



Service manual

MIV V4+ Indoor units

High Static Pressure Duct Type

MVH71A-VA1

MVH160A-VA1

MVH80A-VA1

MVH200A-VA1

MVH90A-VA1

MVH250A-VA1

MVH112A-VA1

MVH280A-VA1

MVH140A-VA1



High Static Pressure Duct Type

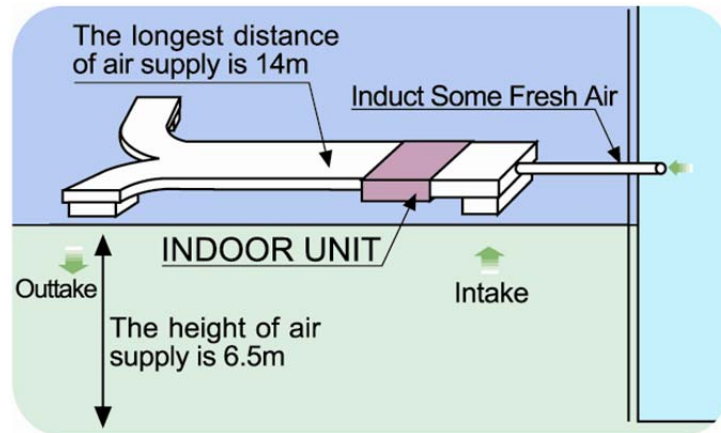
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1. Feature

1.1 High static pressure allows flexible duct design

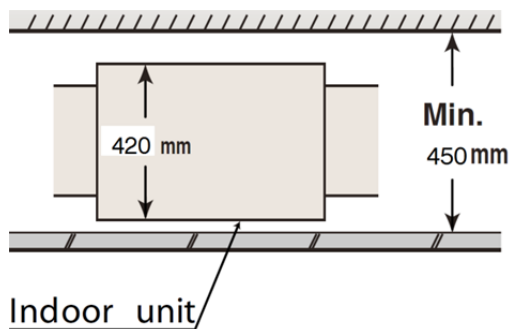


1.1.1 External static pressure of Indoor Unit can be up to 196 Pa (71~160 model) (220Pa for 20kW and up), which allows extensive duct work for flexible applications. So the cool air can be delivered to every indoor corner even in a super-high ceiling.



1.1.2 The max. distance of air supply is about 14m, the height of air supply is about 6.5m.

1.1.3 With 420mm (71~160 model) thickness body, not occupied much ceiling space which is 450mm only.



1.2 Wide capacity range

— The capacity ranges from 7.1KW to 28.0KW, totally nine models.

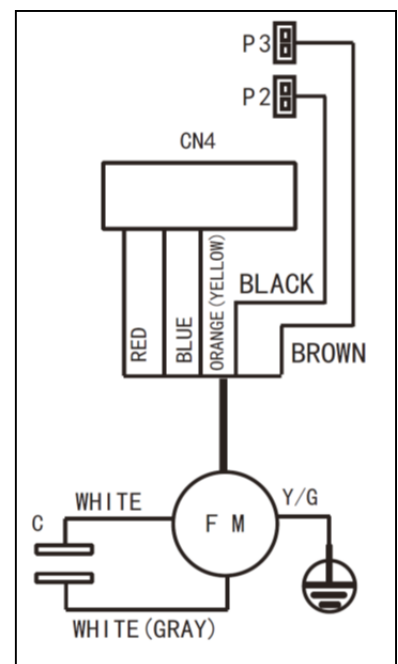
1.3 Two external static pressure settings for added flexibility

just exchange the wiring connection of 'MH' and 'Me'. P2 and P3 as the right side diagram. *(for 71~160 model)

1.4 Convenient installation

1.4.1 The EXV is fixed inside the indoor unit (for 71~160 model), no need extra connection.

1.4.2 Standard filter with aluminum frame, which is removable

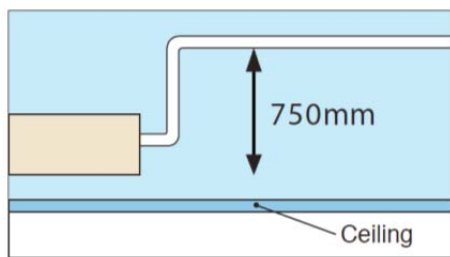


downward from bottom.

1.4.3. Suction chamber is included as standard equipment

1.4.4 Flange for air in/outlet duct connection is standard.

Drain pump is equipped as optional accessory with 750 mm pumphead.



1.4.5 Easy to access the motor and do the maintenance. Possible to replace the motor without removing the whole unit.

1.5 Flexible control and convenient for maintenance

1.5.1 Standard wireless remote controller RM05/BG(T)E-A.

1.5.2 The display board is connected with the E-box in factory, which makes trouble-shooting easier by LED display.

1.5.3 Standard functional port such as Remote On/Off Dry contact.

2. Specifications

Model			MVH71A-VA	MVH80A-VA1	MVH90A-VA1
Power supply		V- Ph-Hz	220-240V~, 1Ph, 50Hz		
Cooling	Capacity	kW	7.1	8	9
	Input	W	263	263	423
	Rated current	A	1.1	1.1	1.8
Heating	Capacity	kW	8	9	10
	Input	W	263	263	423
	Rated current	A	1.1	1.1	1.8
Max. input consumption		W	269	269	437
Max. current		A	1.23	1.23	1.8
Indoor fan motor	Model		YDK100-4X-2	YDK100-4X-2	YDK160-4C
	Type		AC Motor		
	Brand		YongAn	YongAn	WELLING
	Input	W	247	247	391
	Capacitor	μF	12	12	10
	Speed (hi/mid/lo)	r/min	975/923//847	975/923//847	1282/1213/1035
Indoor coil	Number of rows		2	2	3
	Tube pitch(a)* row pitch(b)	mm	25.4×22	25.4×22	25.4×22
	Fin spacing	mm	1.5	1.5	1.6
	Fin type		Hydrophilic aluminum		
	Tube outside diameter and type	mm	Φ9.52 / inner groove tube		
	length * height * width	mm	700*356×44	700*356×44	700*356×66
	Number of circuits		3	3	3
Indoor air flow (H/M/L)		m ³ /h	1510/1399/1236	1500/1396/1221	1936/1721/1511
Indoor external static pressure (Hi)		Pa	40(30~ 196)	40(30~ 196)	40(30~ 196)
Indoor noise level (Hi/Mid/Lo)		dB(A)	48/46/44	48/46/44.5	52/49/47
Indoor unit	Dimension (W×H×D)	mm	952*420*690	952*420*690	952*420*690
	Packing (W×H×D)	mm	1102*450*768	1102*450*768	1102*450*768
	Net/Gross weight	kg	45/50	45/50	46.5/52.4
Refrigerant type			R410A		
Throttle	Type		EXV		
	Model		BD20FKS, (Winding: DZF20XQ-1000-XHP-6)		
Design pressure (Hi/Lo)		MPa	4.4/2.6		
Refrigerant piping	Liquid / Gas	mm	Φ9.52/ Φ15.9	Φ9.52/ Φ15.9	Φ9.52/ Φ15.9
Connecting wiring	Power wiring	mm ²	3*2.5(L≤20m); 3*3.5(L≤50m)		
	Signal wiring	mm ²	3*0.75		
Drainage water pipe diameter			Φ32 (ID Φ25, OU Φ32)		
Controller			Wireless remote controller (RM05/BG(T)E-A) - Standard KJR-12B/DP(T)-E/ KJR-10B/DP(T)-E (6 m connection wire) - optional		
Operation temp		°C	Cooling: 17~32; Heating:10~28		

- Notes:**
- Nominal cooling capacities are based on the following conditions: return air temp. : 27°CDB, 19°CWB, outdoor temp.:35°CDB,equivalent ref. Piping: 8m(horizontal)
 - Nominal heating capacities are based on the following conditions: return air temp.: 20°CDB, outdoor temp.: 7°CDB,6°CWB,equivalent ref. Piping: 8m(horizontal)

Model			MVH112A-VA1	MVH140A-VA1	MVH160A-VA1
Power supply		V- Ph-Hz	220-240V~, 1Ph, 50Hz		
Cooling	Capacity	kW	11.2	14	16
	Input	W	524	627	832
	Rated current	A	2.3	2.7	3.6
Heating	Capacity	kW	12.5	16	18
	Input	W	524	627	832
	Rated current	A	2.3	2.7	3.6
Max. input consumption		W	528	660	891
Max. current		A	2.3	2.85	4.77
Indoor fan motor	Model		YSK200-4F-1	YSK300-4C-1	YSK400-4C-2
	Type		AC MOTOR		
	Brand		WELLING	YongAn	YongAn
	Input	W	490	588	798
	Capacitor	μF	15	12	15
	Speed (hi/mid/lo)	r/min	1000/930/774	956/853/697	1087/953/836
Indoor coil	Number of rows		3	4	4
	Tube pitch(a)* row pitch(b)	mm	25.4×22	25.4×22	25.4×22
	Fin spacing	mm	1.6	1.6	1.6
	Fin type		Hydrophilic aluminum		
	Tube outside diameter and type	mm	Φ9.52 / inner groove tube		
	length * height * width	mm	700*356×66	996*355.6×88	996*355.6×88
	Number of circuits		7	7	7
Indoor air flow (H/M/L)		m ³ /h	2117/1950/1644	2988/2670/2229	3890/3200/2700
Indoor external static pressure (Hi)		Pa	50(30~ 196)	50(30~ 196)	50(30~ 196)
Indoor noise level (Hi/Mid/Lo)		dB(A)	52/49/47	53/50/48	54/52/50
Indoor unit	Dimension (W×H×D)	mm	952*420*690	1200*400*600	1200*400*600
	Packing (W×H×D)	mm	1102*450*768	1430*450*768	1430*450*768
	Net/Gross weight	kg	50.6/56	68/70	70/77.5
Refrigerant type			R410A		
Throttle	Type		EXV		
	Model		BD20FKS, (Winding: DZF20XQ-1000-XHP-6)		
Design pressure		MPa	4.4/2.6		
Refrigerant piping	Liquid / Gas	mm	Φ9.52/ Φ15.9	Φ9.52/ Φ15.9	Φ9.52/ Φ15.9
Connecting wiring	Power wiring	mm ²	3*2.5(L≤20m); 3*3.5(L≤50m)		
	Signal wiring	mm ²	3*0.75		
Drainage water pipe diameter			Φ32 (ID Φ25, OU Φ32)		
Controller			Wireless remote controller (RM05/BG(T)E-A) - Standard KJR-12B/DP(T)-E/ KJR-10B/DP(T)-E (6 m connection wire) - optional		
Operation temp		°C	Cooling: 17~32; Heating:10~28		

- Notes:** 1. Nominal cooling capacities are based on the following conditions: return air temp. : 27°CDB, 19°CWB, outdoor temp.:35°CDB,equivalent ref. Piping: 8m(horizontal)
2. Nominal heating capacities are based on the following conditions: return air temp.: 20°CDB,outdoor temp.: 7°CDB,6°CWB,equivalent ref. Piping: 8m(horizontal)

