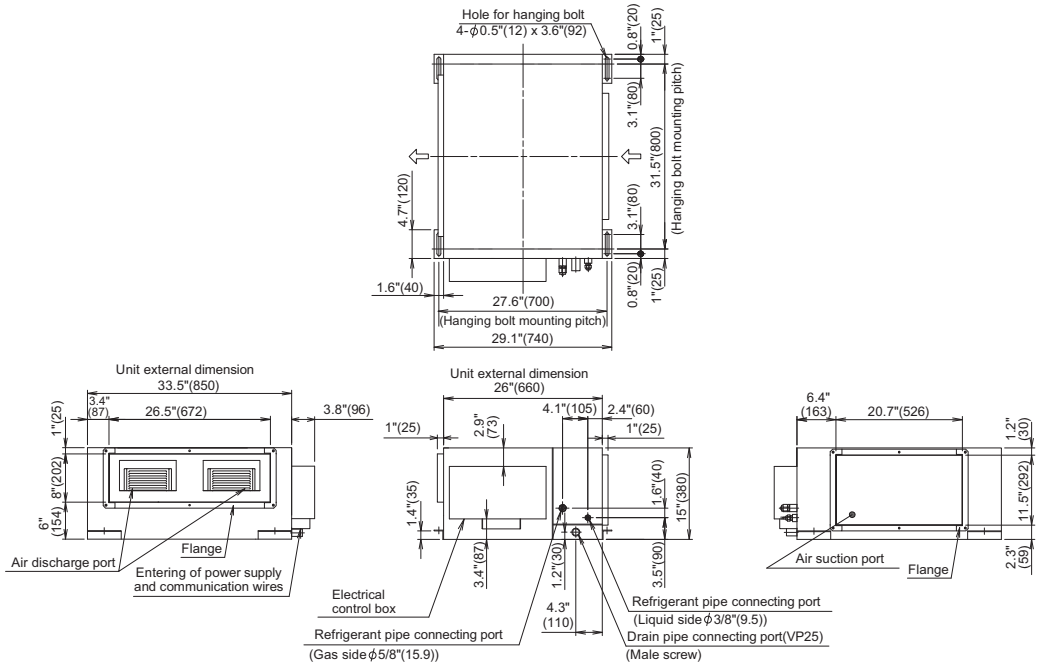
Concealed Duct High Static Pressure type

Model name			MMD-	AP0304H2UL	AP0364H2UL	AP0484H2UL
Cooling Capacity			kBtu/h	30	36	48
Heating Capacity			kBtu/h	34	40	54
Electrical characteristics	Power supply			230 V (208/230 V) 1phase 60 Hz		
	Power consumption (208/230 V)		kW	0.38/0.41	0.38/0.41	0.35/0.41
Appearance				Zinc hot dipping steel plate		
Dimension	Unit	Height	In	15.0		
		Width	In	33.5		47.2
		Depth	In	26.0		
	Packing	Height	In	17.0		
		Width	In	42.6		56.4
		Depth	In	31.9		
Total weight	Unit		lbs	128		154
	Packed unit		lbs	141		176
Heat exchanger				Finned tube		
Fan unit	Fan			Centrifugal fan		
	Standard air flow		cfm	926		1235
	Motor		W	260		
	External static pressure (*1)	Factory default (208/230 V)	In WG	0.641/0.814		0.296/0.519
		208 V (High tap/Mid tap/Low tap) (*3)	In WG	1.075 - 0.641 - 0.287		0.606 - 0.296 - Non
		230 V (High tap/Mid tap/Low tap) (*3)	In WG	1.175 - 0.814 - 0.506		0.801 - 0.519 - 0.114
	Air flow limit	Lower limit	cfm	755.2		988.2
		Upper limit	cfm	1132.8		1447.1
Air filter				Field supply		
Connecting pipe	Gas side		In	5/8"		
	Liquid side		In	3/8"		
	Drain port (Nominal dia.)		In	VP25(Polyvinyl chloride tube: External Dia.1-1/4 Internal Dia.1)		
Sound pressure level (*2)		208 V (High tap/Mid tap/Low tap) (*3)	dB(A)	49.5/45/41		47/44/-
		230 V (High tap/Mid tap/Low tap) (*3)	dB(A)	51/47/43		49/46/43

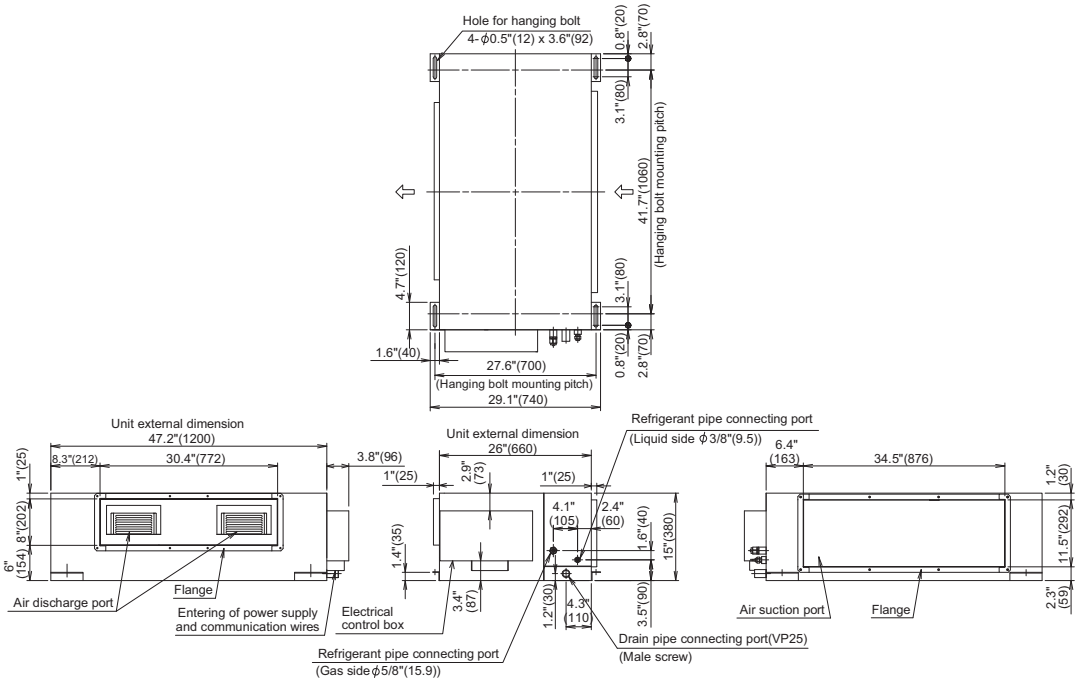
Note
(*1) Non attached filter
(*2) The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.
(*3) The tap is set by wire connection change of fan motor.

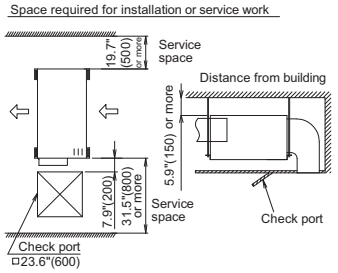
2. Dimensions

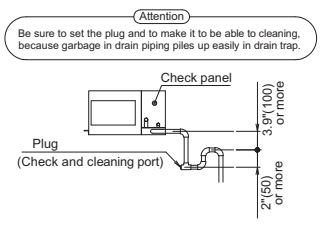
MMD-AP0304H2UL, AP0364H2UL



MMD-AP0484H2UL



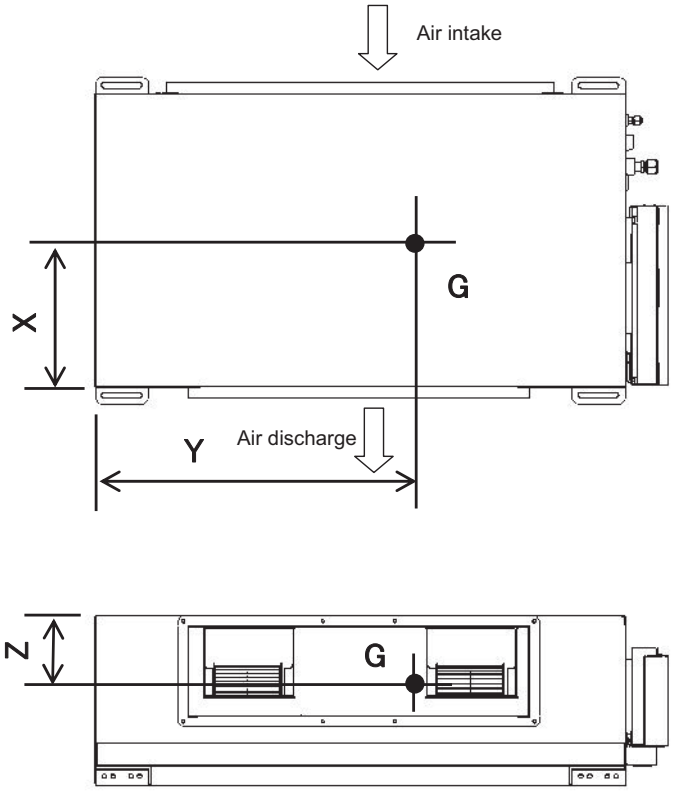




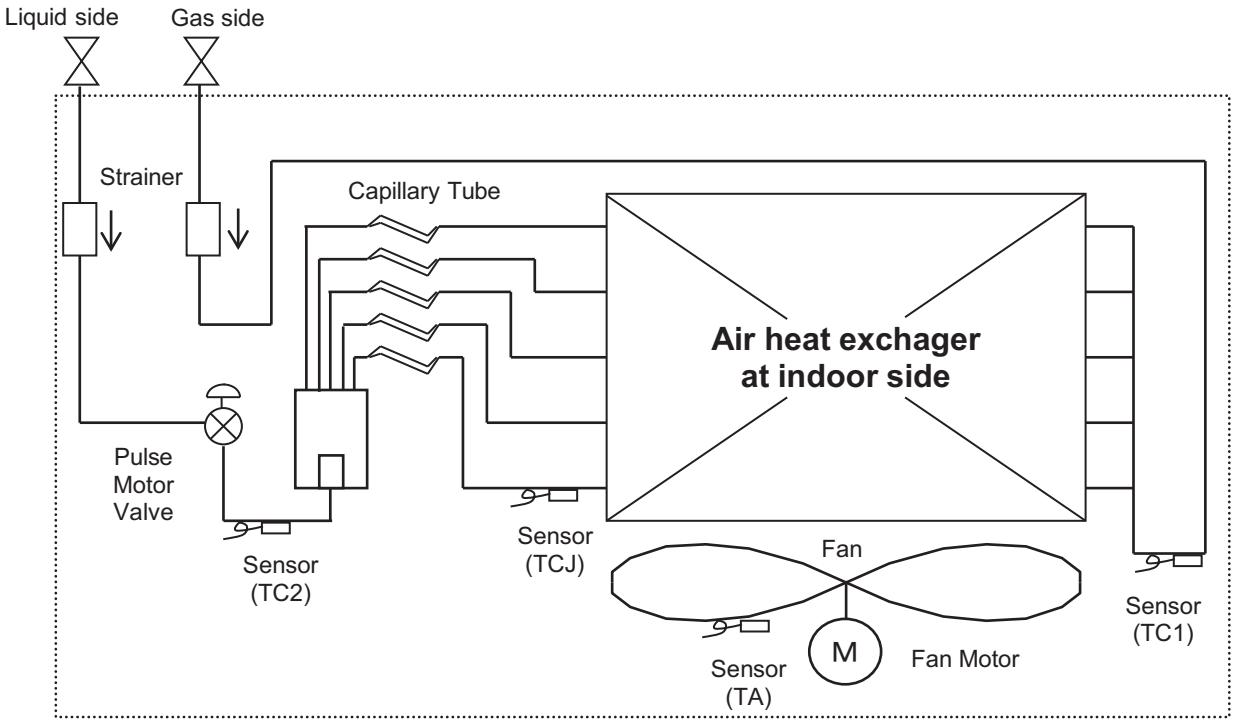
<Note>
1. Indoor unit does not have air filter its inside. So be sure to set an air filter (local arrangements) in the position maintained easily such as a air intake grille. (If there is no air filter, dusts are blocked in the air heat exchanger and it may cause failure or water leak in air-conditioner.)
2. Leave sufficient space to remove the air filter when you attach it.