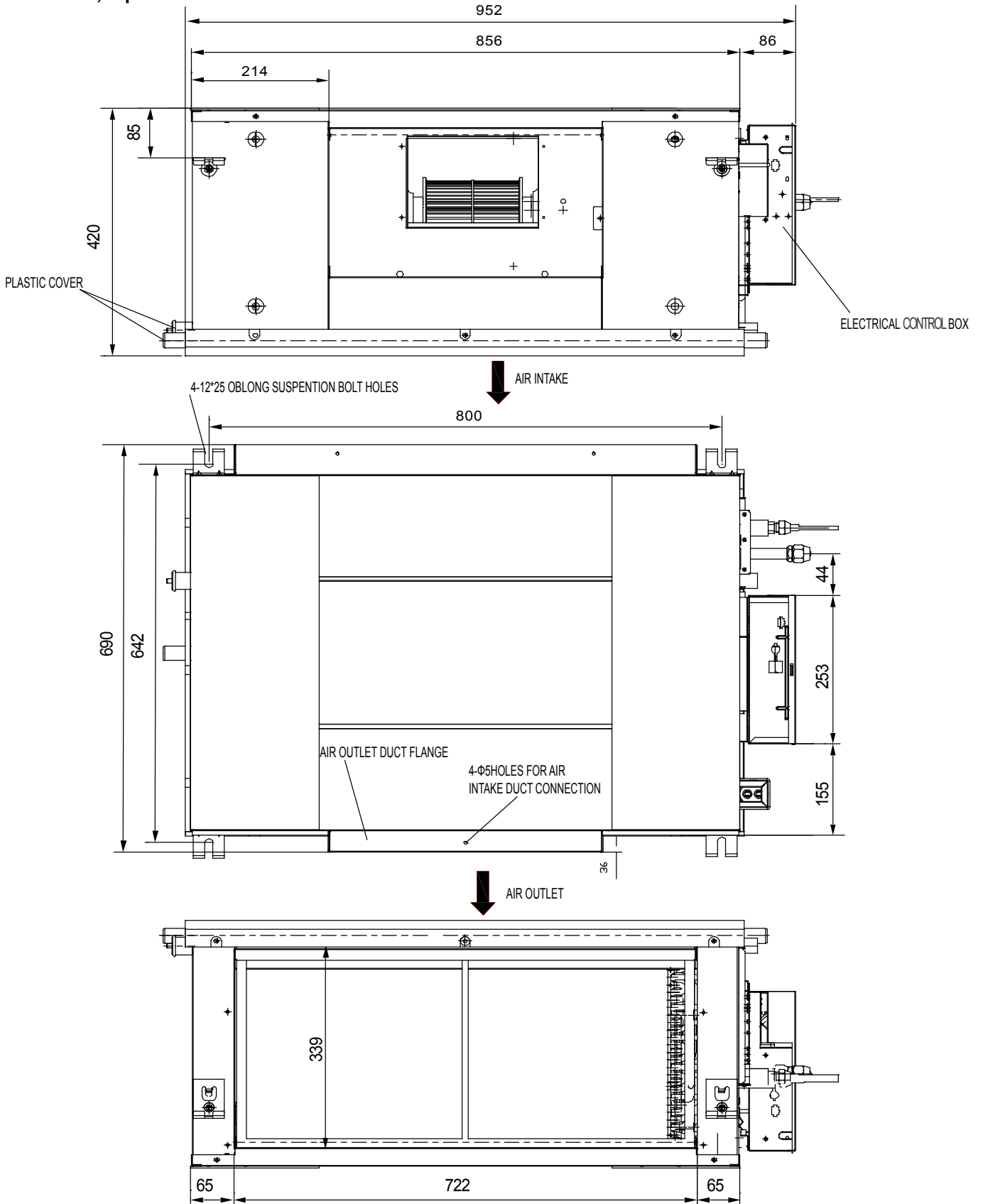
Model			MVH200A-VA1	MVH250A-VA1	MVH280A-VA1
Power supply		V- Ph-Hz	220-240V~, 1Ph, 50Hz		
Cooling	Capacity	kW	20.0	25.0	28.0
	Input	W	1516	1516	1516
	Rated current	A	6.6	6.6	6.6
Heating	Capacity	kW	22.5	26.0	31.5
	Input	W	1516	1516	1516
	Rated current	A	6.6	6.6	6.6
Max. input consumption		W	1978	1978	1978
Max. current		A	8.6	8.6	8.6
Indoor fan motor	Model		YDK550-4X (×2)	YDK550-4X (×2)	YDK550-4X (×2)
	Type		AC Motor		
	Brand		YongAn		
	Input	W	900/820/630(×2)	900/820/630(×2)	900/820/630(×2)
	Capacitor	μF	12(×2)	12(×2)	15(×2)
	Speed (hi/mid/lo)	r/min	1300/1100/900(×2)	1300/1100/900(×2)	1300/1100/900(×2)
Indoor coil	Number of rows		4	4	4
	Tube pitch(a)* row pitch(b)	mm	25.4×22	25.4×22	25.4×22
	Fin spacing	mm	1.8	1.8	1.8
	Fin type		Hydrophilic aluminum		
	Tube outside diameter and type	mm	Φ9.52 / inner groove tube		
	length * height * width	mm	1125×512×88	1125×512×88	1125×512×88
	Number of circuits		20	20	20
Indoor air flow (H/M/L)		m ³ /h	4268/3780/3200	4280/3820/3200	4400/3708/3200
Indoor external static pressure (Hi)		Pa	140(50~250)	140(50~250)	140(50~250)
Indoor noise level (Hi/Mid/Lo)		dB(A)	59/55/52	59/55/52	59/55/52
Indoor unit	Dimension (W×H×D)	mm	1425×500×928	1425×500×928	1425×500×928
	Packing (W×H×D)	mm	1509×522×964	1509×522×964	1509×522×964
	Net/Gross weight	kg	115/129	115/129	115/129
Refrigerant type			R410A		
Throttle	Type		EXV (2 sets throttle boxes each unit)		
	Model		BD24FKS(L) (Winding: PXR-6-L400-XHP6R/AMP6BL-P)		
Design pressure		MPa	4.4/2.6		
Refrigerant piping	Liquid / Gas	mm	Φ9.52/ Φ15.9 *2	Φ9.52/ Φ15.9 *2	Φ9.52/ Φ15.9 *2
Connecting wiring	Power wiring	mm ²	3*2.5(L≤20m); 3*3.5(L≤50m)		
	Signal wiring	mm ²	3*0.75		
Drainage water pipe diameter			Φ32 (ID Φ25, OU Φ32)		
Controller			Wireless remote controller (RM05/BG(T)E-A) - Standard KJR-12B/DP(T)-E/ KJR-10B/DP(T)-E (6 m connection wire) - optional		
Operation temp		°C	Cooling: 17~32; Heating:10~28		

- Notes:**
- Nominal cooling capacities are based on the following conditions: return air temp. : 27°CDB, 19°CWB, outdoor temp.:35°CDB,equivalent ref. Piping: 8m(horizontal)
 - Nominal heating capacities are based on the following conditions: return air temp.: 20°CDB,outdoor temp.: 7°CDB,6°CWB,equivalent ref. Piping: 8m(horizontal)

3. Dimension

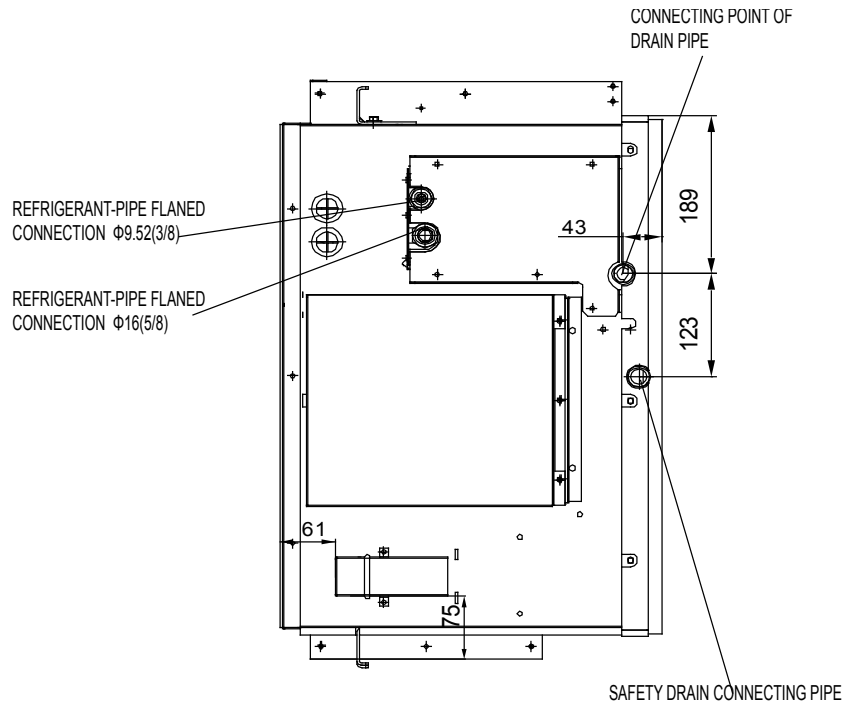
MVH71A-VA1, MVH80A-VA1, MVH90A-VA1, MVH112A-VA1

Front view, top view and rear view:

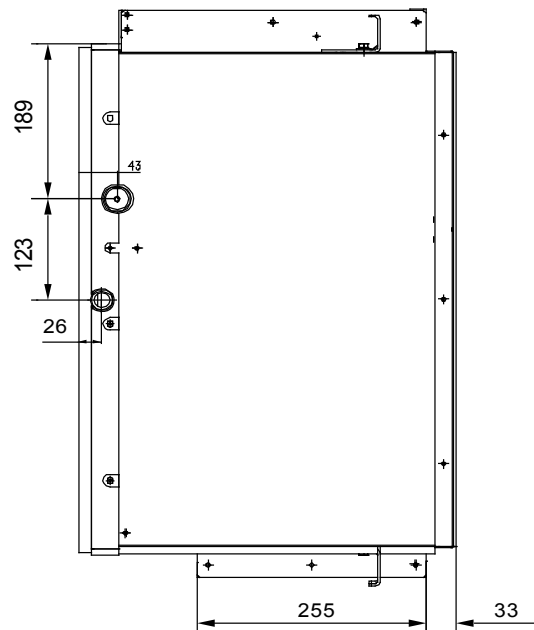


Side view:

- **Left side**

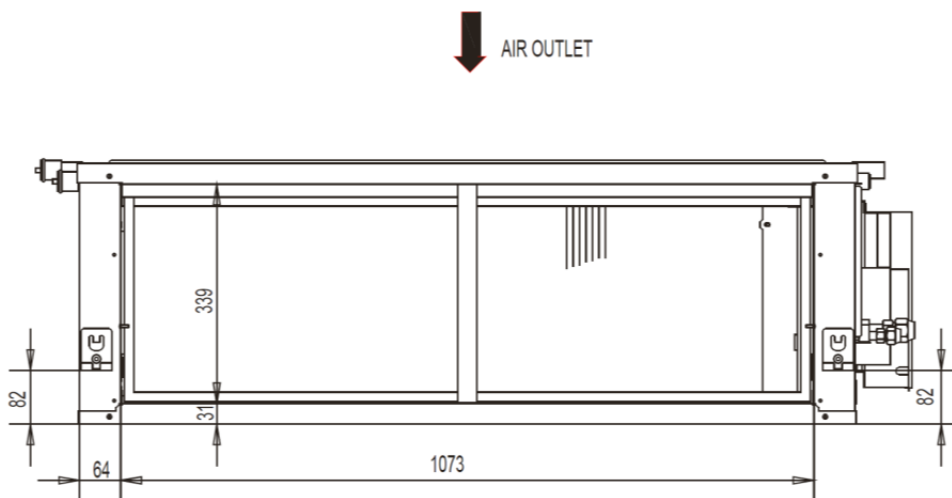
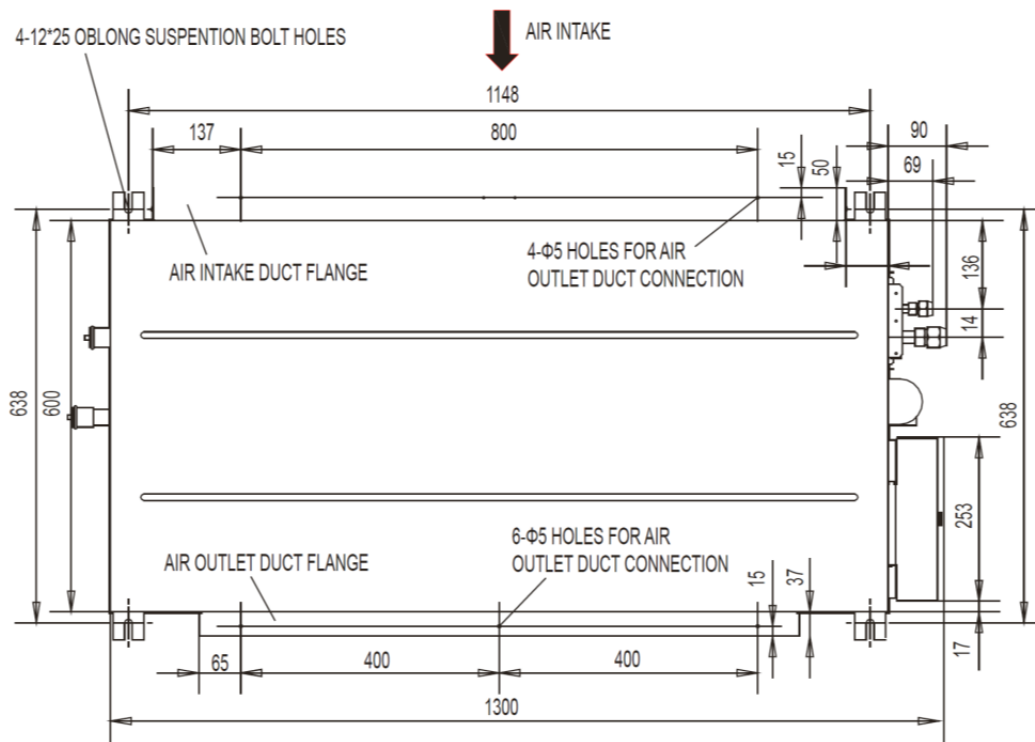
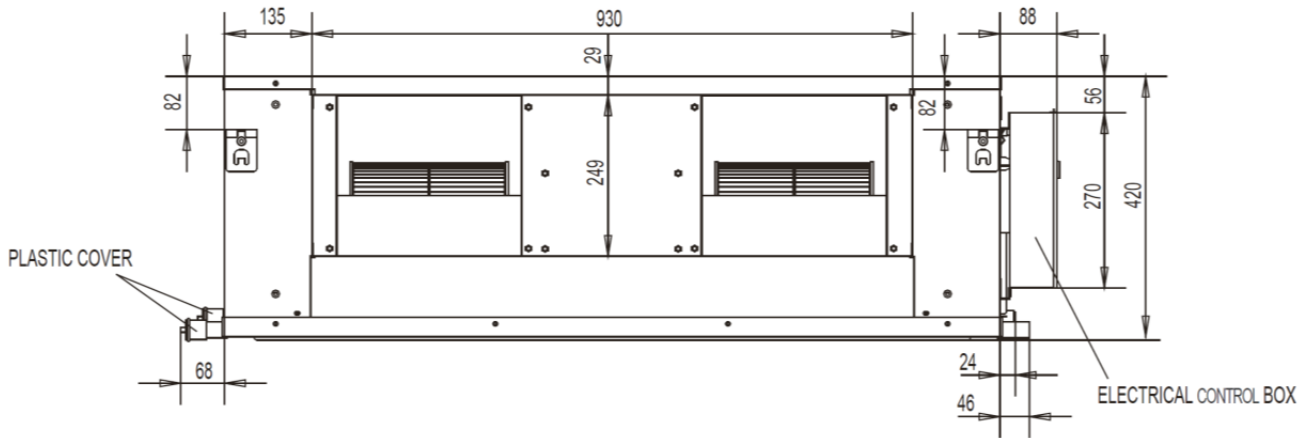


- **Right side**



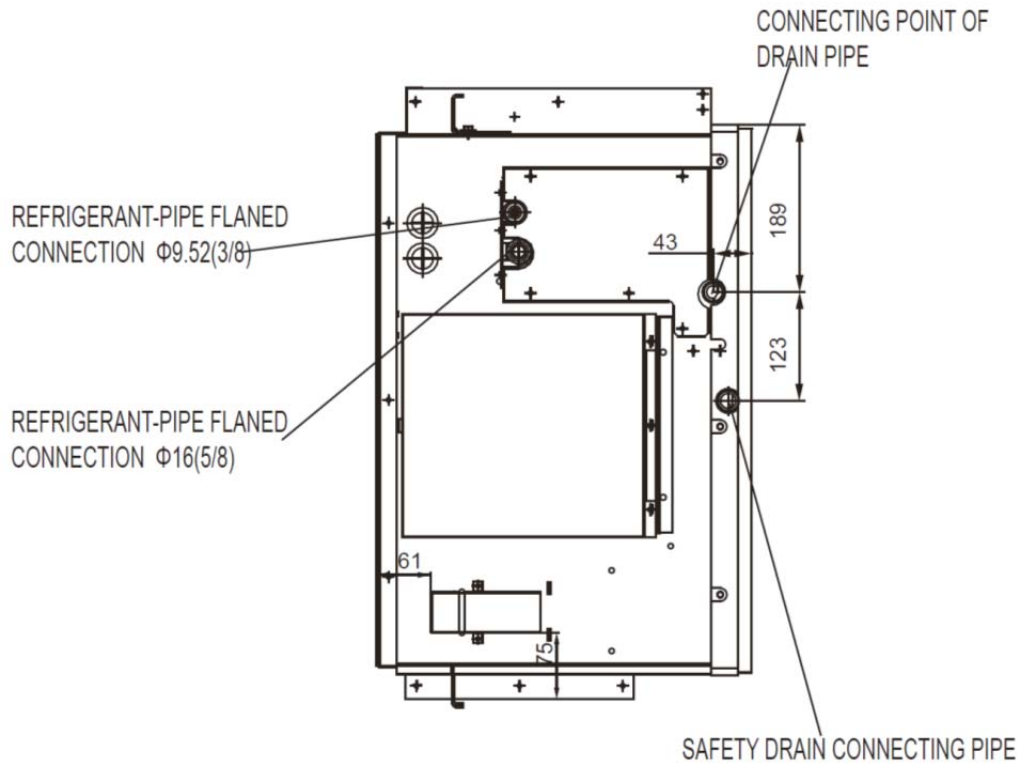
MVH140A-VA1, MVH160A-VA1

Front view, top view and rear view:

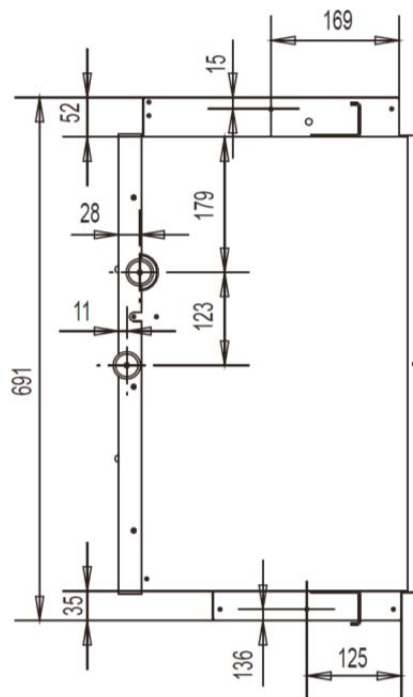


Side view:

- **Left side**

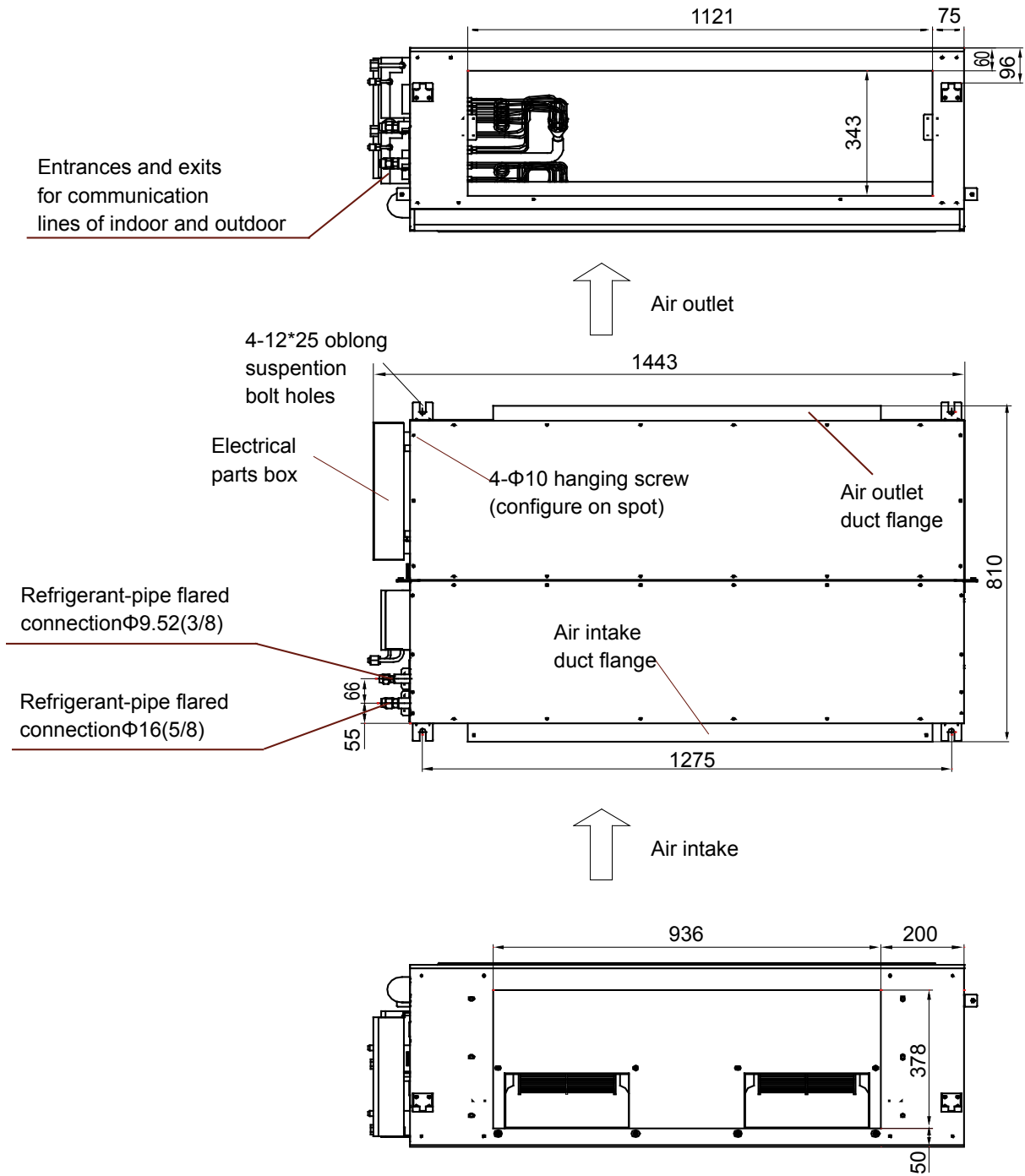


- **Right side**

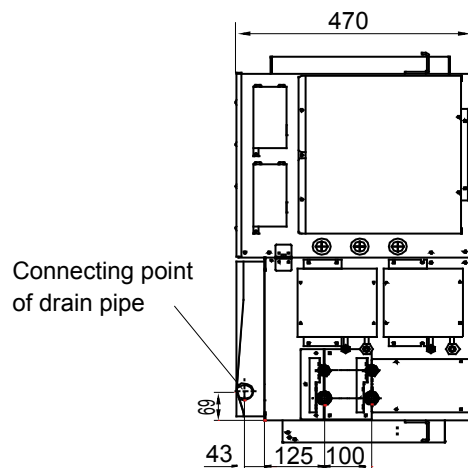


MVH200A-VA1, MVH250A-VA1, MVH280A-VA1

Front view, top view and rear view:



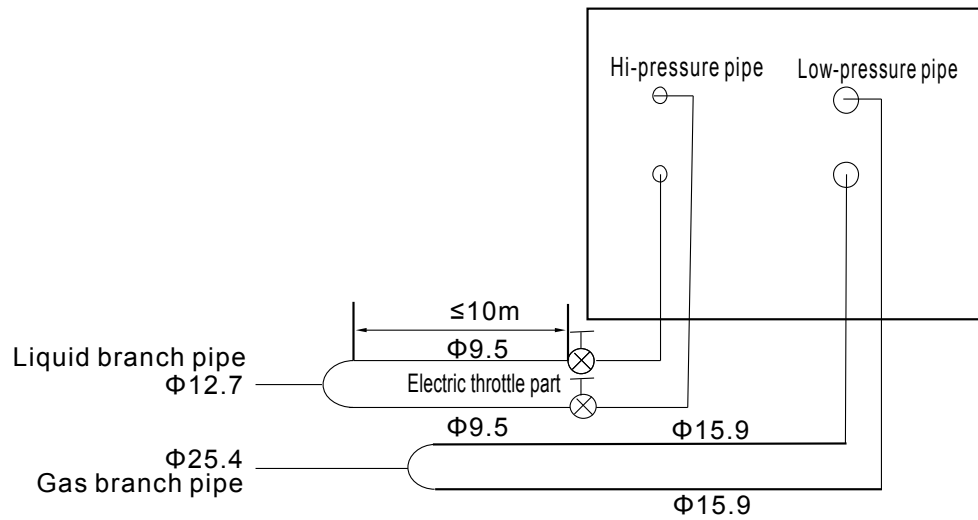
Side view:



Key points about the 200, 250, 280 model installation:

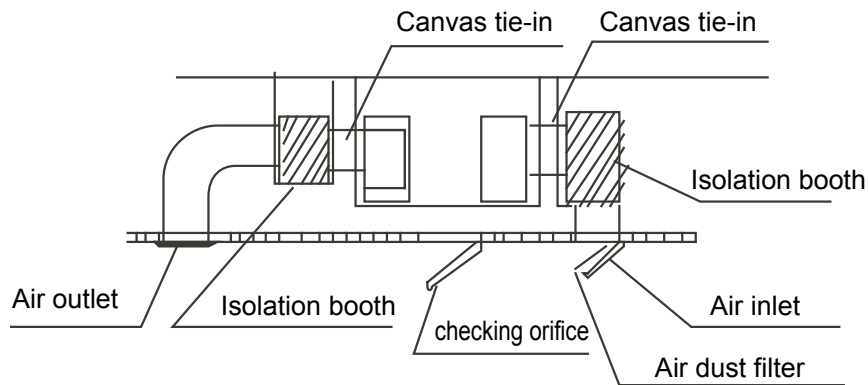
There're two sets of EXV boxes, as well two groups of pipes (Gas/Liquid), it's necessary to connect the two gas pipes together with the attached branch header BY101N1, as well the liquid pipes.

The branch header (1 set) already includes 1 gas and 1 liquid branch joint. Please kindly check the accessory and follow the instructions while install the indoor units and piping.