3. Center of gravity

Model name	X (In)	Y (In)	Z (In)	Total weight (lbs)
MMD-AP0304H2UL MMD-AP0364H2UL	11.4	17.7	7.7	128
MMD-AP0484H2UL	11.4	25.4	7.7	154

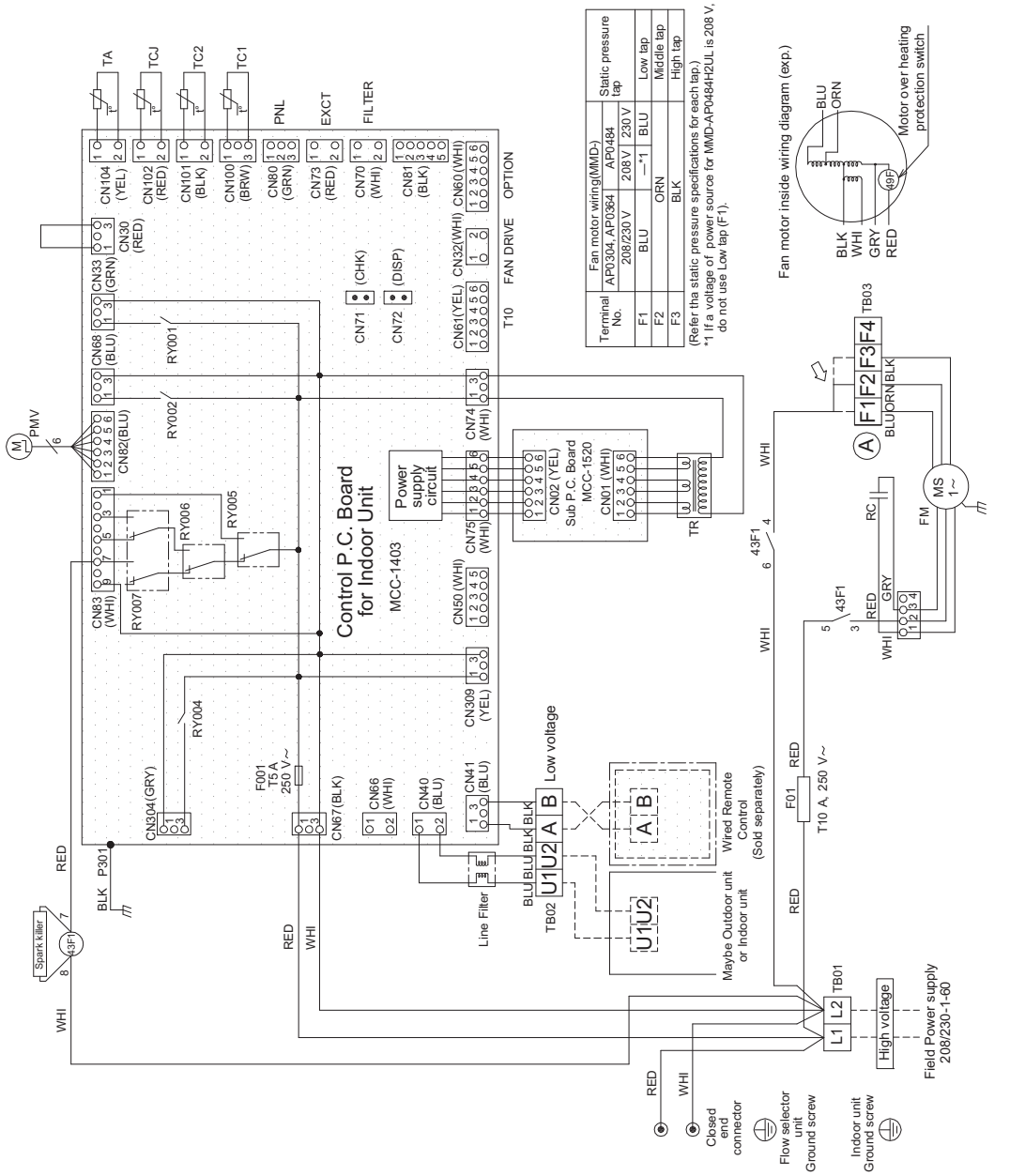


4. Piping diagram



5. Wiring diagram

MMD-AP0304H2UL, AP0364H2UL, AP0484H2UL



Symbol	Parts Name
43F1	Fan motor Control Relay
CN**	Connector
F01	Fuse
F001	Fuse
FM	Fan Motor
PMV	Pulse Motor Valve
RC	Running Capacitor
RY005,006,007	Fan Motor Control Relay
TA	Indoor temp sensor
TB01,02,03	Terminal Block
TC1,TC2,TCJ	Temp sensor
TR	Transformer

1. Broken line indicate the wiring at site. Long dashed short dashed line indicate the accessories.
2. ☐ indicates the terminal block.
   —○— indicates the connection terminal.
   ○○ indicates the connector on the control P.C. board.
3. ⏚ indicates the protection ground.
4. [ ] indicates the control P.C. board.
5. Ⓐ position is connected to terminal block when change to static pressure. exchange the lead wire of arrow(⇦) position after check the terminal number as figure and lead wire's color of fan motor.

COLOR IDENTIFICATION

RED : RED	GRY : GRAY
WHI : WHITE	PNK : PINK
YEL : YELLOW	ORN : ORANGE
BLU : BLUE	BRW : BROWN
BLK : BLACK	GRN : GREEN

6. Electrical current characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range (V)		Power consumption	FLA	MCA	MOCP
			Min	Max	kW	A	A	A
High Static Ducted type	MMD-AP0304H2UL	208/230-1-60	187	253	0.38/0.41	2.34	2.93	15
	MMD-AP0364H2UL	208/230-1-60	187	253	0.38/0.41	2.34	2.93	15
	MMD-AP0484H2UL	208/230-1-60	187	253	0.35/0.41	2.92	3.65	15

MCA : Minimum Circuit Amps
FLA : Full Load Amps
MOCP : Maximum Overcurrent Protection (Amps)

7. Sensible capacity table

High Static Ducted type (MMD-AP***4H2UL)

TC: Total capacity [Btu/h] SHC: Sensible capacity [Btu/h]

unit size	outdoor air temp. °FDB	indoor air temp.													
		59 °FWB		61 °FWB		64 °FWB		67 °FWB		68 °FWB		72 °FWB		75 °FWB	
		71 °FDB		73 °FDB		77 °FDB		80 °FDB		82 °FDB		86 °FDB		90 °FDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
030	50	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	54	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	57	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	61	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	64	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	68	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	70	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	73	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	77	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	81	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	84	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	88	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	91	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	95	24630	19550	27240	20820	29100	22120	30000	22050	30900	22050	32700	21850	34200	21340
	99	23920	18980	26450	20220	28260	21480	29130	21410	30000	21410	31750	21220	33210	20720
	102	23350	18530	25820	19740	27590	20970	28440	20900	29290	20900	31000	20710	32420	20230
036	50	29560	23310	32690	24820	34920	26360	36000	26280	37080	26280	39240	26040	41040	25430
	54	29560	23310	32690	24820	34920	26360	36000	26280	37080	26280	39240	26040	41040	25430
	57	29560	23310	32690	24820	34920	26360	36000	26280	37080	26280	39240	26040	41040	25430
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	99	28700	22630	31740	24100	33910	25600	34960	25520	36000	25520	38100	25280	39850	24690
	102	28020	22100	30990	23530	33100	24990	34130	24910	35150	24910	37200	24690	38910	24110
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	54	39410	32770	43580	34900	46560	37070	48000	36960	49440	36960	52320	32810	54720	35770
	57	39410	32770	43580	34900	46560	37070	48000	36960	49440	36960	52320	32810	54720	35770
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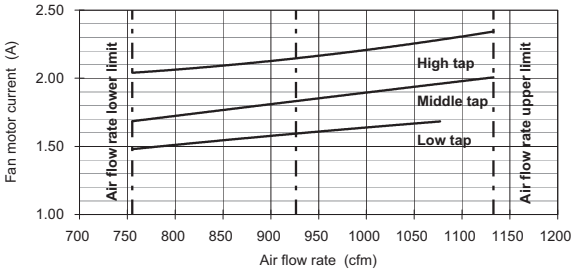
	95	39410	32770	43580	34900	46560	37070	48000	36960	49440	36960	52320	36620	54720	35770
	99	38270	31820	42320	33890	45210	35990	46610	35890	48010	35890	50800	35560	53130	34730
	102	37360	31070	41310	33090	44140	35140	45500	35040	46870	35040	49600	34720	51870	33910

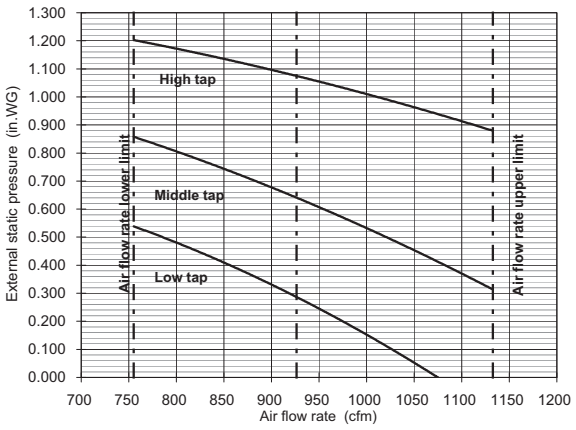
8. Fan characteristics

MMD-AP0304H2UL, AP0364H2UL

Power source : 208 V/60 Hz

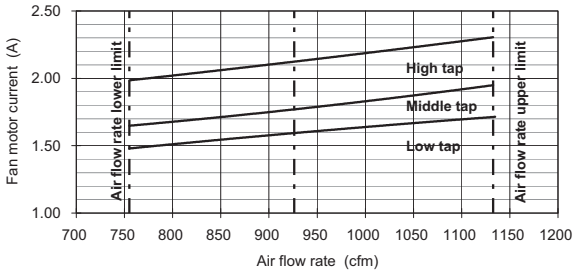
tap	External static pressure (in.WG)	Standard air flow rate (cfm)
High	1.075	926
Middle	0.641	
Low	0.287	

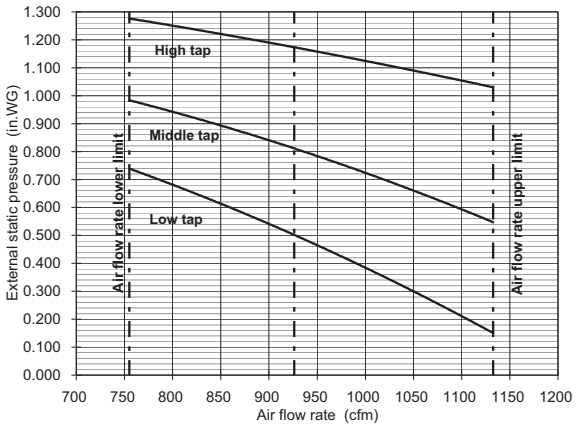




Power source : 230 V/60 Hz

tap	External static pressure (in.WG)	Standard air flow rate (cfm)
High	1.175	926
Middle	0.814	
Low	0.506	

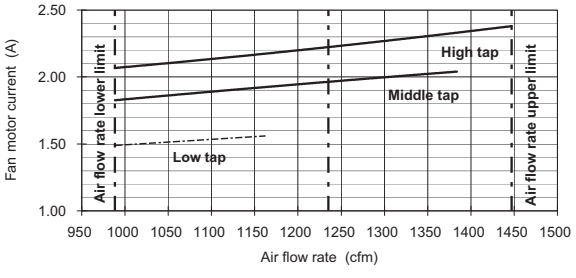


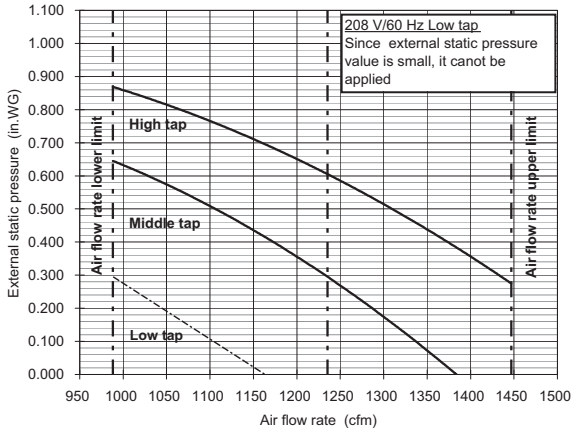


MMD-AP0484H2UL

Power source : 208 V/60 Hz

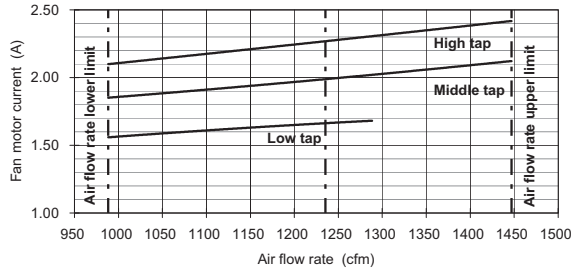
tap	External static pressure (in.WG)	Standard air flow rate (cfm)
High	0.606	1235
Middle	0.296	
Low	—	

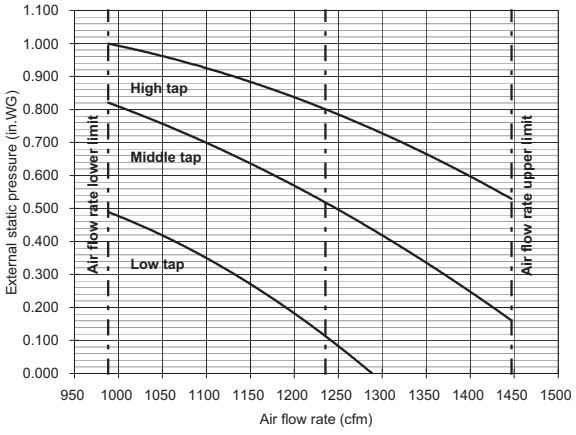




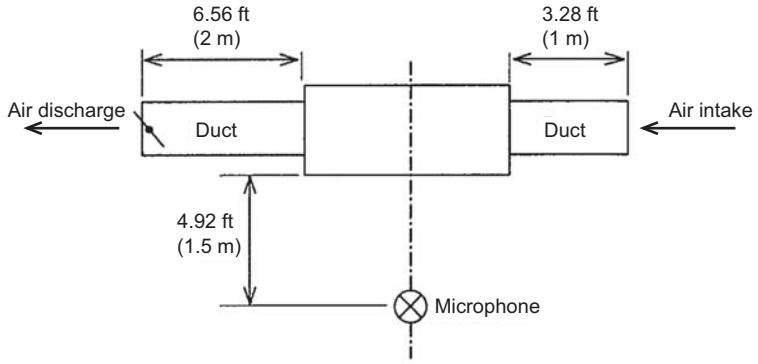
Power source : 230 V/60 Hz

tap	External static pressure (in.WG)	Standard air flow rate (cfm)
High	0.801	1235
Middle	0.519	
Low	0.114	



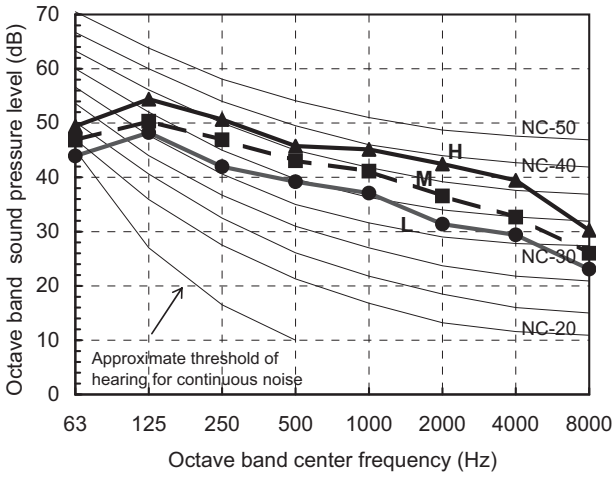


9. Sound data



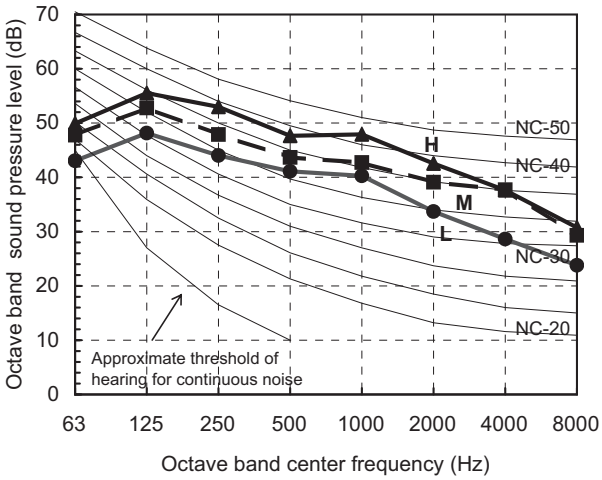
MMU-AP0304H2UL, AP0364H2UL (208 V)

Fan tap	H	M	L
Sound pressure level (dB(A))	49.5	45	41



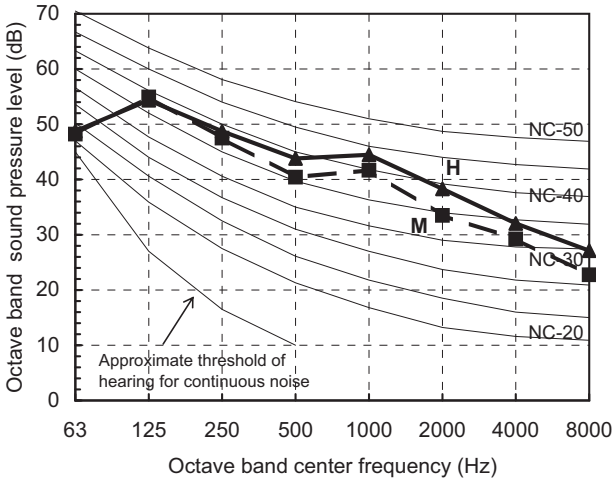
MMU-AP0304H2UL, AP0364H2UL (230 V)

Fan tap	H	M	L
Sound pressure level (dB(A))	51	47	43



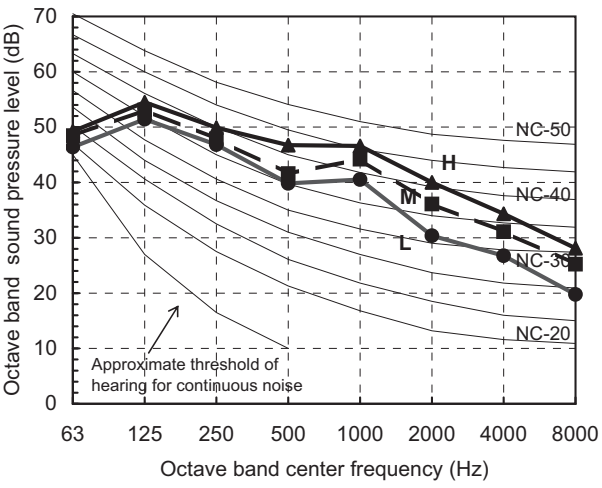
MMU-AP0484H2UL (208 V)

Fan tap	H	M	L
Sound pressure level (dB(A))	47	44	-



MMU-AP0484H2UL (230 V)

Fan tap	H	M	L
Sound pressure level (dB(A))	49	46	43



6-7. Slim Ducted type

Slim Ducted type

MMD-AP0074SPH2UL
MMD-AP0094SPH2UL
MMD-AP0124SPH2UL
MMD-AP0154SPH2UL
MMD-AP0184SPH2UL

Contents

1. Specifications

Slim Ducted type

Model name				MMD-	AP0074SPH2UL	AP0094SPH2UL	AP0124SPH2UL	AP0154SPH2UL	AP0184SPH2UL
Cooling Capacity				kBtu/h	7.5	9.5	12	15.4	18
Heating Capacity				kBtu/h	8.5	10.5	13.5	17	20
Electrical characteristics	Power supply				230 V (208/230 V) 1phase 60 Hz				
	Power consumption			kW	0.043	0.043	0.048	0.061	0.071
Appearance					Zinc hot dipping steel plate				
Dimension	Unit	Height		In	8.3				
		Width		In	33.3				
		Depth		In	25.4				
	Packing	Height		In	10.5				
		Width		In	41				
		Depth		In	30.3				
Total weight	Unit			lbs	49			51	
	Packed unit			lbs	57			60	
Heat exchanger					Finned tube				
Fan unit	Fan				Centrifugal fan				
	Standard air flow (High/Mid/Low)			cfm	318/276/235		353/306/265	406/353/306	459/400/341
	Motor			W	60	60	60	60	60
	External static pressure (*1)			In WG	0.08 (Factory default) - 0.14 -0.20	0.08 (Factory default) - 0.14 -0.20	0.08 (Factory default) - 0.14 -0.20	0.08 (Factory default) - 0.14 -0.20	0.08 (Factory default) - 0.14 -0.20
Air filter					Field supply				
Connecting pipe	Gas side			In	3/8"	3/8"	3/8"	1/2"	1/2"
	Liquid side			In	1/4"	1/4"	1/4"	1/4"	1/4"
	Drain port (Nominal dia.)			In	VP25(Polyvinyl chloride tube: External Dia.1-1/4 Internal Dia.1)				
Sound pressure level (*2) (High/Mid/Low)		Under air intake		dB(A)	39/36/33		41/38/35	41/38.5/35	44.5/41/37.5
		Back air intake		dB(A)	31/30/28		32.5/31.5/28.5	34.5/33.5/30	37/34/32
Option parts	Auxiliary fresh air flange				TCB-FF101URUL				

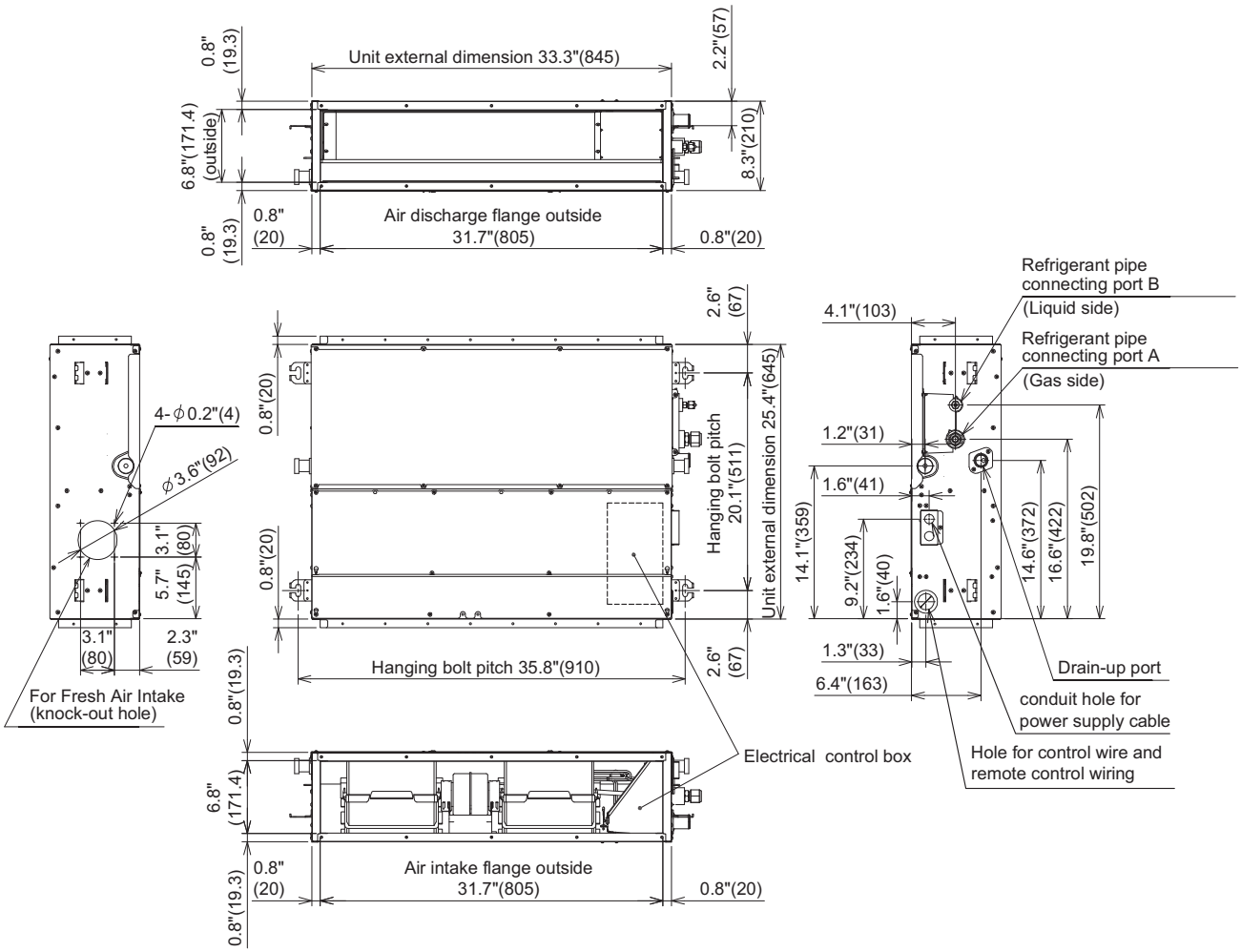
Note

(*1) Non attached filter

(*2) The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.

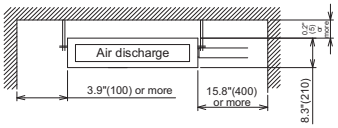
2. Dimensions

MMD-AP0074SPH2UL, AP0094SPH2UL, AP0124SPH2UL, AP0154SPH2UL, AP0184SPH2UL

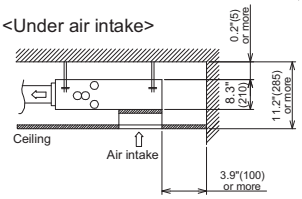


Installation space

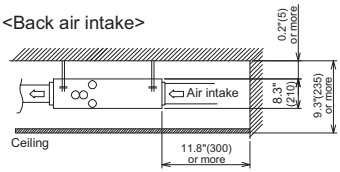
Note)
1. Indoor unit does not have air filter its inside.
So be sure to set an air filter(local arrangements) in the position maintained easily such as a air intake grille
(If there is no air filter, dusts are blocked in the air heat exchanger and it may cause failure or water leak in air-conditioner.)
2. Leave sufficient space to remove the air filter when you attach it.