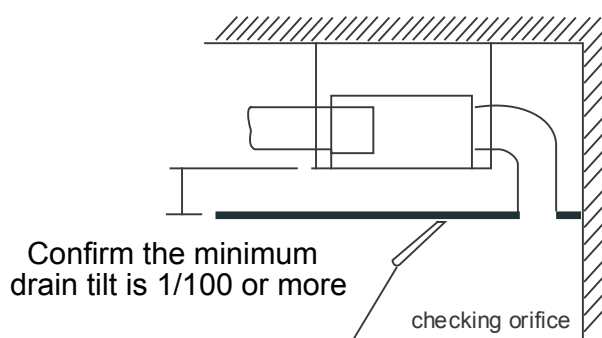
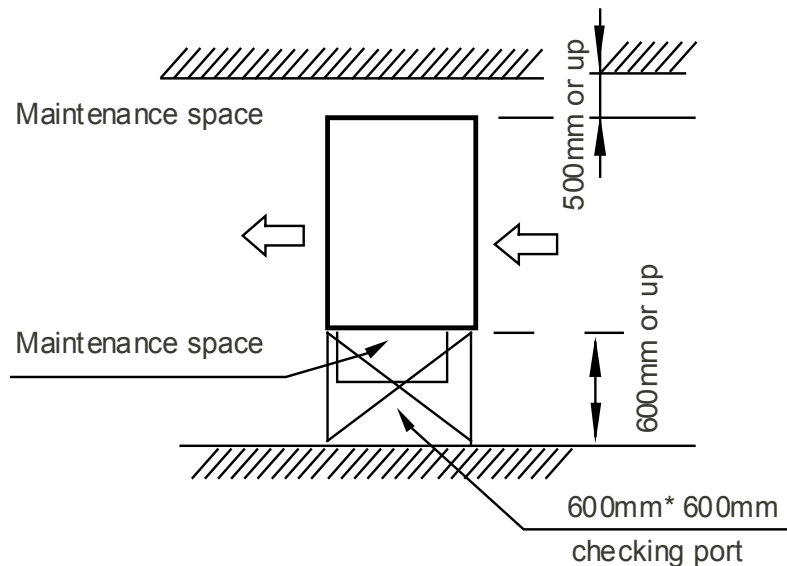


4. Service Space

- Ensure the needed spaces for installation and maintenance.
- The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
- The outlet and the inlet are not impeded, and the influence of external air is the least.
- The air flow can reach throughout the room.
- The connecting pipe and drainpipe could be extracted out easily.
- There is no direct radiation from heaters.
- **Below is the recommended duct installation method:**

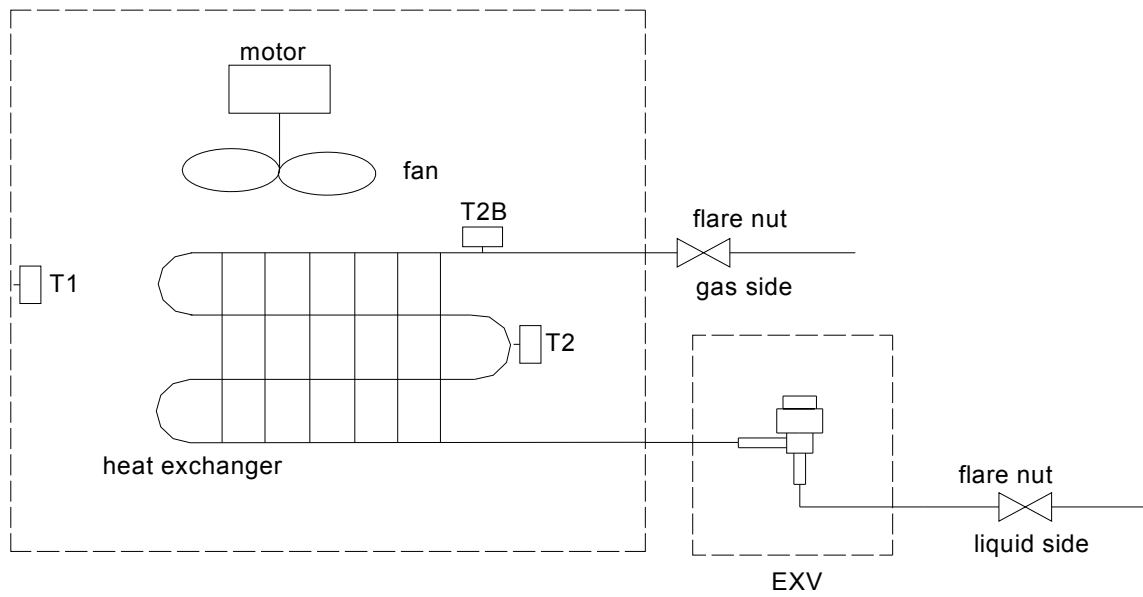


- **Keep min. 600*600 space for checking & maintenance:**

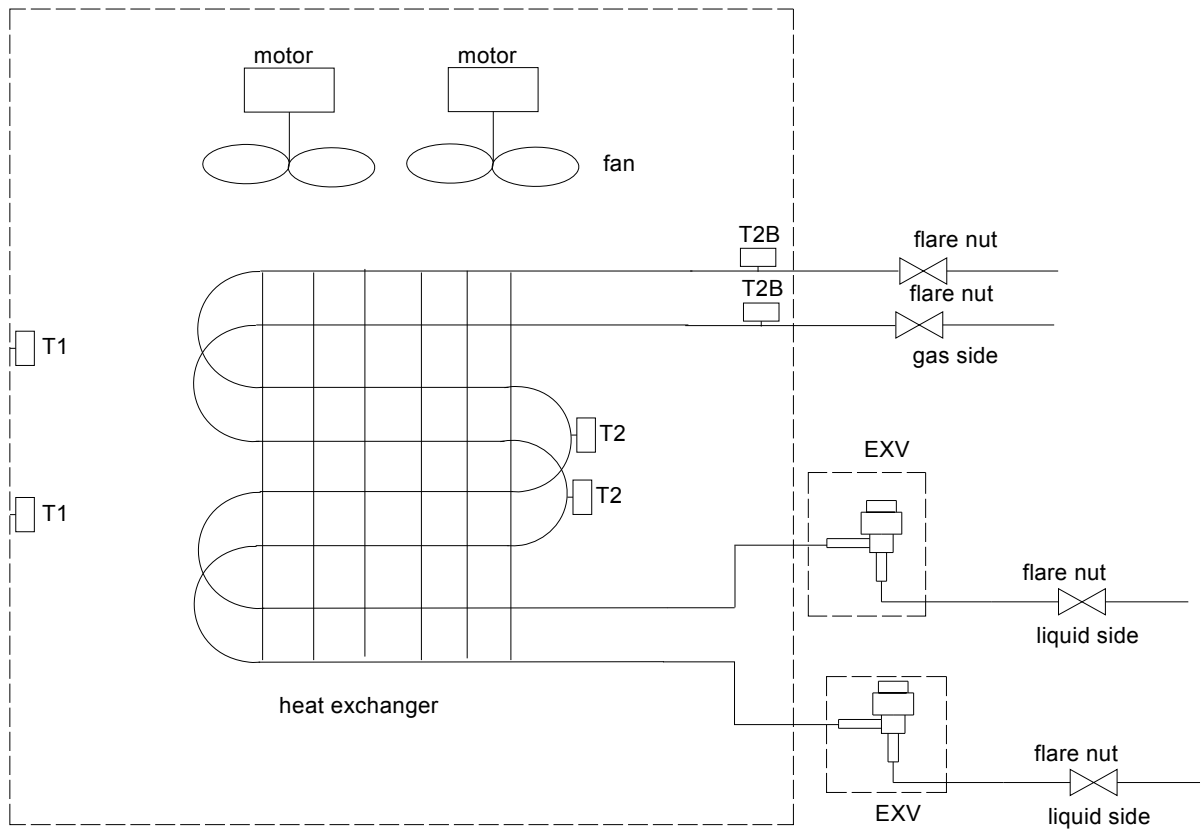


5. Piping Diagram

MVH71A-VA1, MVH80A-VA1, MVH90A-VA1, MVH112A-VA1, MVH140A-VA1, MVH160A-VA1



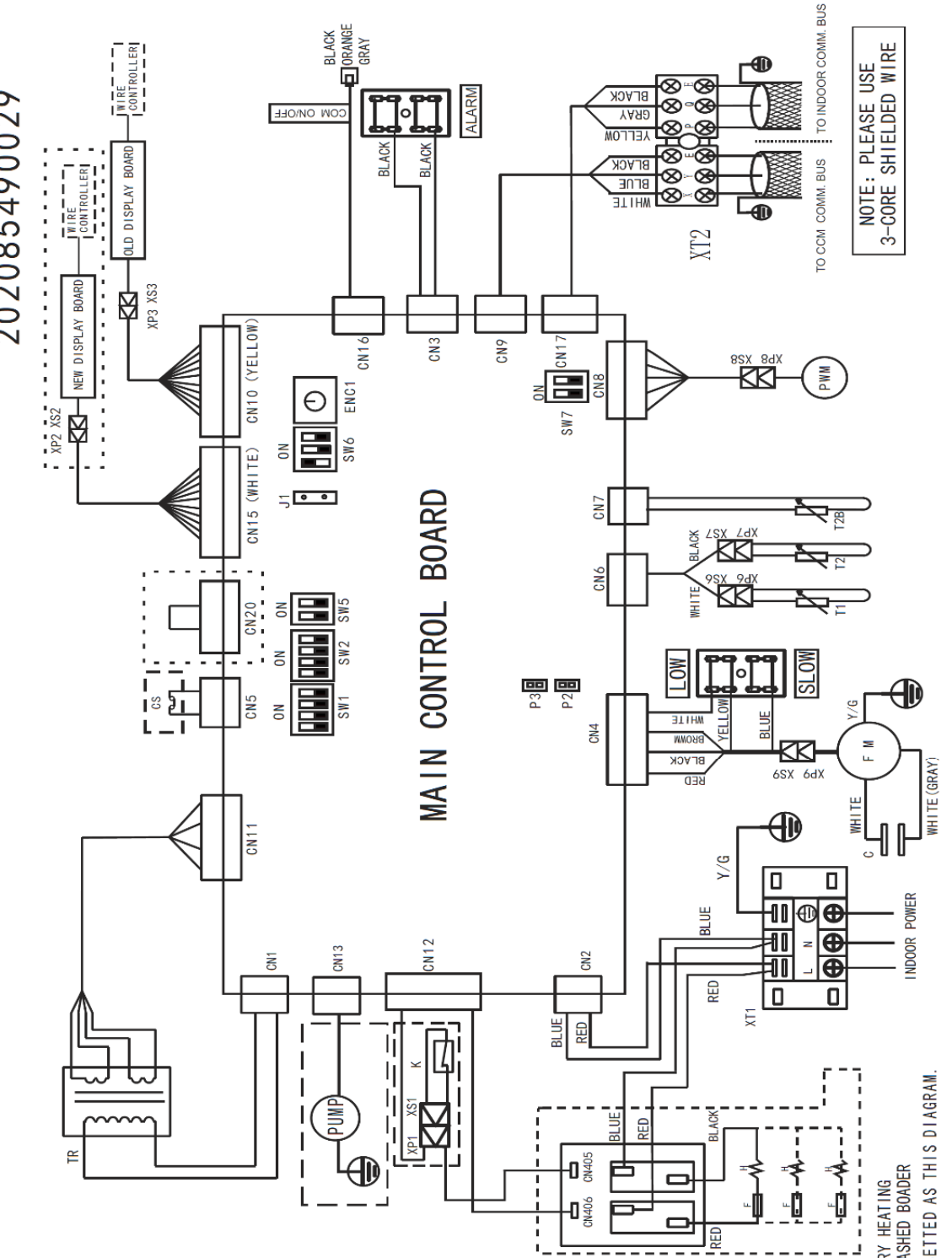
MVH200A-VA1, MVH250A-VA1, MVH280A-VA1



6. Wiring Diagram

MVH71A-VA1, MVH80A-VA1, MVH90A-VA1

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NOTE: PLEASE USE 3-CORE SHIELDED WIRE

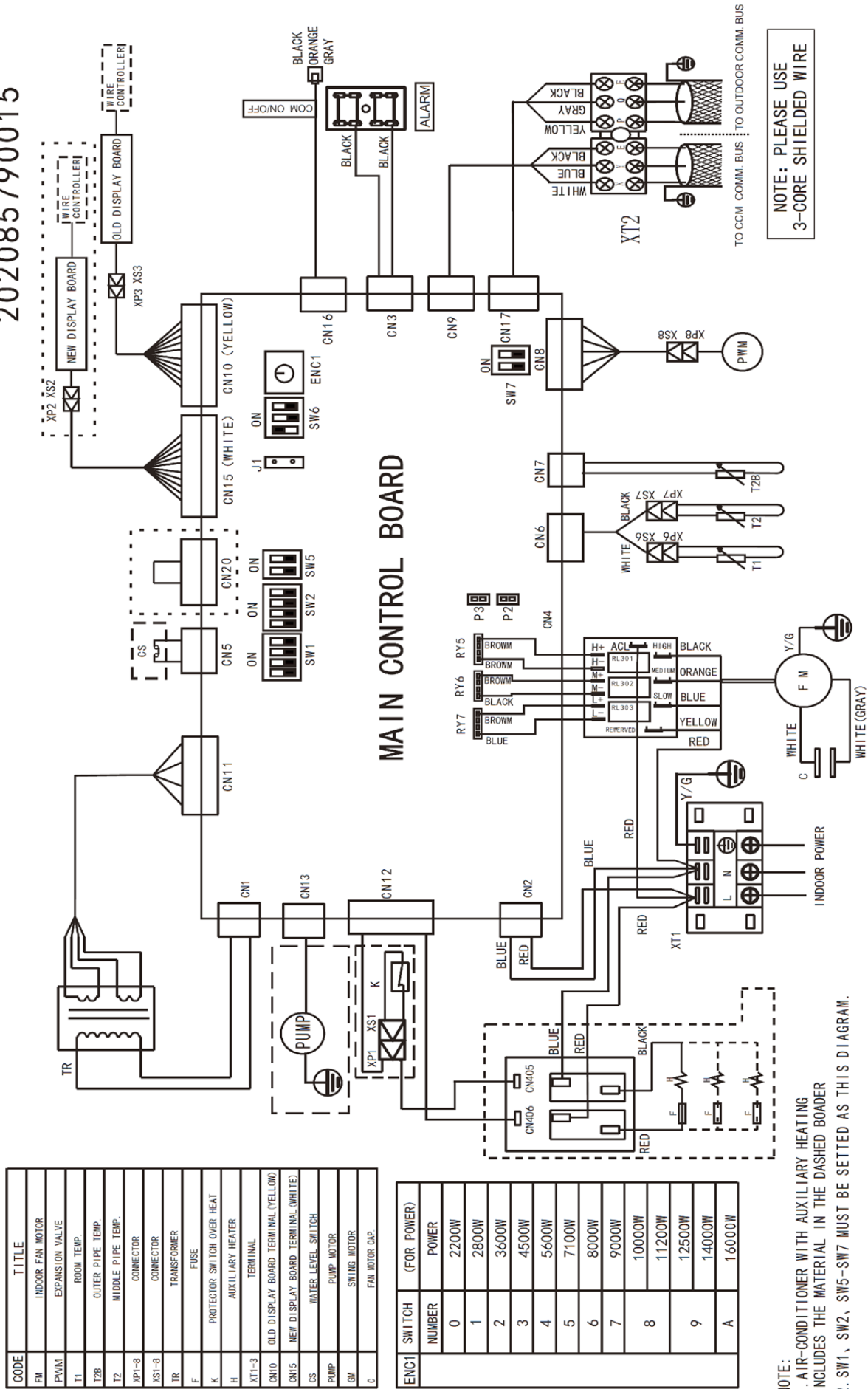
CODE	TITLE
FW	INDOOR FAN MOTOR
PWM	PULSE MOTOR: EXPANSION VALVE
T1	ROOM TEMP.
T2	OUTER PIPE TEMP.
T2	MIDDLE PIPE TEMP.
XP1-9	CONNECTOR
XS1-9	TRANSFORMER
F	FUSE
K	PROTECTOR SWITCH OVER HEAT
H	AUXILIARY HEATER
XT1-3	TERMINAL
CN10	OLD DISPLAY BOARD TERMINAL (YELLOW)
CN15	NEW DISPLAY BOARD TERMINAL (WHITE)
CS	WATER LEVEL SWITCH
PUMP	PUMP MOTOR
GN	SWING MOTOR
C	FAN MOTOR CAP.