<Under air intake>



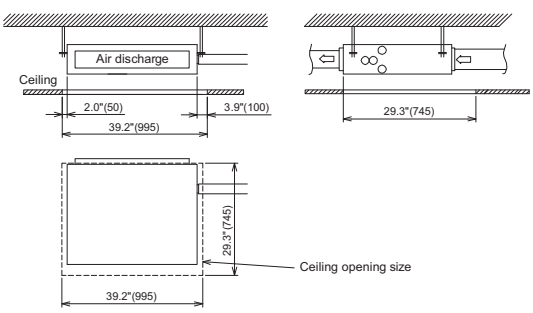
<Back air intake>

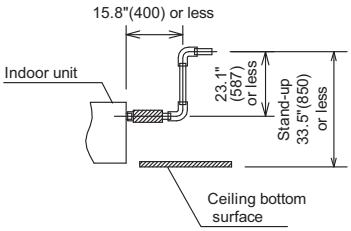


Unit : in (mm)

Model MMD-	A	B
AP0074SPH2UL AP0094SPH2UL AP0124SPH2UL	Ø3/8" (9.5)	Ø1/4" (6.4)
AP0154SPH2UL AP0184SPH2UL	Ø1/2" (12.7)	Ø1/4" (6.4)

Service space



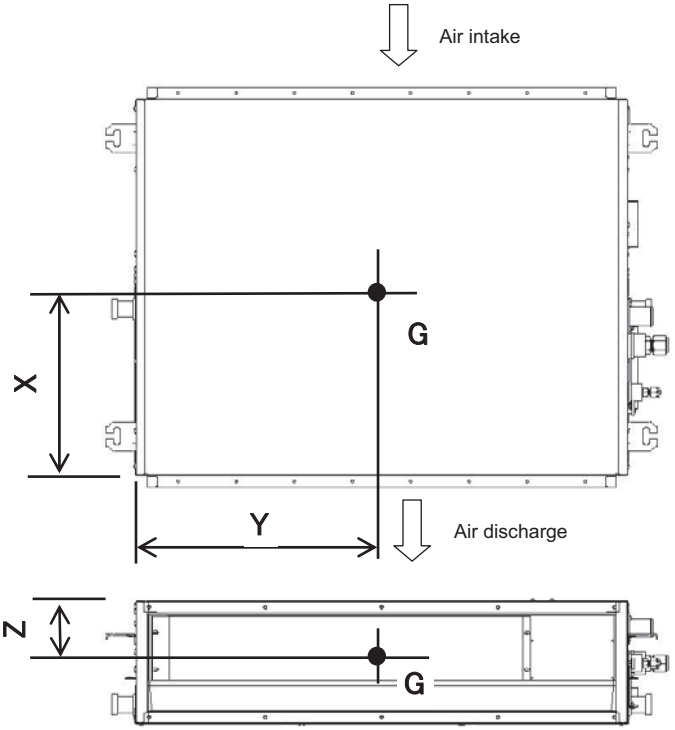


Drain-up standing-up size

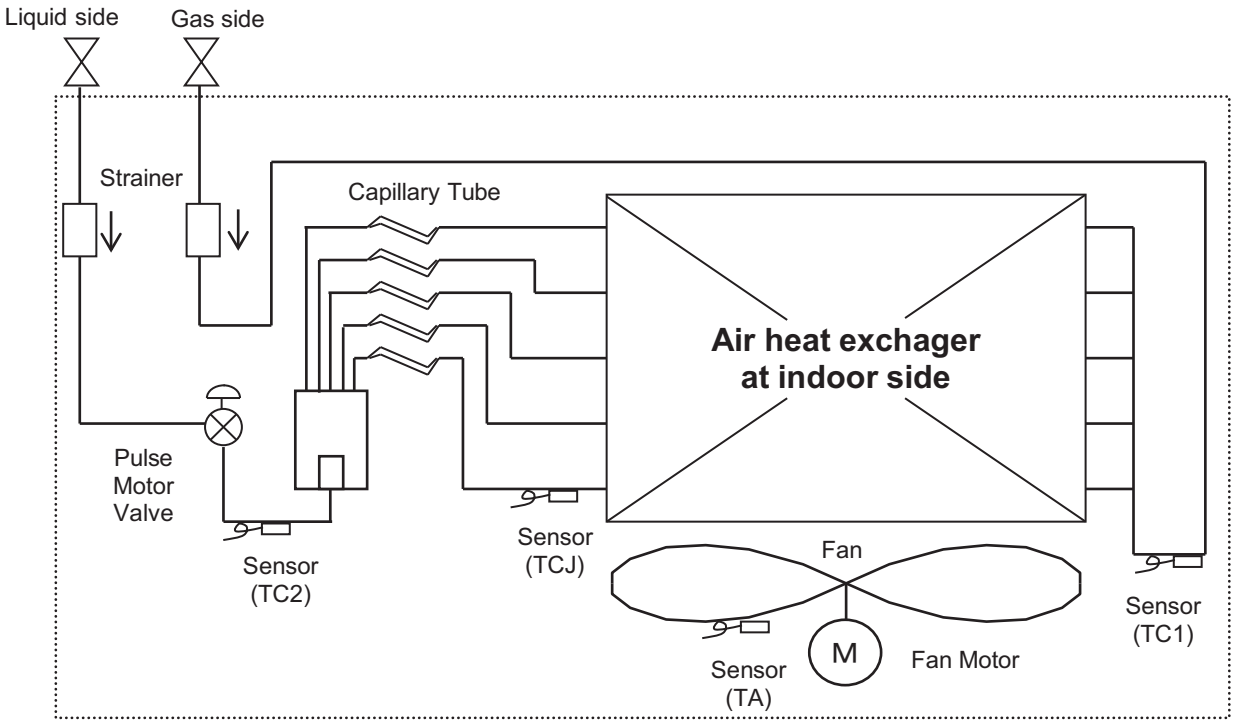
Note)
As ABS is used for the drain discharge port of the main unit,the vinyl chlor paste cannot be used. Use the flexible hose (Band fix) included in the package.

3. Center of gravity

Model name	X (In)	Y (In)	Z (In)	Total weight (lbs)
MMD-AP0074SPH2UL MMD-AP0094SPH2UL MMD-AP0124SPH2UL	12.4	18.5	4.3	49
MMD-AP0154SPH2UL MMD-AP0184SPH2UL	12.4	18.1	4.3	51

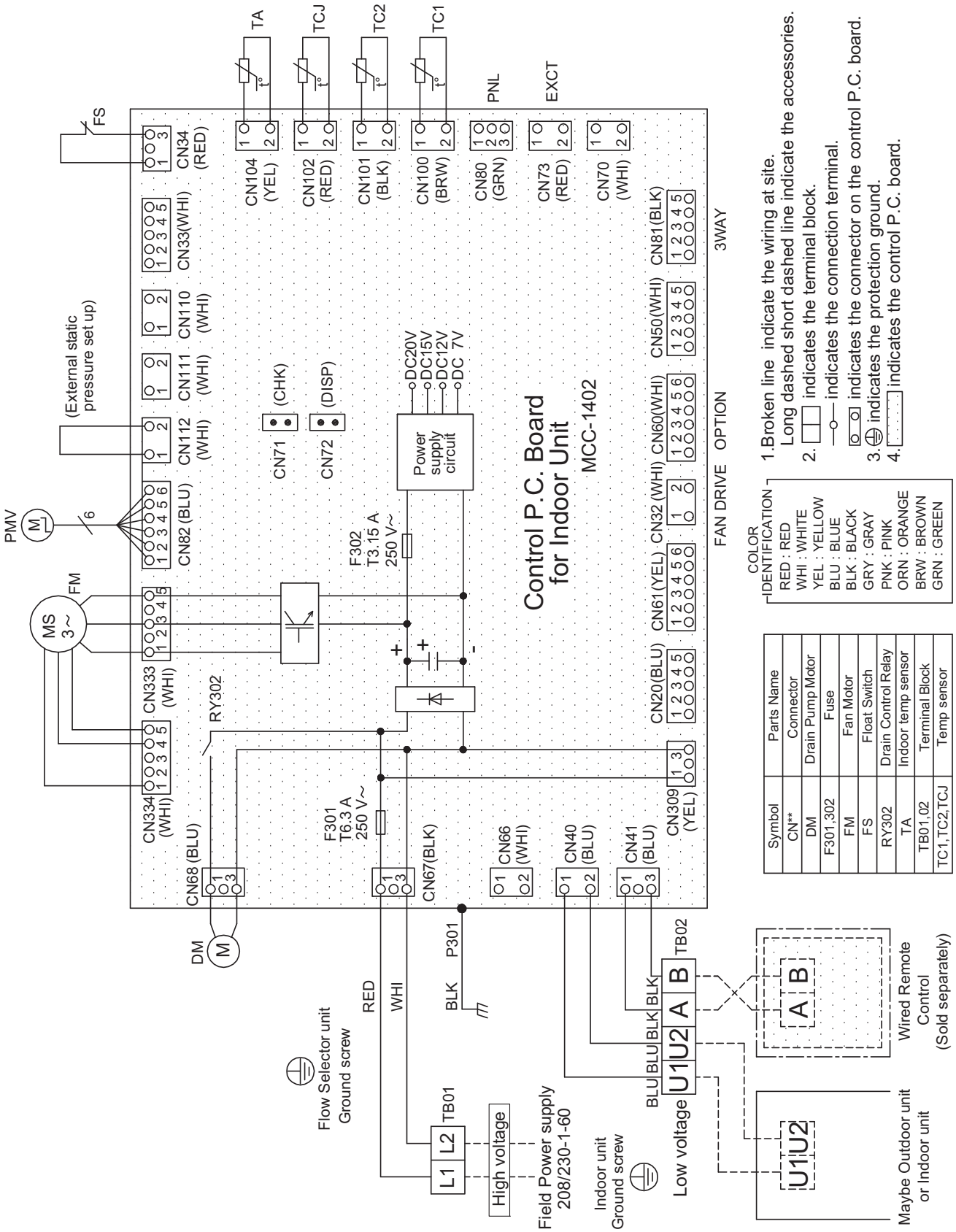


4. Piping diagram



5. Wiring diagram

MMD-AP0074SPH2UL, AP0094SPH2UL, AP0124SPH2UL, AP0154SPH2UL, AP0184SPH2UL



6. Electrical current characteristics

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range (V)		Power consumption	FLA	MCA	MOCP
			Min	Max	kW	A	A	A
Slim Ducted type	MMD-AP0074SPH2UL	208/230-1-60	187	253	0.043	0.58	0.73	15
	MMD-AP0094SPH2UL	208/230-1-60	187	253	0.043	0.58	0.73	15
	MMD-AP0124SPH2UL	208/230-1-60	187	253	0.048	0.60	0.75	15
	MMD-AP0154SPH2UL	208/230-1-60	187	253	0.061	0.70	0.88	15
	MMD-AP0184SPH2UL	208/230-1-60	187	253	0.071	0.80	1.00	15

MCA : Minimum Circuit Amps
MOCP : Maximum Overcurrent Protection (Amps)
FLA : Full Load Amps

7. Sensible capacity table

Slim Ducted type (MMD-AP***4SPH2UL)

TC: Total capacity [Btu/h] SHC: Sensible capacity [Btu/h]

unit size	outdoor air temp. °FDB	indoor air temp.													
		59 °FWB		61 °FWB		64 °FWB		67 °FWB		68 °FWB		72 °FWB		75 °FWB	
		71 °FDB		73 °FDB		77 °FDB		80 °FDB		82 °FDB		86 °FDB		90 °FDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
007	50	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	54	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	57	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	61	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	64	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	68	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	70	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	73	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	77	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	81	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	84	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	88	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	91	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	95	6380	5560	6680	5720	7100	5950	7500	6140	7630	6160	8110	6080	8450	5850
	99	6190	5400	6490	5550	6890	5780	7280	5960	7410	5980	7870	5900	8200	5680
	102	6050	5270	6330	5420	6730	5640	7110	5820	7230	5840	7690	5760	8010	5550
009	50	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	54	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	57	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	61	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	64	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	68	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	70	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	73	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	77	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	81	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	84	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	88	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	91	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	95	8090	6470	8460	6640	9000	6920	9500	7130	9660	7150	10270	7060	10700	6800
	99	7860	6280	8210	6450	8740	6720	9220	6920	9380	6940	9970	6860	10390	6600
	102	7670	6130	8020	6290	8530	6560	9010	6760	9160	6780	9740	6690	10140	6450
012	50	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	54	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	57	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	61	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	64	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	68	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	70	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	73	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
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	88	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	91	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	95	10210	7550	10690	7760	11360	8070	12000	8330	12210	8360	12980	8250	13510	7940
	99	9910	7330	10380	7530	11030	7840	11650	8090	11860	8120	12600	8010	13120	7710
	102	9680	7160	10130	7360	10770	7650	11380	7900	11580	7930	12310	7820	12810	7530

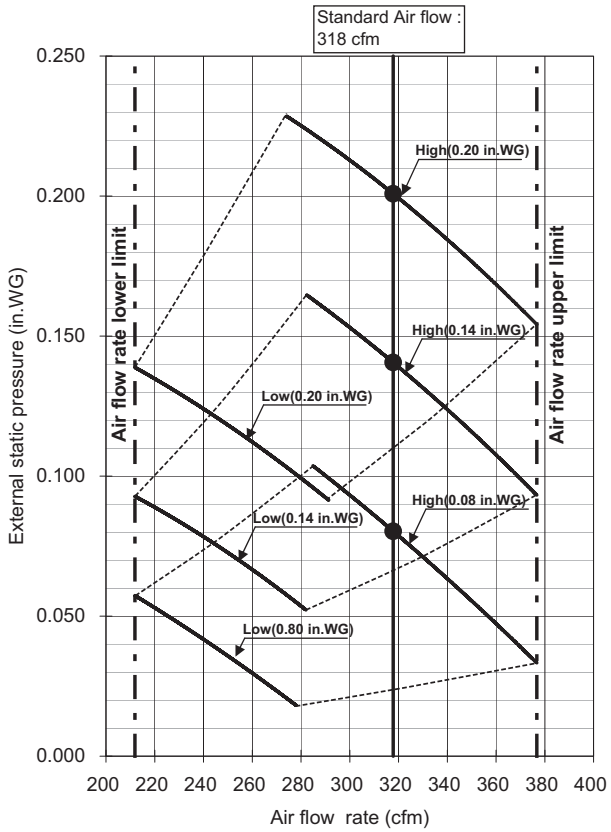
Slim Ducted type (MMD-AP***4SPH2UL)

TC: Total capacity [Btu/h] SHC: Sensible capacity [Btu/h]

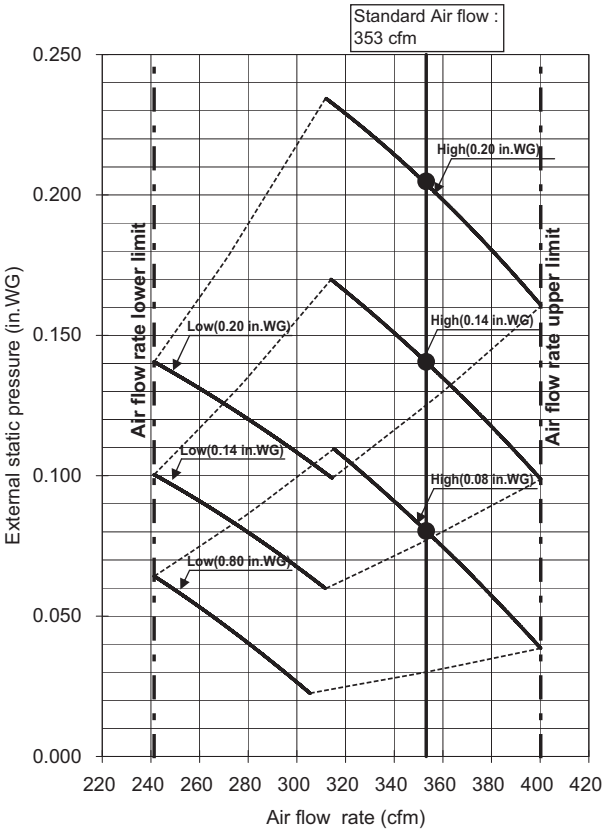
unit size	outdoor air temp. °FDB	indoor air temp.													
		59 °FWB		61 °FWB		64 °FWB		67 °FWB		68 °FWB		72 °FWB		75 °FWB	
		71 °FDB		73 °FDB		77 °FDB		80 °FDB		82 °FDB		86 °FDB		90 °FDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
015	50	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	54	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	57	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	61	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	64	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	68	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	70	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	73	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	77	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	81	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	84	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	88	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	91	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	95	13110	9930	13710	10200	14580	10610	15400	10950	15660	10980	16660	10840	17340	10430
	99	12730	9640	13310	9900	14160	10300	14950	10630	15210	10660	16180	10530	16840	10130
	102	12430	9410	13000	9670	13820	10060	14600	10380	14850	10410	15790	10280	16440	9890
018	50	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	54	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	57	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	61	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	64	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	68	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	70	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	73	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	77	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	81	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	84	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	88	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	91	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	95	15320	11370	16030	11680	17040	12150	18000	12540	18310	12580	19470	12420	20270	11950
	99	14880	11040	15570	11340	16550	11800	17480	12180	17780	12220	18910	12060	19680	11600
	102	14520	10780	15200	11070	16150	11520	17060	11890	17360	11930	18460	11770	19220	11330

8. Fan characteristics (No filter)

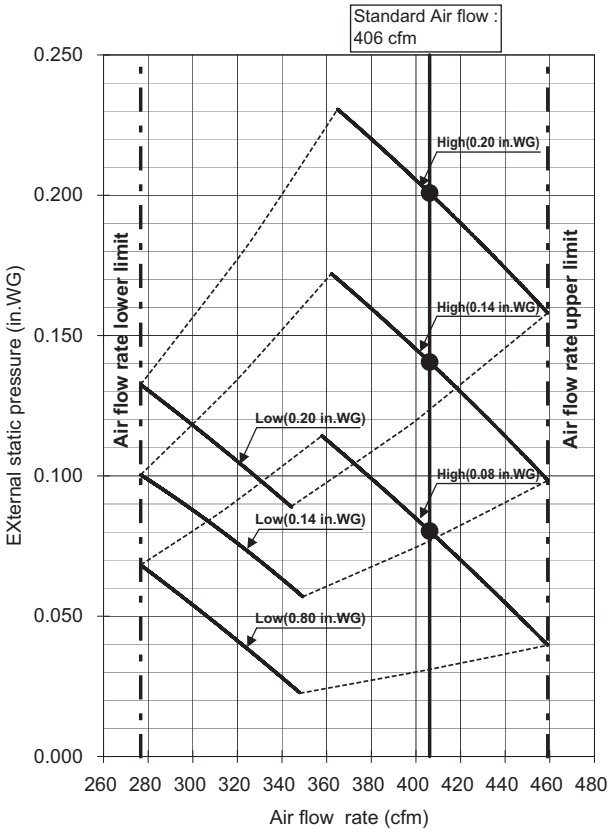
MMD-AP0074SPH2UL, AP0094SPH2UL



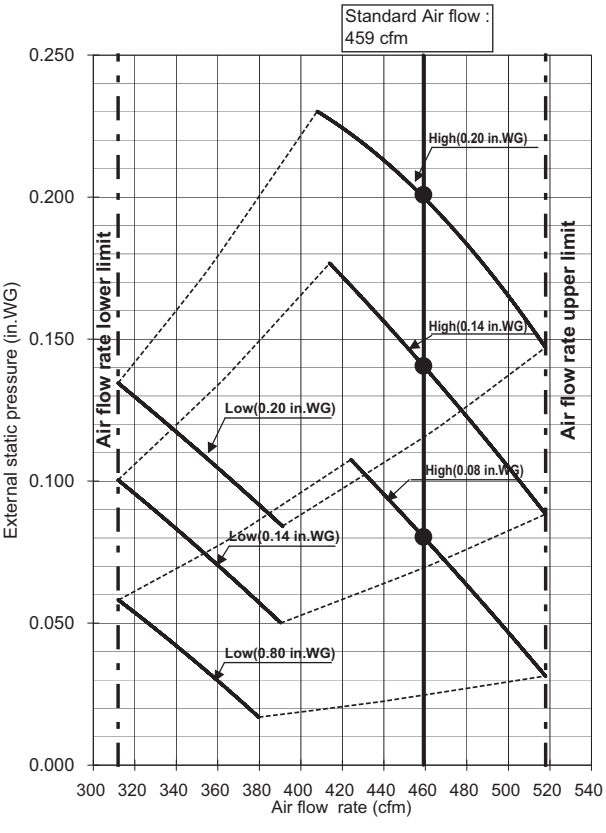
MMD-AP0124SPH2UL



MMD-AP0154SPH2UL



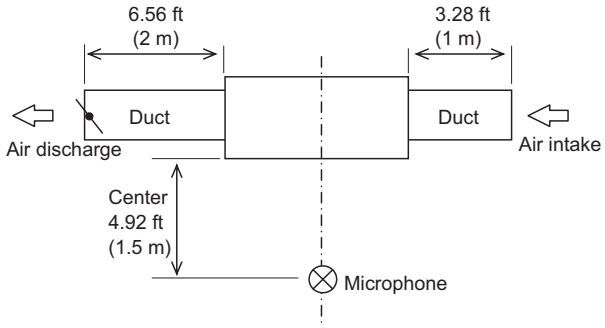
MMD-AP0184SPH2UL



9. Sound data

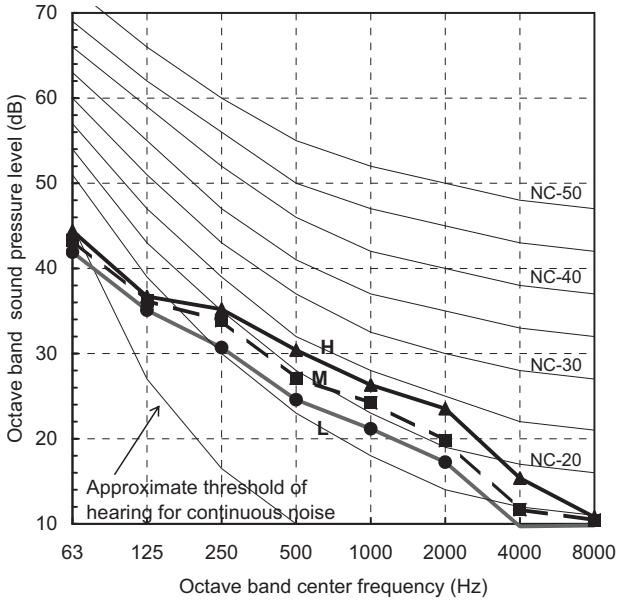
MMD-AP0074SPH2UL, MMD-AP0094SPH2UL

[Measuring location] Back air intake



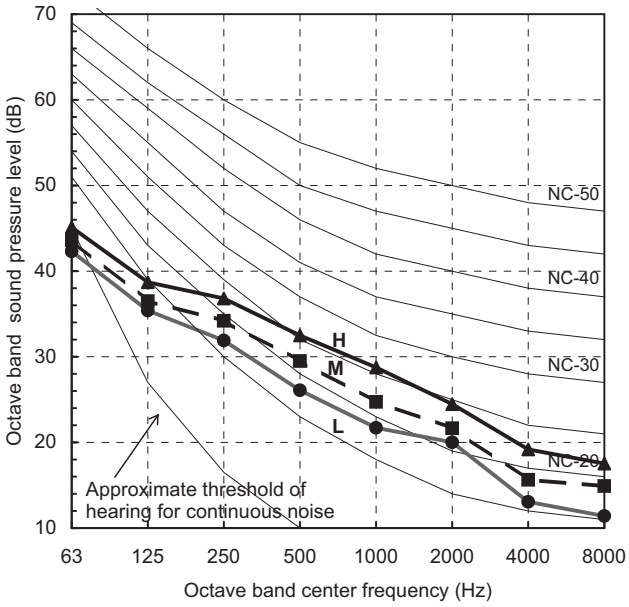
[External static pressure 20 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	31	30	28



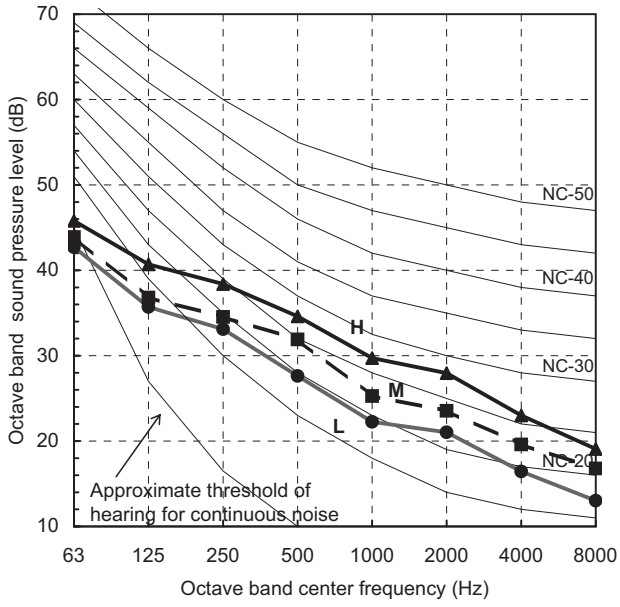
[External static pressure 35 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	32	31	29



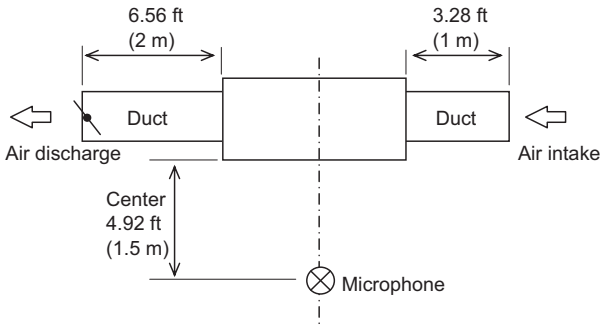
[External static pressure 50 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	33	32	30