ENC1 SWITCH NUMBER	POWER (FOR POWER)
0	2200W
1	2800W
2	3600W
3	4500W
4	5600W
5	7100W
6	8000W
7	9000W
8	10000W
9	11200W
9	12500W
9	14000W
A	16000W

NOTE:
 1. AIR-CONDITIONER WITH AUXILIARY HEATING INCLUDES THE MATERIAL IN THE DASHED BORDER
 2. SW1, SW2, SW5-SW7 MUST BE SETTED AS THIS DIAGRAM.

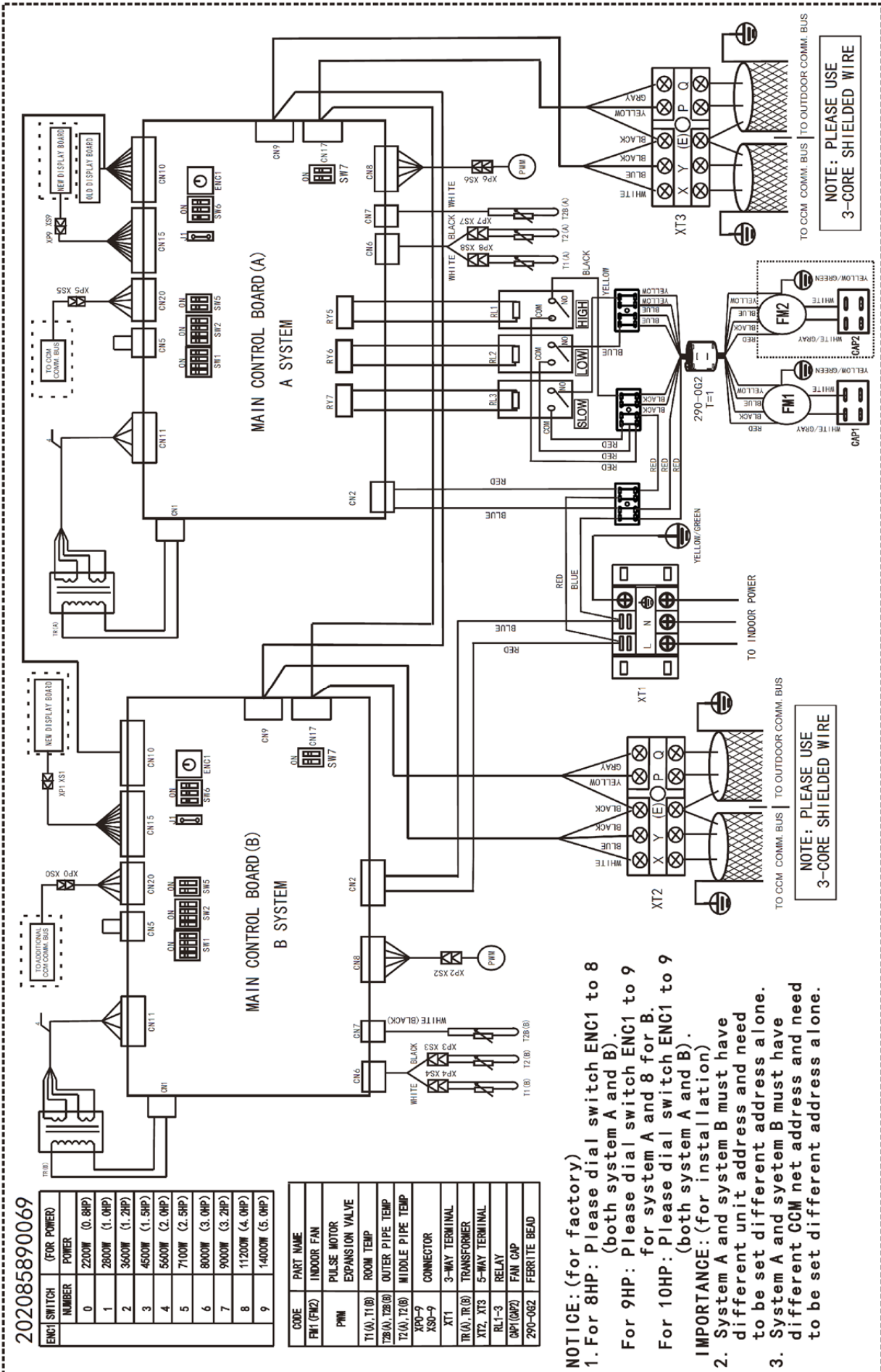
MVH112A-VA1, MVH140A-VA1, MVH160A-VA1

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NOTE: PLEASE USE 3-CORE SHIELDED WIRE

MVH200A-VA1, MVH250A-VA1, MVH280A-VA1

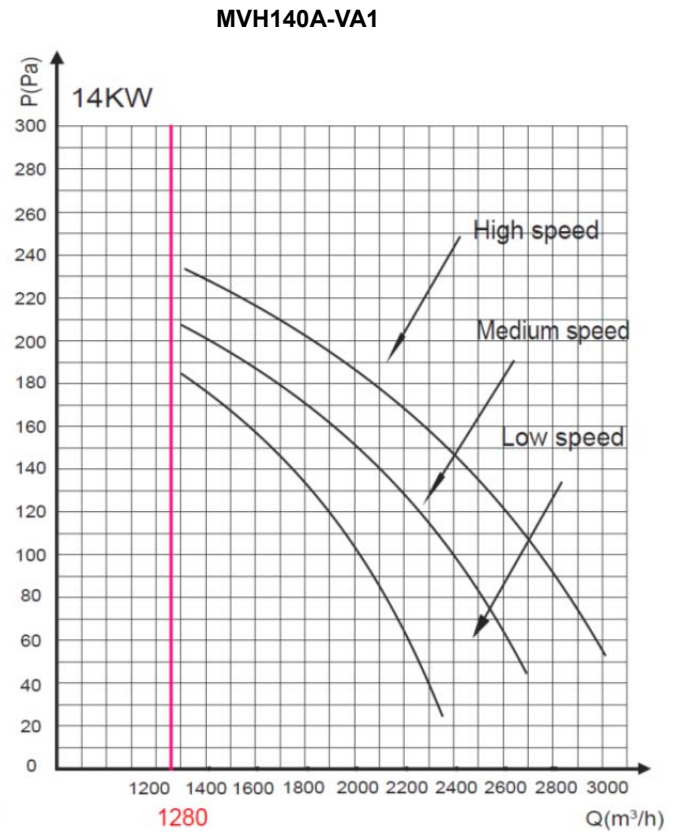
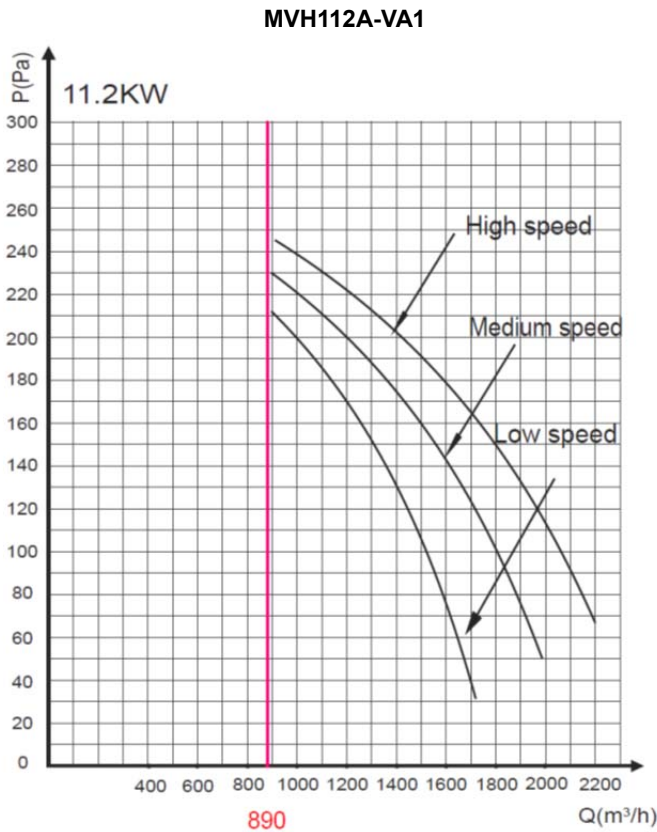
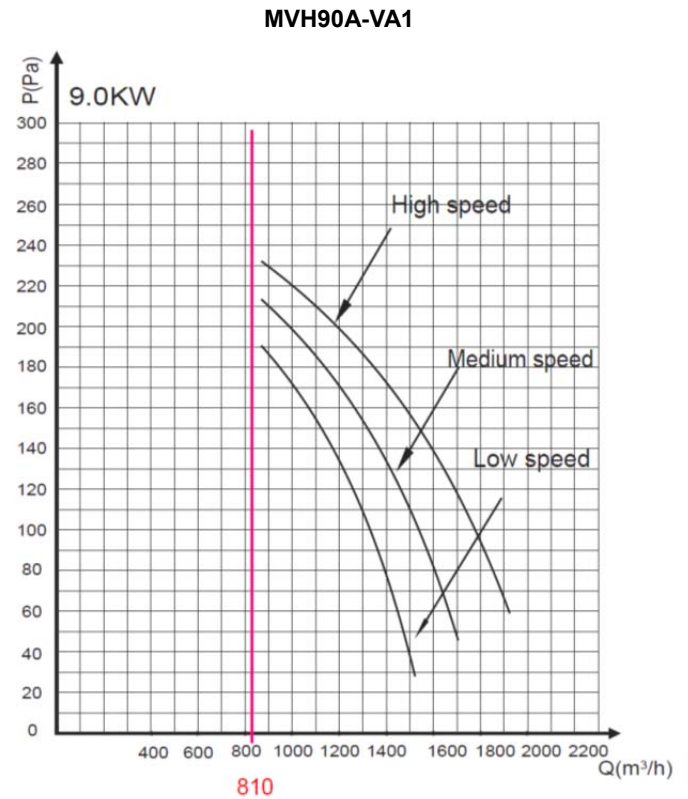
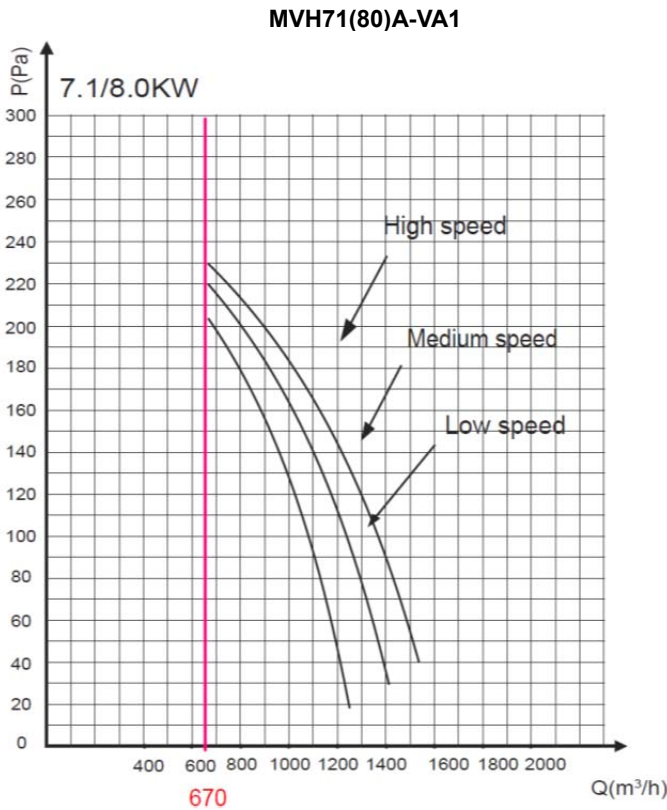


7. Fan Performance

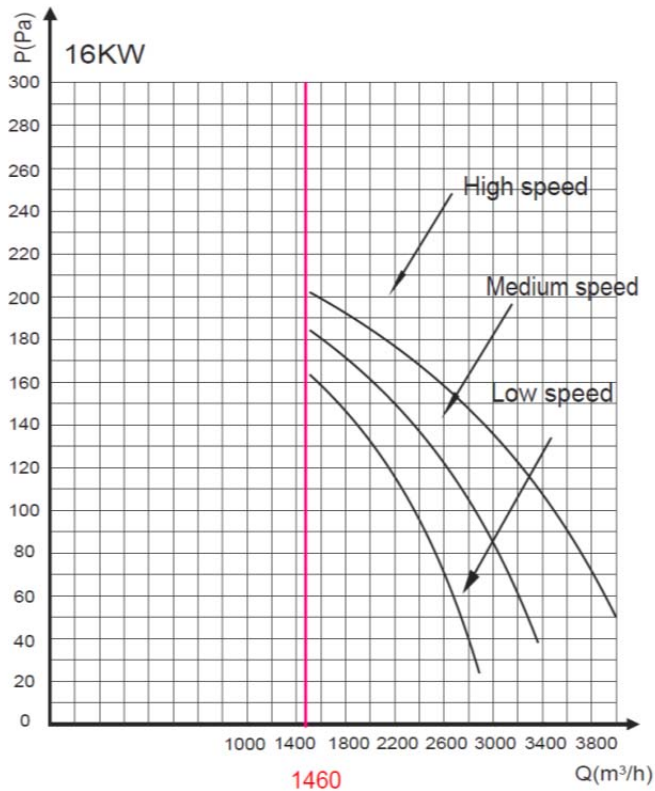
How to Read the Diagram

The vertical axis is the External Static Pressure (**Pa**) while the horizontal axis represents the Air Flow (**CMH**). The characteristic curve for the “Hi,” “Med,” and “Lo” fan speed control, The nameplate values are shown based on the “Hi” air flow.