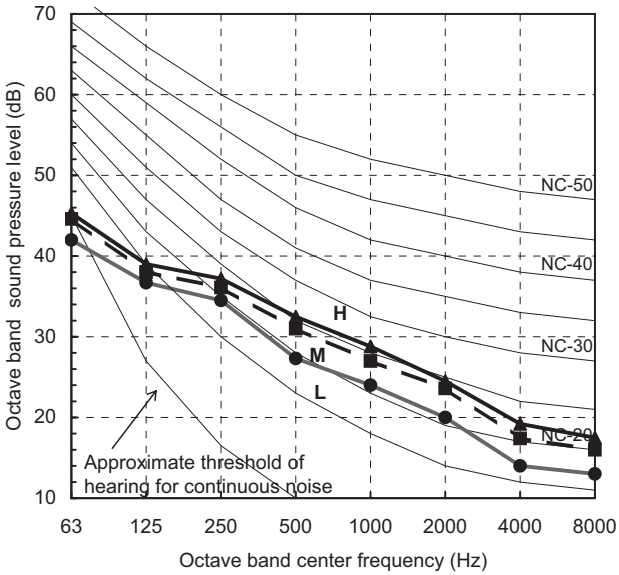
MMD-AP0124SPH2UL

[Measuring location] Back air intake



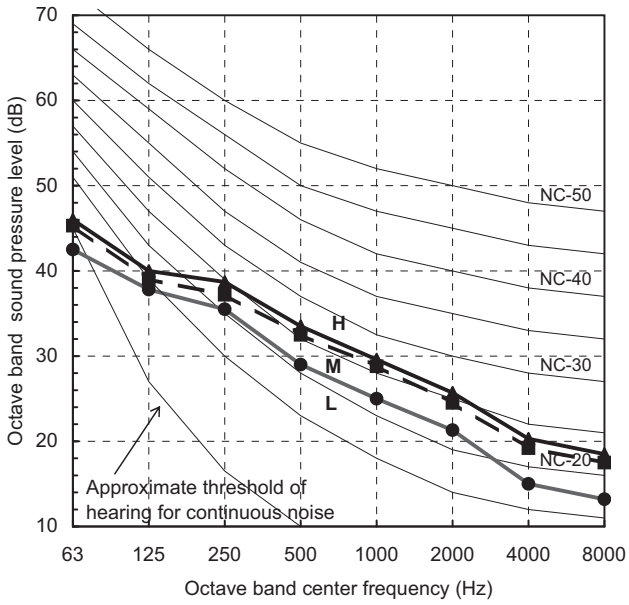
[External static pressure 20 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	32.5	31.5	28.5



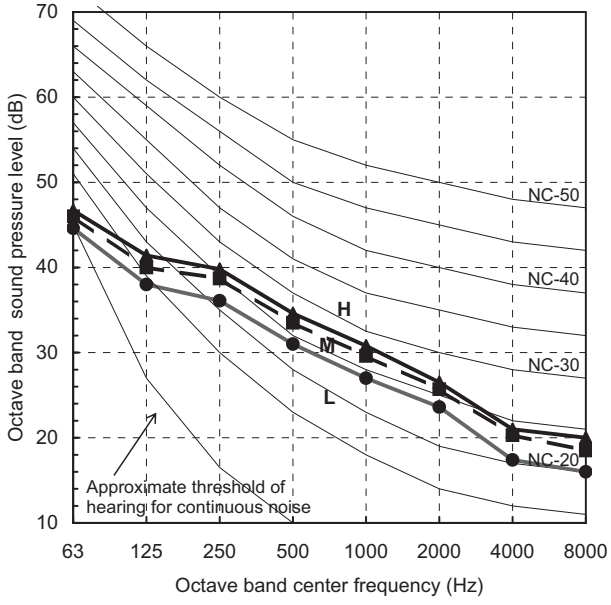
[External static pressure 35 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	33.5	32.5	28.5



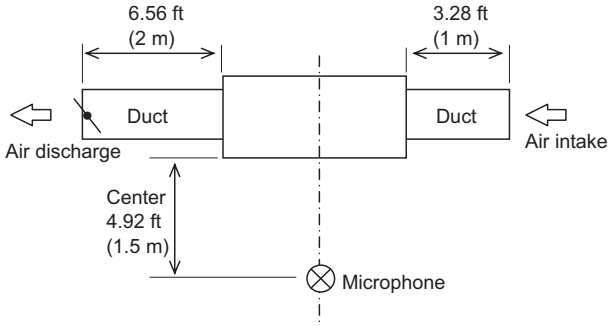
[External static pressure 50 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	32	30	28



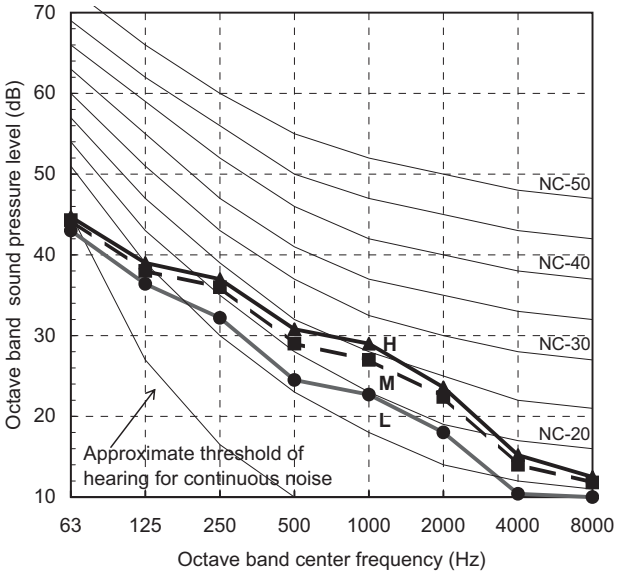
MMD-AP0154SPH2UL

[Measuring location] Back air intake



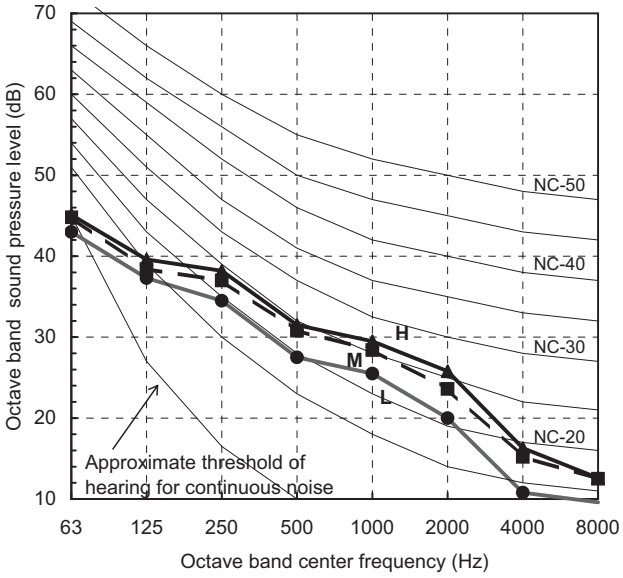
[External static pressure 20 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	34.5	33.5	30



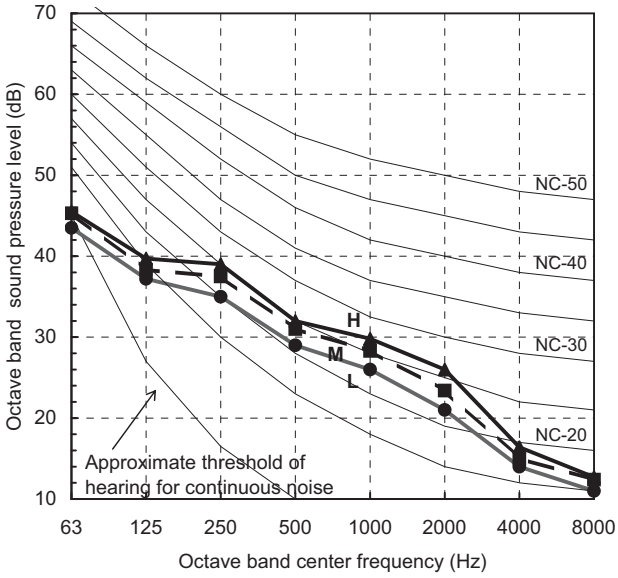
[External static pressure 35 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	35.5	34.5	31



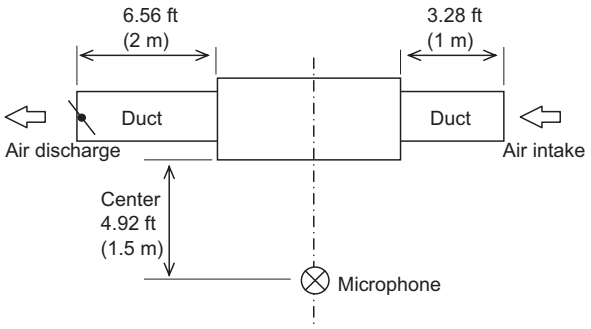
[External static pressure 50 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	36.5	35.5	32



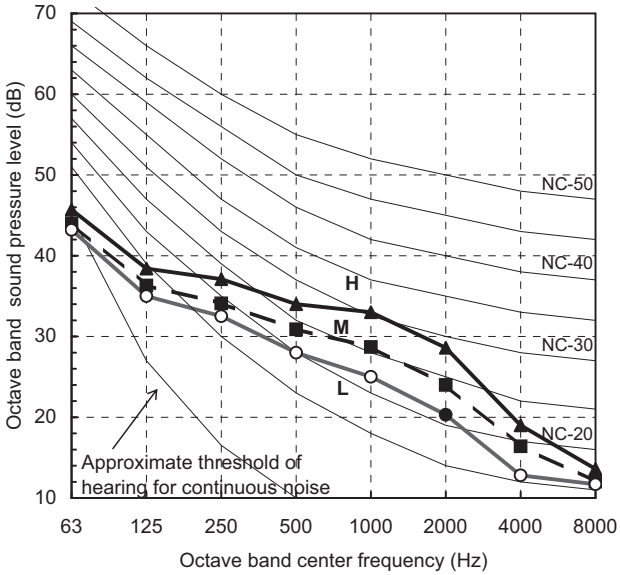
MMD-AP0184SPH2UL

[Measuring location] Back air intake



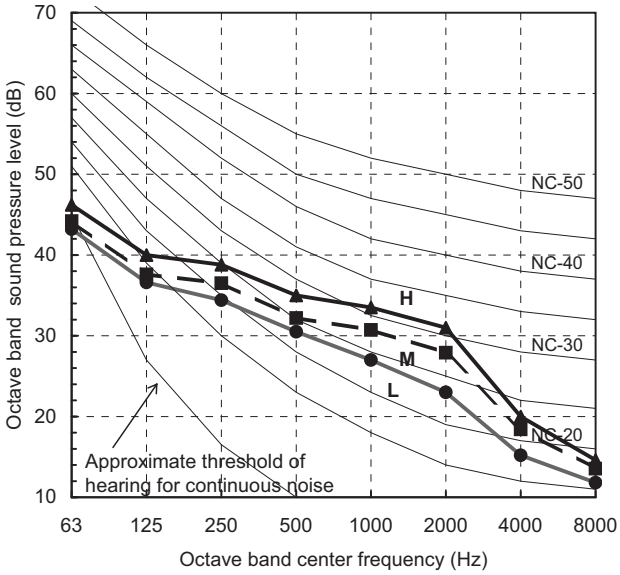
[External static pressure 20 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	37	34	32



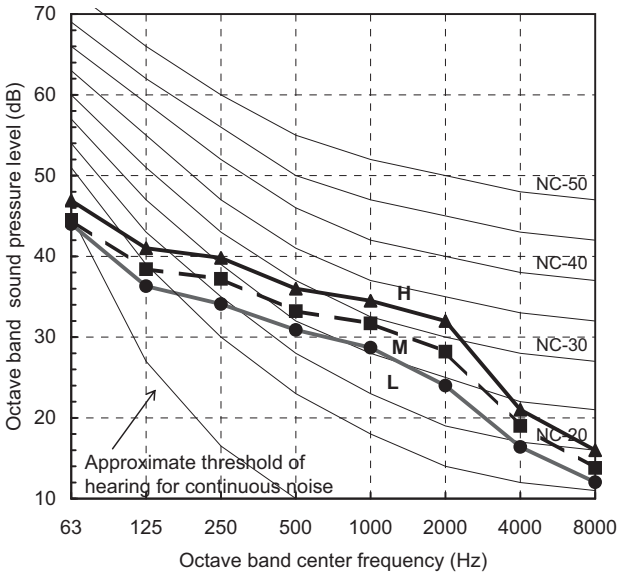
[External static pressure 35 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	38	35	33



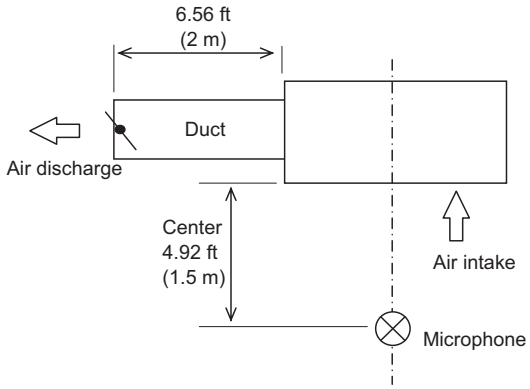
[External static pressure 50 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	39	36	34



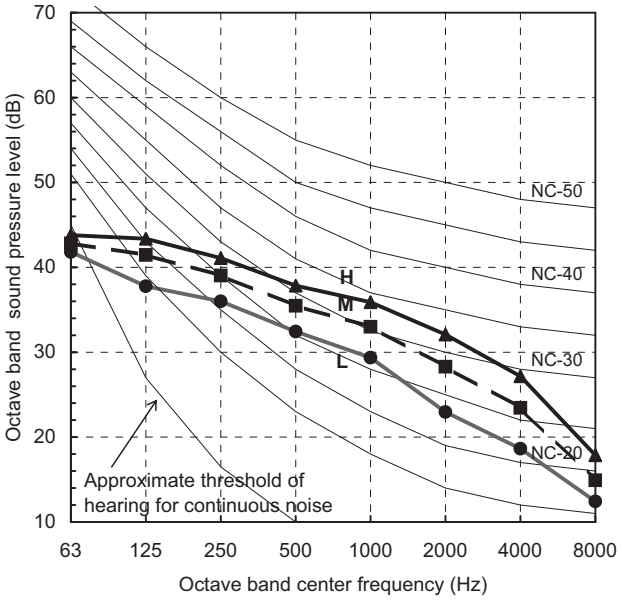
MMD-AP0074SPH2UL, MMD-AP0094SPH2UL

[Measuring location] Under air intake



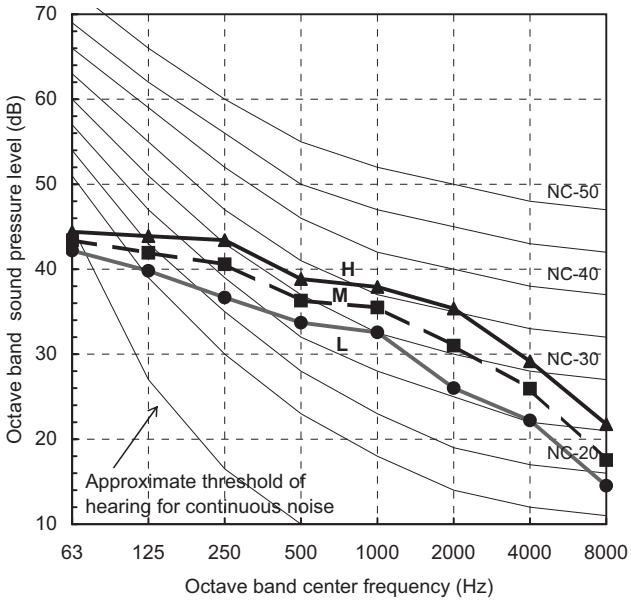
[External static pressure 20 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	39	36	33



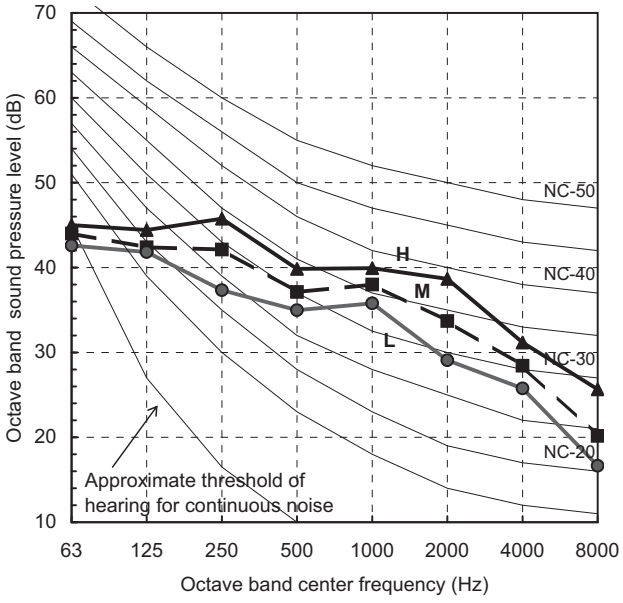
[External static pressure 35 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	41	38	35



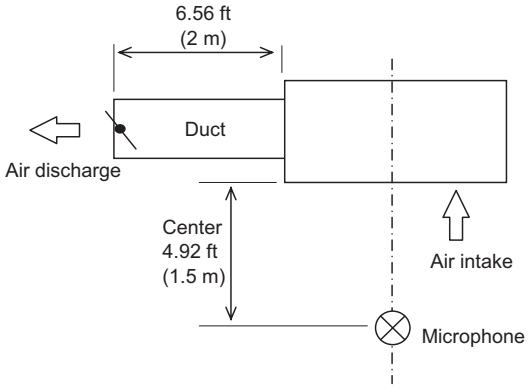
[External static pressure 50 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	43	41	37



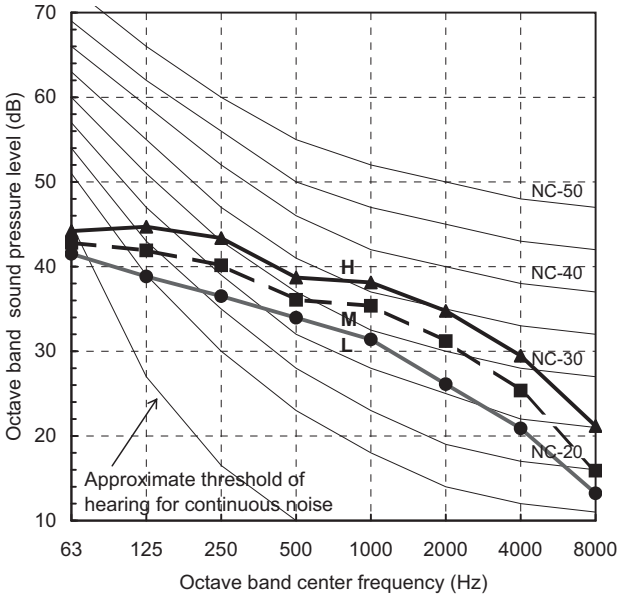
MMD-AP0124SPH2UL

[Measuring location] Under air intake



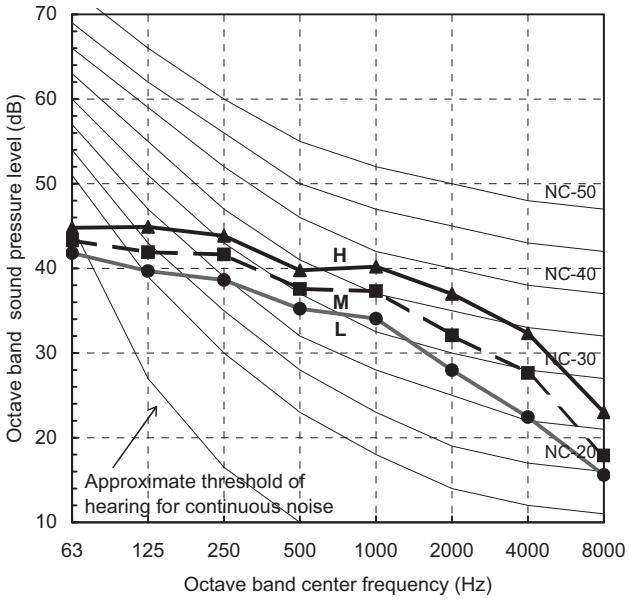
[External static pressure 20 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	41	38	35



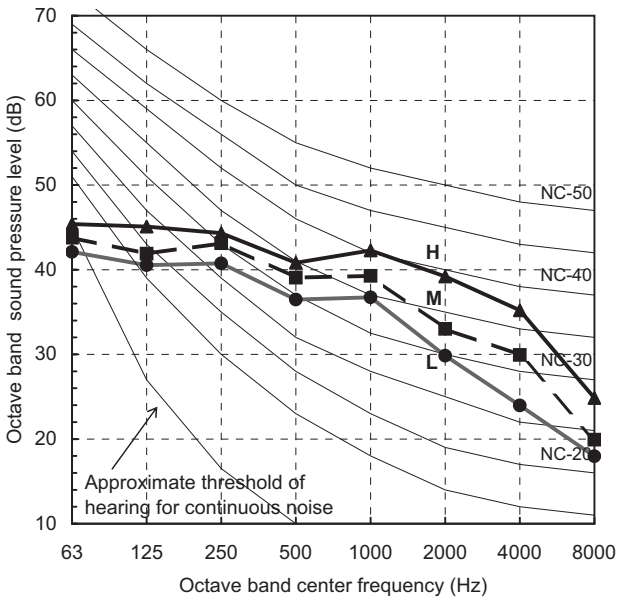
[External static pressure 35 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	43	40	37



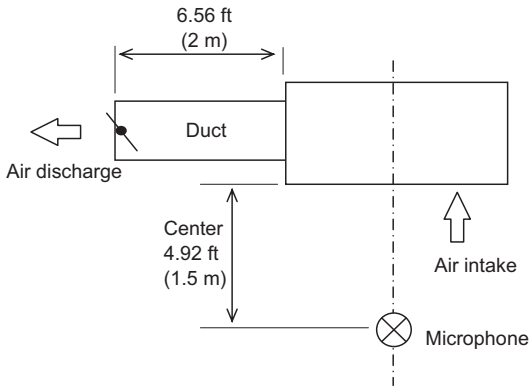
[External static pressure 50 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	45	42	39



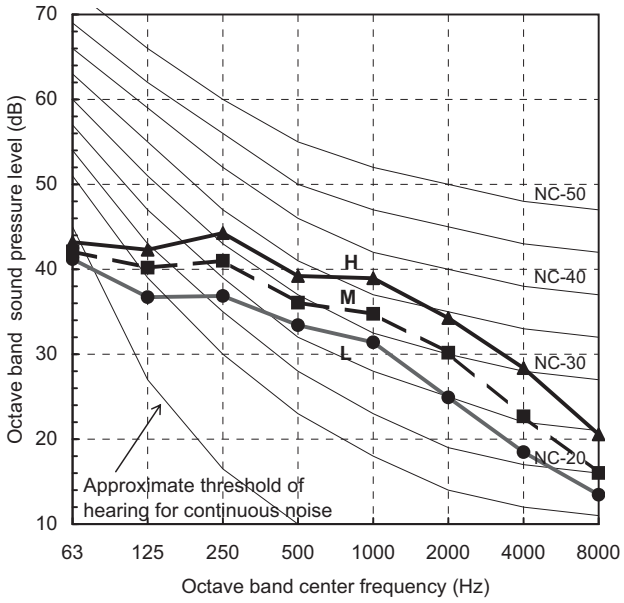
MMD-AP0154SPH2UL

[Measuring location] Under air intake



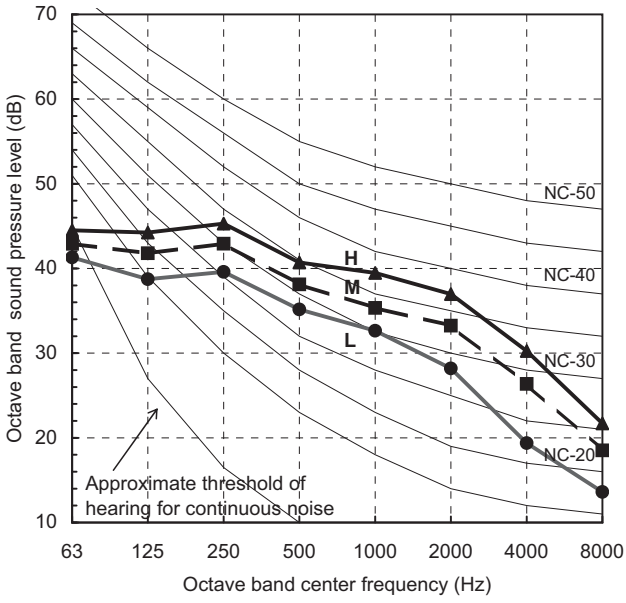
[External static pressure 20 Pa]

Fan tap			
Sound pressure level (dB(A))	41	38.5	35



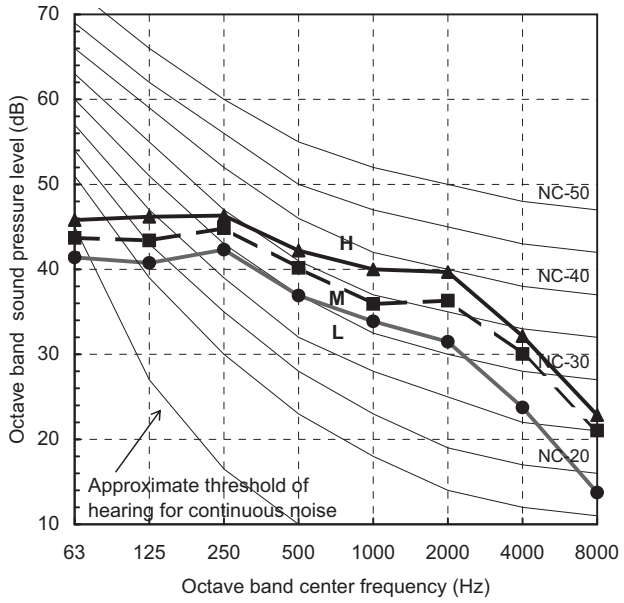
[External static pressure 35 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	43	40.5	37