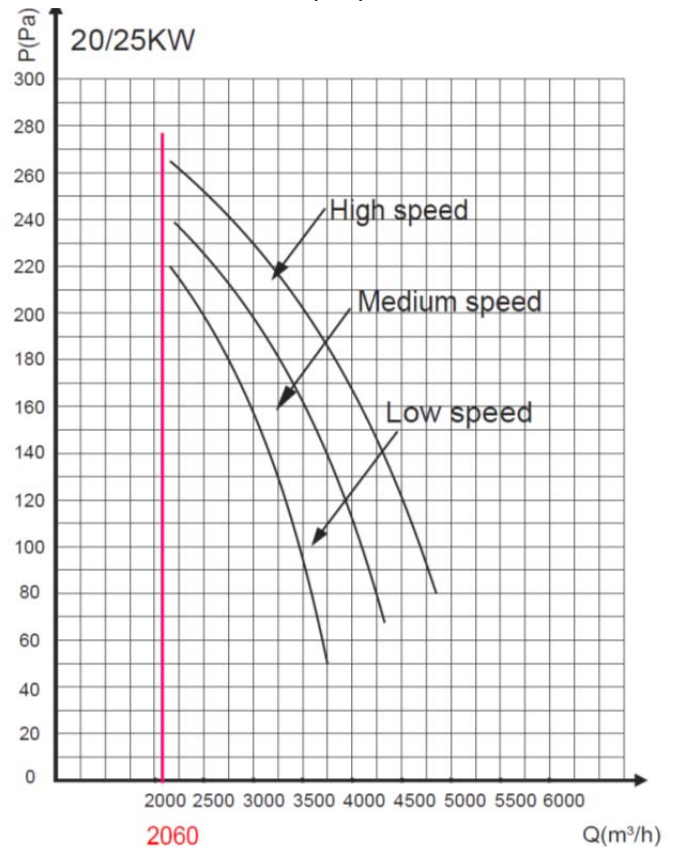
Therefore in the case of **112T1** Type, the air flow is **1544 CMH**, while the External Static Pressure is **90Pa** at “Lo” position. And **2117 CMH @ 90Pa**, at ‘Hi’ position.



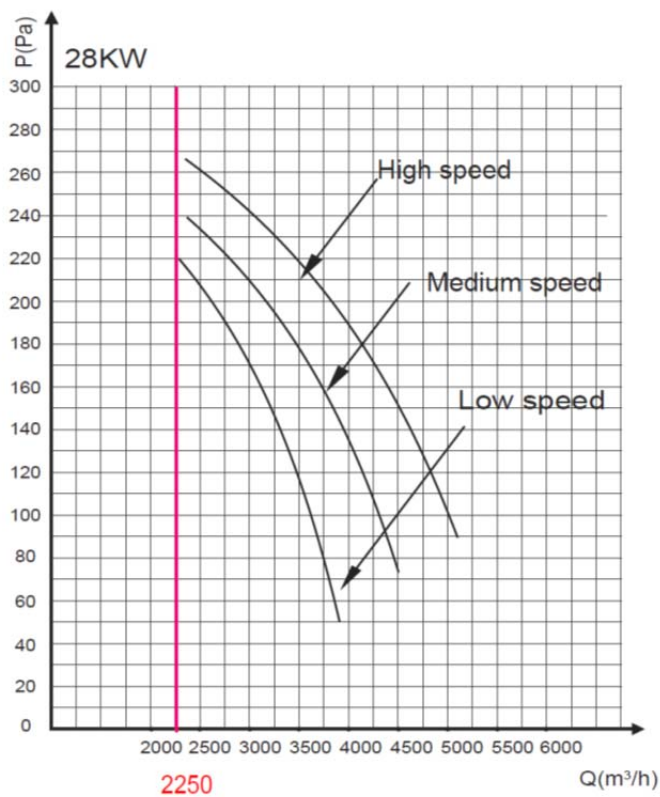
MVH160A-VA1



MVH200(250)A-VA1



MVH280A-VA1



- If the external static pressure is too great (due to long extension of duct, for example), the air flow volume may drop too low at each air outlet.
- So there's a **limit air flow volume** line for each speed, which is the min. airflow of this duct unit. At this flow volume, the fan achieve the max. ESP, and indoor evaporator may protect by low temp.
- As well, there's a limit airflow volume, which is the max. Value at each speed. It request the unit to connect

duct for air-inlet and outlet, to prevent damage from the high temp. of motor/evaporator.

8. Capacity Tables

8.1 Cooling

TC: total capacity SC: sensible capacity
 WB: wet-bulb temperature DB:dry-bulb temperature

Indoor Unit size (kW)	Outdoor temperature (□DB)	Indoor temperature (□WB/DB)													
		14/20		16/23		18/26		19/27		20/28		22/30		24/32	
		TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC	TC	SC
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
7.1	10.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	8.4	5.2	9.2	5.4
	12.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	8.4	5.2	9.1	5.3
	14.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	8.4	5.2	9.0	5.3
	16.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	8.4	5.2	8.9	5.2
	18.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	8.4	5.2	8.7	5.1
	20.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	8.4	5.2	8.5	5.0
	21.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	8.4	5.2	8.4	4.9
	23.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	8.4	5.2	8.3	4.8
	25.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	8.4	5.2	8.2	4.8
	27.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	8.1	5.1	8.2	4.9
	29.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	8.0	5.1	8.1	4.8
	31.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	7.9	5.0	7.8	4.6
	33.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	7.8	5.0	7.8	4.6
	35.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.5	5.2	7.6	4.8	7.7	4.6
	37.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.4	5.2	7.5	4.8	7.6	4.7
	39.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.2	5.0	7.4	4.8	7.6	4.7
42.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.2	5.0	7.4	4.8	7.6	4.7	
44.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.2	5.0	7.4	4.8	7.6	4.7	
46.0	4.9	4.2	5.8	4.7	6.7	5.0	7.1	5.3	7.2	5.0	7.4	4.8	7.6	4.7	
8.0	10.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.6	5.4	9.4	5.0	10.4	4.5
	12.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.6	5.4	9.4	5.0	10.2	4.5
	14.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.6	5.4	9.4	5.0	10.2	4.5
	16.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.6	5.4	9.4	5.0	10.0	4.5
	18.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.6	5.4	9.4	5.0	9.8	4.6
	20.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.6	5.4	9.4	5.0	9.6	4.6
	21.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.6	5.4	9.4	5.0	9.4	4.6
	23.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.6	5.4	9.4	5.0	9.4	4.6
	25.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.6	5.4	9.4	5.0	9.3	4.6
	27.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.6	5.4	9.1	5.0	9.2	4.6
	29.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.6	5.4	9.0	5.0	9.1	4.6
	31.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.6	5.4	8.9	5.0	8.8	4.6
	33.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.6	5.4	8.8	5.0	8.8	4.6
	35.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.5	5.4	8.6	5.0	8.6	4.7
	37.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.2	5.4	8.4	5.0	8.6	4.8
	39.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.2	5.4	8.3	5.0	8.6	4.8
42.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.2	5.4	8.3	5.0	8.6	4.8	
44.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.2	5.4	8.3	5.0	8.6	4.8	
46.0	5.5	6.8	6.5	6.3	7.4	6.0	8.0	5.7	8.2	5.4	8.3	5.0	8.6	4.8	
9.0	10.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.6	7.1	10.6	7.1	11.7	7.1
	12.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.6	7.1	10.6	7.1	11.5	7.0
	14.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.6	7.1	10.6	7.1	11.4	6.9
	16.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.6	7.1	10.6	7.1	11.3	6.8
	18.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.6	7.1	10.6	7.1	11.0	6.8
	20.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.6	7.1	10.6	7.1	10.8	6.6
	21.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.6	7.1	10.6	7.1	10.6	6.5
	23.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.6	7.1	10.6	7.1	10.5	6.5
	25.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.6	7.1	10.6	7.1	10.4	6.4
	27.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.6	7.1	10.3	6.9	10.4	6.4
	29.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.6	7.1	10.1	6.7	10.3	6.3
	31.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.6	7.1	10.0	6.7	9.9	6.2
	33.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.6	7.1	9.9	6.6	9.9	6.2
	35.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.5	7.0	9.6	6.4	9.7	6.2
	37.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.3	6.8	9.5	6.3	9.6	6.2
	39.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.2	6.7	9.4	6.3	9.6	6.2
42.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.2	6.7	9.4	6.3	9.6	6.2	
44.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.2	6.7	9.4	6.3	9.6	6.2	
46.0	6.2	5.7	7.3	6.2	8.4	6.8	9.0	6.9	9.2	6.7	9.4	6.3	9.6	6.2	

11.2	10.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.9	8.7	13.3	8.9	15.5	9.7
	12.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.9	8.7	13.3	8.9	14.4	9.1
	14.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.9	8.7	13.3	8.9	14.2	8.9
	16.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.9	8.7	13.3	8.9	14.1	8.8
	18.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.9	8.7	13.3	8.9	14.0	8.8
	20.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.9	8.7	13.3	8.9	13.9	8.7
	21.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.9	8.7	13.3	8.9	13.8	8.6
	23.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.9	8.7	13.1	8.8	13.7	8.6
	25.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.9	8.7	13.0	8.7	13.6	8.5
	27.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.9	8.7	12.9	8.6	13.4	8.4
	29.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.9	8.7	12.8	8.5	13.3	8.5
	31.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.9	8.7	12.7	8.5	12.8	8.1
	33.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.9	8.7	12.5	8.4	12.5	8.0
	35.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.8	8.6	12.4	8.3	12.3	7.9
	37.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.6	8.6	12.3	8.2	12.1	7.7
	39.0	7.7	6.9	9.1	7.6	10.5	8.3	11.2	8.5	11.4	8.4	12.2	8.2	11.9	7.7
	42.0	7.7	7.1	9.1	7.7	10.4	8.4	11.2	8.6	11.4	8.4	11.6	7.8	12.0	7.8
44.0	7.7	7.1	9.1	7.7	10.4	8.4	11.2	8.6	11.4	8.4	11.6	7.8	12.0	7.8	
46.0	7.7	7.1	9.1	7.7	10.4	8.4	11.2	8.6	11.4	8.4	11.6	7.8	12.0	7.8	
14.0	10.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.8	10.6	16.7	11.0	18.2	11.0
	12.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.8	10.6	16.7	11.0	17.9	10.8
	14.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.8	10.6	16.7	11.0	17.8	10.8
	16.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.8	10.6	16.7	11.0	17.5	10.6
	18.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.8	10.6	16.7	11.0	17.1	10.3
	20.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.8	10.6	16.7	11.0	16.8	10.2
	21.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.8	10.6	16.7	11.0	16.5	10.0
	23.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.8	10.6	16.4	11.0	16.4	9.9
	25.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.8	10.6	16.2	10.9	16.2	9.8
	27.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.8	10.6	16.1	10.8	16.1	9.9
	29.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.8	10.6	16.0	10.7	16.0	9.8
	31.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.8	10.6	15.8	10.6	15.4	9.5
	33.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.8	10.6	15.7	10.5	15.4	9.5
	35.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.7	10.5	15.1	10.1	15.1	9.5
	37.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.6	10.4	15.1	10.1	15.0	9.4
	39.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.3	10.2	14.6	9.9	15.0	9.5
	42.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.3	10.2	14.6	9.9	15.0	9.5
44.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.3	10.2	14.6	9.9	15.0	9.5	
46.0	9.7	8.5	11.3	9.3	13.2	10.4	14.0	10.6	14.3	10.2	14.6	9.9	15.0	9.5	
16.0	10.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	17.0	10.6	19.0	9.8	20.8	9.0
	12.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	17.0	10.6	19.0	9.8	20.5	9.0
	14.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	17.0	10.6	19.0	9.8	20.3	9.0
	16.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	17.0	10.6	19.0	9.8	20.0	9.0
	18.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	17.0	10.6	19.0	9.8	19.5	9.0
	20.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	17.0	10.6	19.0	9.8	19.2	9.0
	21.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	17.0	10.6	19.0	9.8	18.9	9.0
	23.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	17.0	10.6	18.7	9.9	18.7	9.0
	25.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	17.0	10.6	18.6	9.9	18.6	9.0
	27.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	17.0	10.6	18.4	9.9	18.4	9.1
	29.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	17.0	10.6	18.2	9.9	18.2	9.1
	31.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	17.0	10.6	18.1	9.9	17.6	9.1
	33.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	17.0	10.6	17.9	9.9	17.6	9.1
	35.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	16.8	10.6	17.3	9.9	17.3	9.3
	37.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	16.6	10.6	17.3	9.9	17.1	9.3
	39.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	16.3	10.6	16.6	10.1	17.1	9.4
	42.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	16.3	10.6	16.6	10.1	17.1	9.4
44.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	16.3	10.6	16.6	10.1	17.1	9.4	
46.0	11.0	13.0	13.0	12.2	15.0	11.7	16.0	11.2	16.3	10.6	16.6	10.1	17.1	9.4	
20.0	10.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.2	13.2	23.8	12.2	26.0	11.2
	12.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.2	13.2	23.8	12.2	25.6	11.2
	14.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.2	13.2	23.8	12.2	25.4	11.2
	16.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.2	13.2	23.8	12.2	25.0	11.2
	18.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.2	13.2	23.8	12.2	24.4	11.2
	20.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.2	13.2	23.8	12.2	24.0	11.2
	21.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.2	13.2	23.8	12.2	23.6	11.2
	23.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.2	13.2	23.4	12.4	23.4	11.2