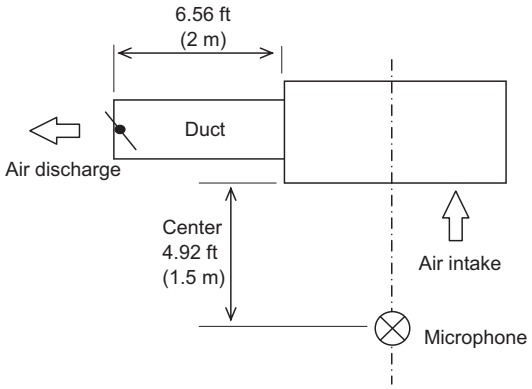
[External static pressure 50 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	45	42.5	39



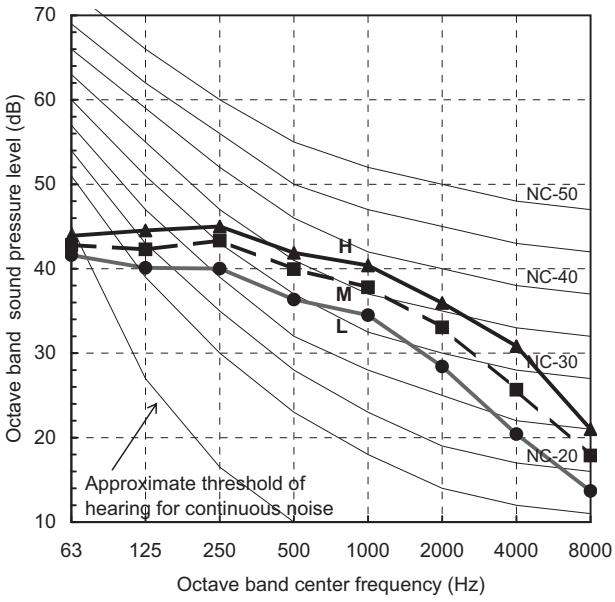
MMD-AP0184SPH2UL

[Measuring location] Under air intake



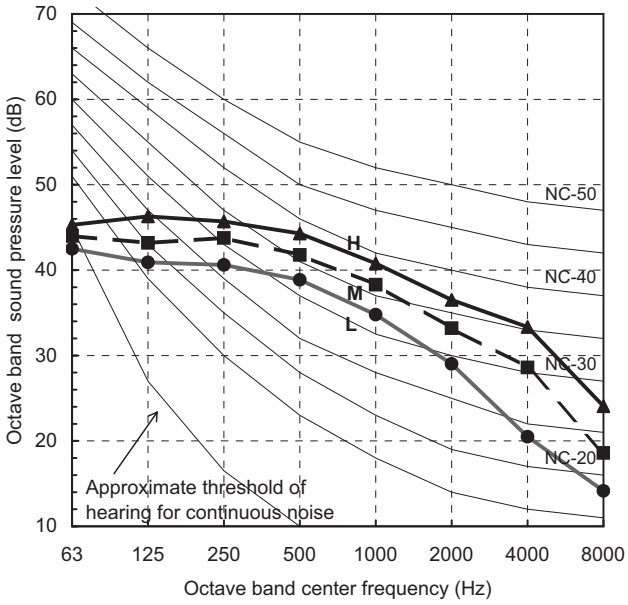
[External static pressure 20 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	44.5	41	37.5



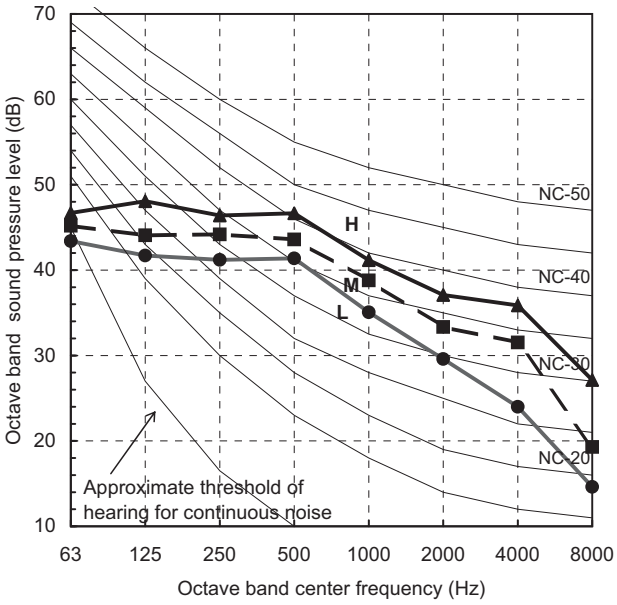
[External static pressure 35 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	45.5	43	39



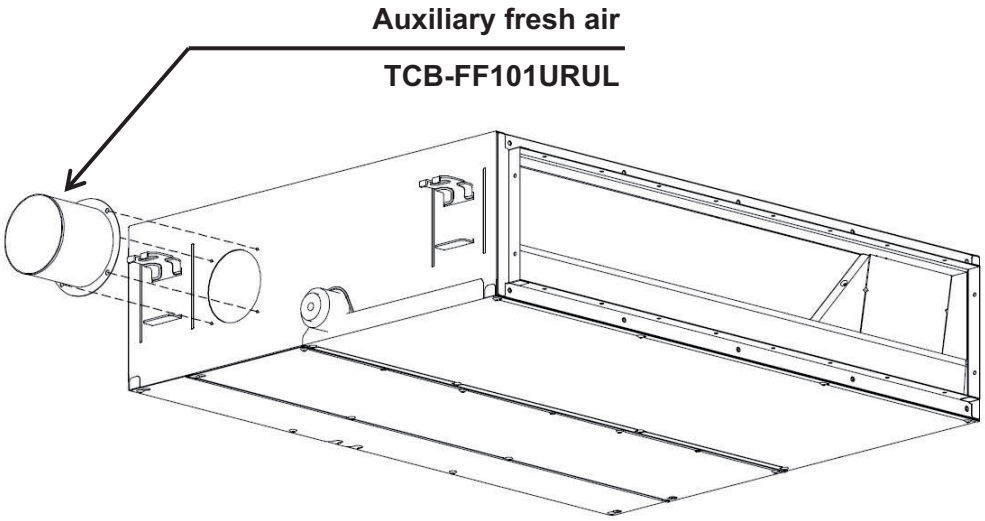
[External static pressure 50 Pa]

Fan tap	H	M	L
Sound pressure level (dB(A))	47	45	41



10. Accessories

Optional part for Slim Ducted type



Parts Name	Model Name	Applied Model	Note
Auxiliary fresh air flange	TCB-FF101URUL	MMD-0074 to 0184SPH2UL	For Fresh Air Intake by using the knockout hole (dia.=3.94")

11. Reference

11-1 Fresh Air Intake

MMD-AP0074SPH2UL, AP0094SPH2UL, AP0124SPH2UL

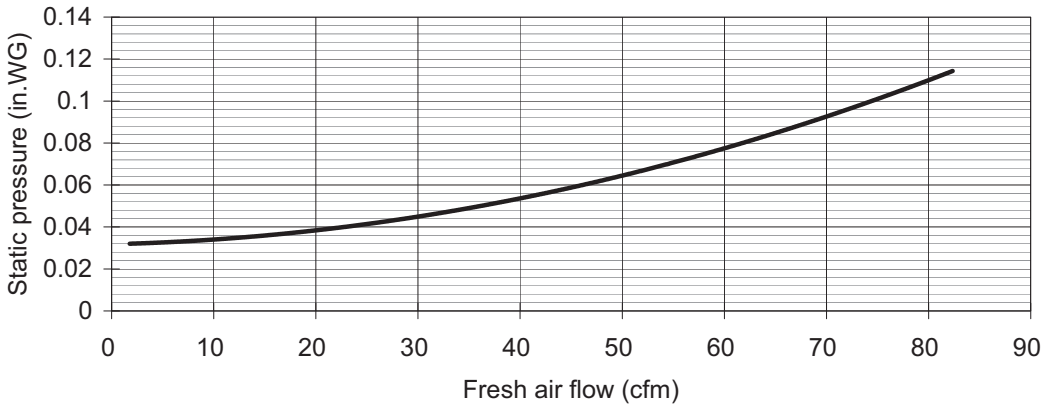
Caution

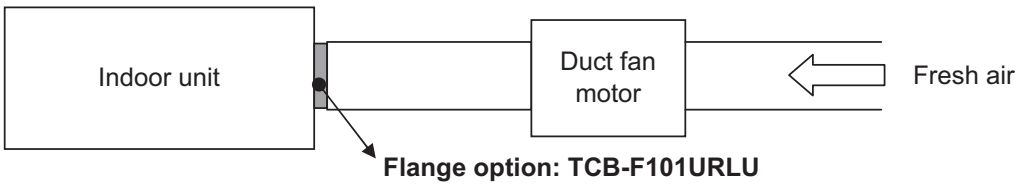
The fresh air shall be conditioned by heat reclaim ventilator or similar.
Ensure the fresh air flow rate is determined so that mixed suction air and fresh air maintain the operating temperature .

*1 Recommended conditioned air temperature is 53.6 °F to 86 °F.
However, make a fresh air flow rate within 20 % of standard.

Model name	Standard air flow (cfm)
MMD-AP0074SPH2UL	318
MMD-AP0094SPH2UL	318
MMD-AP0124SPH2UL	353

Install a air filter within the fresh air duct. (Fresh air does not pass through the filter of Indoor unit.)
Insulate the fresh air duct.
Electrically connect the fan of the Heat exchanger unit and the Indoor unit to a single isolator.





Inter - lock circuit

Connect the driving relay of the duct fan (DC 12V) between 1 and 6 on the indoor P.C. board.
(Rated current of the relay for duct fan should be up to 75 mA.)
After installation, carry out a test run to check that the duct fan of the indoor unit start/stop simultaneously.
(Carry out the test run following the installation manual of the indoor unit.)

MMD-AP0154SPH2UL, AP0184SPH2UL

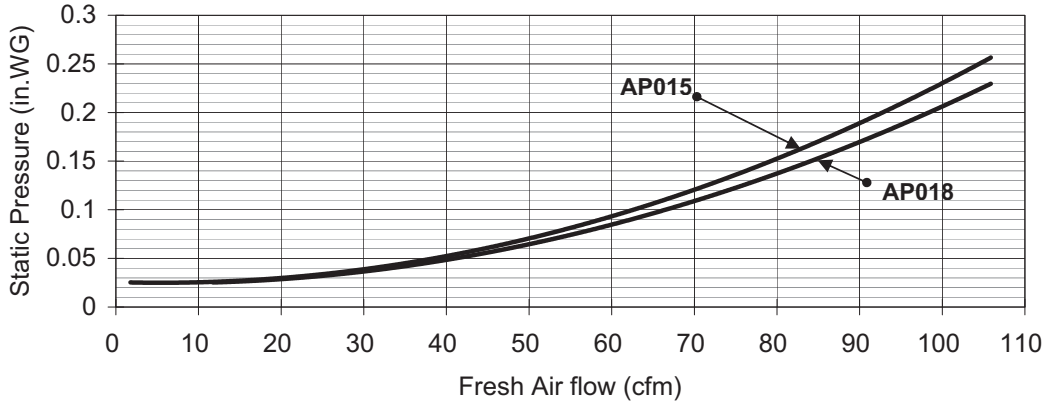
Caution

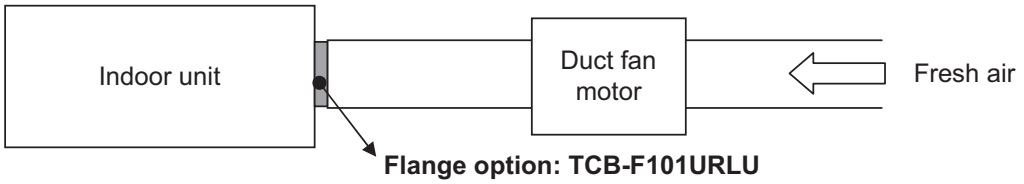
The fresh air shall be conditioned by heat reclaim ventilator or similar.
Ensure the fresh air flow rate is determined so that mixed suction air and fresh air maintain the operating temperature .

*1 Recommended conditioned air temperature is 53.6 °F to 86 °F.
However, make a fresh air flow rate within 20 % of standard.

Model name	Standard air flow (cfm)
MMD-AP0154SPH2UL	406
MMD-AP0184SPH2UL	459

Install a air filter within the fresh air duct. (Fresh air does not pass through the filter of Indoor unit.)
Insulate the fresh air duct.
Electrically connect the fan of the Heat exchanger unit and the Indoor unit to a single isolator.





Inter - lock circuit

Connect the driving relay of the duct fan (DC 12V) between 1 and 6 on the indoor P.C. board.
(Rated current of the relay for duct fan should be up to 75 mA.)
After installation, carry out a test run to check that the duct fan of the indoor unit start/stop simultaneously.
(Carry out the test run following the installation manual of the indoor unit.)

MEMO

Engineering Data Book

< For North America >

May, 2013 First Edition

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