	25.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.2	13.2	23.2	12.4	23.2	11.2
	27.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.2	13.2	23.0	12.4	23.0	11.4
	29.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.2	13.2	22.8	12.4	22.8	11.4
	31.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.2	13.2	22.6	12.4	22.0	11.4
	33.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.2	13.2	22.4	12.4	22.0	11.4
	35.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	21.0	13.2	21.6	12.4	21.6	11.6
	37.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	20.8	13.2	21.6	12.4	21.4	11.6
	39.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	20.4	13.2	20.8	12.6	21.4	11.8
	42.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	20.4	13.2	20.8	12.6	21.4	11.8
	44.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	20.4	13.2	20.8	12.6	21.4	11.8
	46.0	13.8	16.2	16.2	15.2	18.8	14.6	20.0	14.0	20.4	13.2	20.8	12.6	21.4	11.8
25.0	10.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.5	16.5	29.8	15.3	32.5	14.0
	12.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.5	16.5	29.8	15.3	32.0	14.0
	14.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.5	16.5	29.8	15.3	31.8	14.0
	16.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.5	16.5	29.8	15.3	31.3	14.0
	18.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.5	16.5	29.8	15.3	30.5	14.0
	20.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.5	16.5	29.8	15.3	30.0	14.0
	21.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.5	16.5	29.8	15.3	29.5	14.0
	23.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.5	16.5	29.3	15.5	29.3	14.0
	25.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.5	16.5	29.0	15.5	29.0	14.0
	27.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.5	16.5	28.8	15.5	28.8	14.3
	29.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.5	16.5	28.5	15.5	28.5	14.3
	31.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.5	16.5	28.3	15.5	27.5	14.3
	33.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.5	16.5	28.0	15.5	27.5	14.3
	35.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.3	16.5	27.0	15.5	27.0	14.5
	37.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	26.0	16.5	27.0	15.5	26.8	14.5
	39.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	25.5	16.5	26.0	15.8	26.8	14.8
42.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	25.5	16.5	26.0	15.8	26.8	14.8	
44.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	25.5	16.5	26.0	15.8	26.8	14.8	
46.0	17.3	20.3	20.3	19.0	23.5	18.3	25.0	17.5	25.5	16.5	26.0	15.8	26.8	14.8	
28.0	10.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.7	18.5	33.3	17.1	36.4	15.7
	12.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.7	18.5	33.3	17.1	35.8	15.7
	14.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.7	18.5	33.3	17.1	35.6	15.7
	16.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.7	18.5	33.3	17.1	35.0	15.7
	18.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.7	18.5	33.3	17.1	34.2	15.7
	20.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.7	18.5	33.3	17.1	33.6	15.7
	21.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.7	18.5	33.3	17.1	33.0	15.7
	23.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.7	18.5	32.8	17.4	32.8	15.7
	25.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.7	18.5	32.5	17.4	32.5	15.7
	27.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.7	18.5	32.2	17.4	32.2	16.0
	29.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.7	18.5	31.9	17.4	31.9	16.0
	31.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.7	18.5	31.6	17.4	30.8	16.0
	33.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.7	18.5	31.4	17.4	30.8	16.0
	35.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.4	18.5	30.2	17.4	30.2	16.2
	37.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	29.1	18.5	30.2	17.4	30.0	16.2
	39.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	28.6	18.5	29.1	17.6	30.0	16.5
42.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	28.6	18.5	29.1	17.6	30.0	16.5	
44.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	28.6	18.5	29.1	17.6	30.0	16.5	
46.0	19.3	22.7	22.7	21.3	26.3	20.4	28.0	19.6	28.6	18.5	29.1	17.6	30.0	16.5	

8.2 Heating

TC: total capacity

WB: wet-bulb temperature DB: dry-bulb temperature

Indoor Unit size (kW)	Outdoor temperature (□)		Indoor temperature (□ DB)					
			16.00	18.00	20.00	21.00	22.00	24.00
	WB	DB	TC kW	TC kW	TC kW	TC kW	TC kW	TC kW
7.1	-20	-19.8	4.48	4.48	4.48	4.48	4.48	4.48
	-19	-18.8	4.8	4.8	4.8	4.8	4.8	4.8
	-17	-16.7	5.04	5.04	5.04	5.04	5.04	5.04
	-15	-14.7	5.2	5.2	5.2	5.2	5.2	5.2
	-13.00	-12.60	5.36	5.36	5.36	5.36	5.36	5.36
	-11.00	-10.50	5.6	5.6	5.6	5.6	5.6	5.6
	-10.00	-9.50	5.84	5.84	5.84	5.84	5.84	5.84
	-9.10	-8.50	6	6	6	6	6	6
	-7.60	-7.00	6.08	6.08	6.08	6.08	6.08	6.08
	-5.60	-5.00	6.32	6.32	6.32	6.32	6.32	6.32
	-3.70	-3.00	6.64	6.64	6.64	6.64	6.64	6.64
	-0.70	0.00	7.12	7.12	7.12	7.12	7.12	6.72
	2.20	3.00	7.52	7.52	7.52	7.52	7.36	6.72
	4.10	5.00	7.76	7.76	7.76	7.76	7.36	6.72
	6.00	7.00	8	8	8	7.76	7.36	6.72
7.90	9.00	8.24	8.24	8	7.76	7.36	6.72	
9.80	11.00	8.48	8.48	8	7.76	7.36	6.72	
11.80	13.00	8.8	8.64	8	7.76	7.36	6.72	
13.70	15.00	9.04	8.64	8	7.76	7.36	6.72	
8.0	-20	-19.8	5.04	5.04	5.04	5.04	5.04	5.04
	-19	-18.8	5.4	5.4	5.4	5.4	5.4	5.4
	-17	-16.7	5.67	5.67	5.67	5.67	5.67	5.67
	-15	-14.7	5.85	5.85	5.85	5.85	5.85	5.85
	-13.00	-12.60	6.03	6.03	6.03	6.03	6.03	6.03
	-11.00	-10.50	6.3	6.3	6.3	6.3	6.3	6.3
	-10.00	-9.50	6.57	6.57	6.57	6.57	6.57	6.57
	-9.10	-8.50	6.75	6.75	6.75	6.75	6.75	6.75
	-7.60	-7.00	6.84	6.84	6.84	6.84	6.84	6.84
	-5.60	-5.00	7.11	7.11	7.11	7.11	7.11	7.11
	-3.70	-3.00	7.47	7.47	7.47	7.47	7.47	7.47
	-0.70	0.00	8.01	8.01	8.01	8.01	8.01	7.56
	2.20	3.00	8.46	8.46	8.46	8.46	8.28	7.56
	4.10	5.00	8.73	8.73	8.73	8.73	8.28	7.56
	6.00	7.00	9	9	9	8.73	8.28	7.56
7.90	9.00	9.27	9.27	9	8.73	8.28	7.56	
9.80	11.00	9.54	9.54	9	8.73	8.28	7.56	
11.80	13.00	9.9	9.72	9	8.73	8.28	7.56	
13.70	15.00	10.17	9.72	9	8.73	8.28	7.56	
9.0	-20	-19.8	5.6	5.04	5.6	5.6	5.6	5.6
	-19	-18.8	6	5.4	6	6	6	6
	-17	-16.7	6.3	6.3	6.3	6.3	6.3	6.3
	-15	-14.7	6.5	6.5	6.5	6.5	6.5	6.5
	-13.00	-12.60	6.7	6.7	6.7	6.7	6.7	6.7
	-11.00	-10.50	7	7	7	7	7	7
	-10.00	-9.50	7.3	7.3	7.3	7.3	7.3	7.3
	-9.10	-8.50	7.5	7.5	7.5	7.5	7.5	7.5
	-7.60	-7.00	7.6	7.6	7.6	7.6	7.6	7.6
	-5.60	-5.00	7.9	7.9	7.9	7.9	7.9	7.9
	-3.70	-3.00	8.3	8.3	8.3	8.3	8.3	8.3
	-0.70	0.00	8.9	8.9	8.9	8.9	8.9	8.4
	2.20	3.00	9.4	9.4	9.4	9.4	9.2	8.4
	4.10	5.00	9.7	9.7	9.7	9.7	9.2	8.4
	6.00	7.00	10	10	10	9.7	9.2	8.4
7.90	9.00	10.3	10.3	10	9.7	9.2	8.4	
9.80	11.00	10.6	10.6	10	9.7	9.2	8.4	
11.80	13.00	11	10.8	10	9.7	9.2	8.4	
13.70	15.00	11.3	10.8	10	9.7	9.2	8.4	
11.2	-20	-19.8	7	7	7	7	7	7

	-19	-18.8	7.5	7.5	7.5	7.5	7.5	7.5
	-17	-16.7	7.88	7.88	7.88	7.88	7.88	7.88
	-15	-14.7	8.13	8.13	8.13	8.13	8.13	8.13
	-13.00	-12.60	8.38	8.38	8.38	8.38	8.38	8.38
	-11.00	-10.50	8.75	8.75	8.75	8.75	8.75	8.75
	-10.00	-9.50	9.13	9.13	9.13	9.13	9.13	9.13
	-9.10	-8.50	9.38	9.38	9.38	9.38	9.38	9.38
	-7.60	-7.00	9.5	9.5	9.5	9.5	9.5	9.5
	-5.60	-5.00	9.88	9.88	9.88	9.88	9.88	9.88
	-3.70	-3.00	10.38	10.38	10.38	10.38	10.38	10.38
	-0.70	0.00	11.13	11.13	11.13	11.13	11.13	10.5
	2.20	3.00	11.75	11.75	11.75	11.75	11.5	10.5
	4.10	5.00	12.13	12.13	12.13	12.13	11.5	10.5
	6.00	7.00	12.5	12.5	12.5	12.13	11.5	10.5
	7.90	9.00	12.88	12.88	12.5	12.13	11.5	10.5
	9.80	11.00	13.25	13.25	12.5	12.13	11.5	10.5
11.80	13.00	13.75	13.5	12.5	12.13	11.5	10.5	
13.70	15.00	14.13	13.5	12.5	12.13	11.5	10.5	
14.0	-20	-19.8	8.68	8.68	8.68	8.68	8.68	8.68
	-19	-18.8	9.3	9.3	9.3	9.3	9.3	9.3
	-17	-16.7	9.77	9.77	9.77	9.77	9.77	9.77
	-15	-14.7	10.08	10.08	10.08	10.08	10.08	10.08
	-13.00	-12.60	10.4	10.4	10.4	10.4	10.4	10.4
	-11.00	-10.50	10.9	10.9	10.9	10.9	10.9	10.9
	-10.00	-9.50	11.3	11.3	11.3	11.3	11.3	11.3
	-9.10	-8.50	11.6	11.6	11.6	11.6	11.6	11.6
	-7.60	-7.00	11.8	11.8	11.8	11.8	11.8	11.8
	-5.60	-5.00	12.3	12.3	12.3	12.3	12.3	12.3
	-3.70	-3.00	12.9	12.9	12.9	12.9	12.9	12.9
	-0.70	0.00	13.8	13.8	13.8	13.8	13.8	13
	2.20	3.00	14.6	14.6	14.6	14.6	14.3	13
	4.10	5.00	15	15	15	15	14.3	13
	6.00	7.00	15.5	15.5	15.5	15	14.3	13
	7.90	9.00	16	16	15.5	15	14.3	13
9.80	11.00	16.4	16.4	15.5	15	14.3	13	
11.80	13.00	17.1	16.7	15.5	15	14.3	13	
13.70	15.00	17.5	16.7	15.5	15	14.3	13	
16.0	-20	-19.8	9.2	9.2	9.2	9.2	9.2	9.2
	-19	-18.8	9.9	9.9	9.9	9.9	9.9	9.9
	-17	-16.7	10.4	10.4	10.4	10.4	10.4	10.4
	-15	-14.7	10.7	10.7	10.7	10.7	10.7	10.7
	-13.00	-12.6	11.4	11.4	11.4	11.4	11.4	11.4
	-11.00	-10.5	11.6	11.7	11.7	11.7	11.7	11.7
	-10.00	-9.5	12.0	12.0	12.0	12.0	12.0	12.0
	-9.10	-8.5	12.4	12.4	12.4	12.4	12.4	12.4
	-7.60	-7	12.5	12.5	12.5	12.5	12.5	12.5
	-5.60	-5	13.0	13.0	13.0	13.0	13.0	13.0
	-3.70	-3	13.7	13.7	13.7	13.7	13.7	13.7
	-0.70	0	14.7	14.7	14.7	14.7	14.7	13.9
	2.20	3	15.5	15.5	15.5	15.5	15.2	13.9
	4.10	5	16.0	16.0	16.0	16.0	15.2	13.9
	6.00	7	16.5	16.5	16.5	16.0	15.2	13.9
	7.90	9	17.0	17.0	16.5	16.0	15.2	13.9
9.80	11	17.5	17.5	16.5	16.0	15.2	13.9	
11.80	13	18.2	17.8	16.5	16.0	15.2	13.9	
13.70	15	18.6	17.8	16.5	16.0	15.2	13.9	
20.0	-20	-19.8	12.6	12.6	12.6	12.6	12.6	12.6
	-19	-18.8	13.5	13.5	13.5	13.5	13.5	13.5
	-17	-16.7	14.2	14.2	14.2	14.2	14.2	14.2
	-15	-14.7	14.6	14.6	14.6	14.6	14.6	14.6
	-13.00	-12.6	15.5	15.5	15.5	15.5	15.5	15.5
	-11.00	-10.5	15.8	16.0	16.0	16.0	16.0	16.0
	-10.00	-9.5	16.4	16.4	16.4	16.4	16.4	16.4
	-9.10	-8.5	16.9	16.9	16.9	16.9	16.9	16.9
-7.60	-7	17.1	17.1	17.1	17.1	17.1	17.1	

	-5.60	-5	17.8	17.8	17.8	17.8	17.8	17.8
	-3.70	-3	18.7	18.7	18.7	18.7	18.7	18.7
	-0.70	0	20.0	20.0	20.0	20.0	20.0	18.9
	2.20	3	21.2	21.2	21.2	21.2	20.7	18.9
	4.10	5	21.8	21.8	21.8	21.8	20.7	18.9
	6.00	7	22.5	22.5	22.5	21.8	20.7	18.9
	7.90	9	23.2	23.2	22.5	21.8	20.7	18.9
	9.80	11	23.9	23.9	22.5	21.8	20.7	18.9
	11.80	13	24.8	24.3	22.5	21.8	20.7	18.9
	13.70	15	25.4	24.3	22.5	21.8	20.7	18.9
25.0	-20	-19.8	14.56	14.56	14.56	14.56	14.56	14.56
	-19	-18.8	15.6	15.6	15.6	15.6	15.6	15.6
	-17	-16.7	16.38	16.38	16.38	16.38	16.38	16.38
	-15	-14.7	16.9	16.9	16.9	16.9	16.9	16.9
	-13.00	-12.6	17.94	17.94	17.94	17.94	17.94	17.94
	-11.00	-10.5	18.2	18.46	18.46	18.46	18.46	18.46
	-10.00	-9.5	18.98	18.98	18.98	18.98	18.98	18.98
	-9.10	-8.5	19.5	19.5	19.5	19.5	19.5	19.5
	-7.60	-7	19.76	19.76	19.76	19.76	19.76	19.76
	-5.60	-5	20.54	20.54	20.54	20.54	20.54	20.54
	-3.70	-3	21.58	21.58	21.58	21.58	21.58	21.58
	-0.70	0	23.14	23.14	23.14	23.14	23.14	21.84
	2.20	3	24.44	24.44	24.44	24.44	23.92	21.84
	4.10	5	25.22	25.22	25.22	25.22	23.92	21.84
	6.00	7	26	26	26	25.22	23.92	21.84
	7.90	9	26.78	26.78	26	25.22	23.92	21.84
9.80	11	27.56	27.56	26	25.22	23.92	21.84	
11.80	13	28.6	28.08	26	25.22	23.92	21.84	
13.70	15	29.38	28.08	26	25.22	23.92	21.84	
28.0	-20	-19.8	17.6	17.6	17.6	17.6	17.6	17.6
	-19	-18.8	18.9	18.9	18.9	18.9	18.9	18.9
	-17	-16.7	19.8	19.8	19.8	19.8	19.8	19.8
	-15	-14.7	20.5	20.5	20.5	20.5	20.5	20.5
	-13.00	-12.6	21.7	21.7	21.7	21.7	21.7	21.7
	-11.00	-10.5	22.1	22.4	22.4	22.4	22.4	22.4
	-10.00	-9.5	23.0	23.0	23.0	23.0	23.0	23.0
	-9.10	-8.5	23.6	23.6	23.6	23.6	23.6	23.6
	-7.60	-7	23.9	23.9	23.9	23.9	23.9	23.9
	-5.60	-5	24.9	24.9	24.9	24.9	24.9	24.9
	-3.70	-3	26.1	26.1	26.1	26.1	26.1	26.1
	-0.70	0	28.0	28.0	28.0	28.0	28.0	26.5
	2.20	3	29.6	29.6	29.6	29.6	29.0	26.5
	4.10	5	30.6	30.6	30.6	30.6	29.0	26.5
	6.00	7	31.5	31.5	31.5	30.6	29.0	26.5
	7.90	9	32.4	32.4	31.5	30.6	29.0	26.5
9.80	11	33.4	33.4	31.5	30.6	29.0	26.5	
11.80	13	34.7	34.0	31.5	30.6	29.0	26.5	
13.70	15	35.6	34.0	31.5	30.6	29.0	26.5	

9. Electric Characteristics

Model	Indoor Unit				Power Supply		IFM	
	Hz	Voltage	Min.	Max.	MCA	MFA	KW	FLA
MVH71A-VA1	50	220-240V	198V	254V	1.23	5	0.1	1.17
MVH80A-VA1	50	220-240V	198V	254V	1.23	5	0.1	1.17
MVH90A-VA1	50	220-240V	198V	254V	1.87	5	0.16	1.71
MVH112A-VA1	50	220-240V	198V	254V	2.3	5	0.2	2.18
MVH140A-VA1	50	220-240V	198V	254V	2.85	5	0.3	2.56
MVH160A-VA1	50	220-240V	198V	254V	4.77	6	0.4	3.52
MVH200A-VA1	50	220-240V	198V	254V	8.6	10	0.55 (*2)	3.1 (*2)
MVH250A-VA1	50	220-240V	198V	254V	8.6	10	0.55 (*2)	3.1 (*2)
MVH280A-VA1	50	220-240V	198V	254V	8.6	10	0.55 (*2)	3.25 (*2)

Remark:

MCA: Min. Current Amps. (A)

MFA: Max. Fuse Amps. (A)

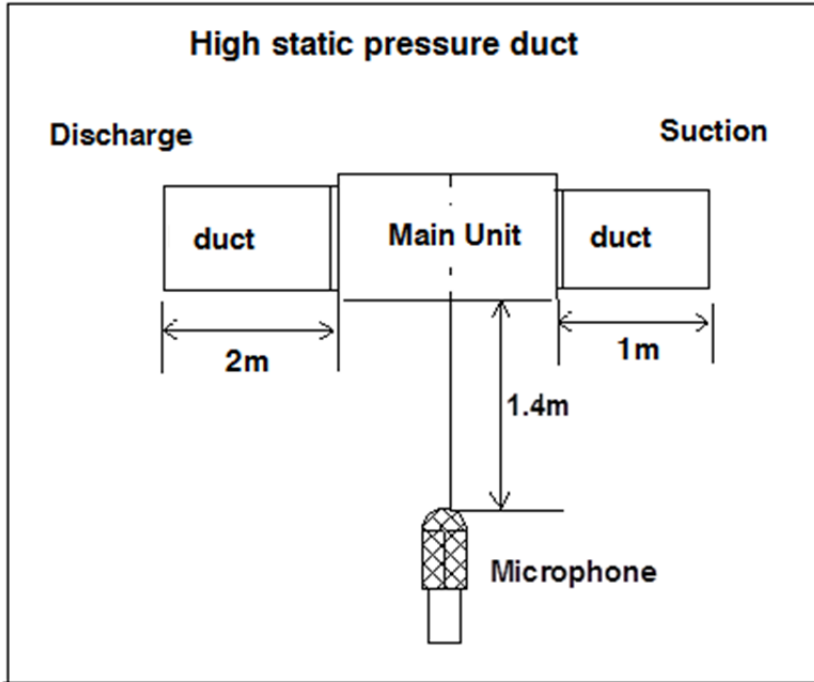
KW: Fan Motor Rated Output (kW)

FLA: Full Load Amps. (A)

IFM:Indoor Fan Motor

10. Noise Levels

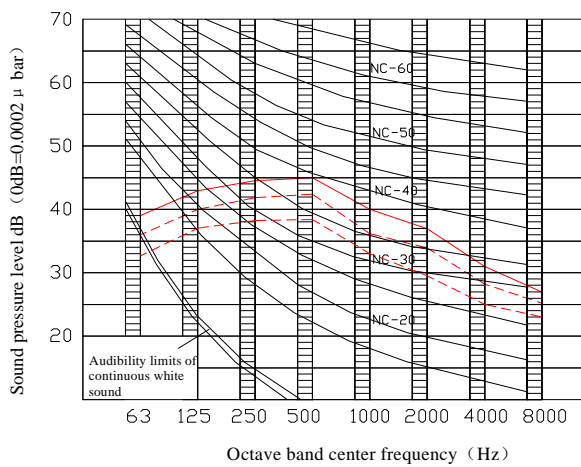
10.1 Test condition



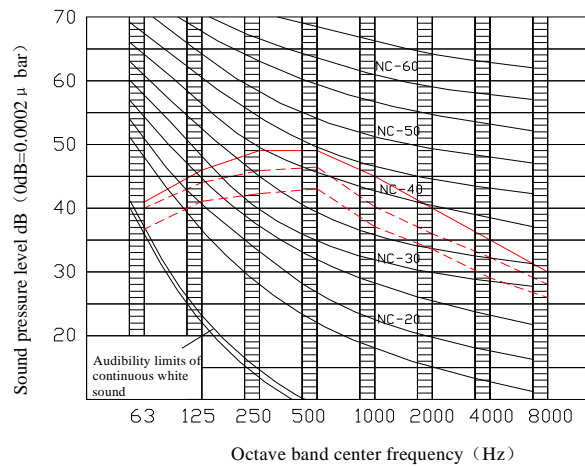
10.2 Test value

Model	Noise test value dB(A)		
	Hi	Mid	Low
MVH71A-VA1	48	46	44.5
MVH80A-VA1	48	46	44.5
MVH90A-VA1	52	49	47
MVH112A-VA1	52	49	47
MVH140A-VA1	53	50	48
MVH160A-VA1	54	52	50
MVH200A-VA1	58	55	52
MVH250A-VA1	58	55	52
MVH280A-VA1	58	55	52

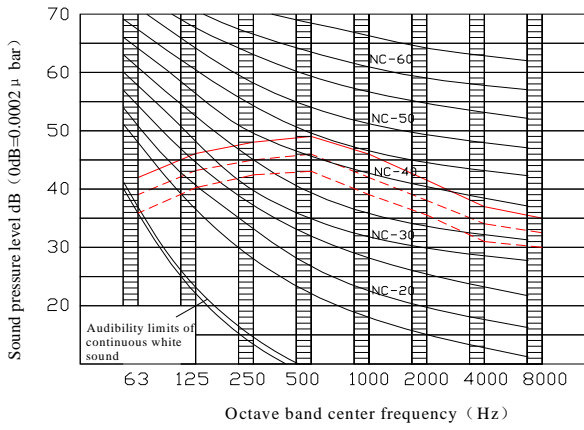
MVH71(80)A-VA1



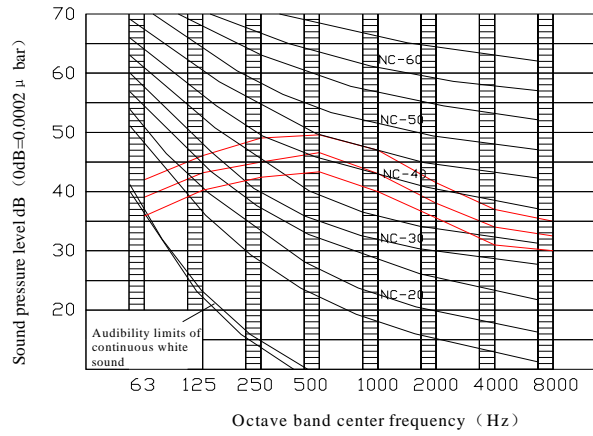
MVH90(112)A-VA1



MVH140A-VA1



MVH160A-VA1



MVH200(250,280)A-VA1

