



Service manual

MIV V4+ Indoor units

Low Static Pressure Duct Type

MVL18A-VA1

MVL22A-VA1

MVL28A-VA1

MVL36A-VA1

MVL45A-VA1

MVL56A-VA1



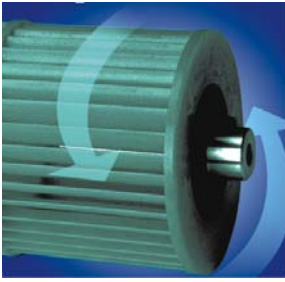
Low Static Pressure Duct Type

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1. Feature

1.1 Lower noise level

—Utilize the cross blow fan, the lowest noise is 21dB(A).



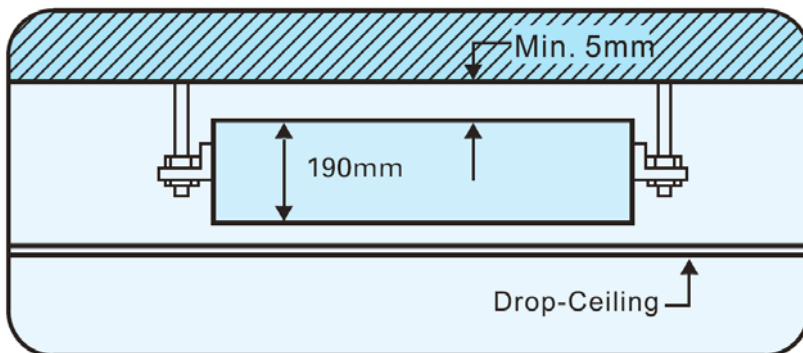
1.2 Smoother airflow with less turbulence

—Owing to the multiple-blade fan rotor and the air guide design, the airflow is getting smoother and more comfortable

1.3 More light weight and super thin

—The whole body adopt fireproof plastic material

—Flat design for easy fit when ceiling over head space is minimal. Only 190 mm in height, this model can be installed in rooms with as little as 200 mm depth between the drop-ceiling and ceiling slab.



—Great for hotel use!

1.4 wider capacity range

—The capacity range from 1.8KW to 5.6KW, six model.

1.5 Convenient installation

1.5.1 The EXV is fixed beside of the indoor unit

1.5.2 The connection pipe is flexible pipe, so it can change the connection direction conveniently.

1.5.3.Suction chamber is included as standard equipment,

2. Specifications

Model			MVL18A-VA1	MVL22A-VA1	MVL28A-VA1
Power supply		V- Ph-Hz	220-240V~, 1Ph, 50Hz		
Cooling	Capacity	kW	1.8	2.2	2.8
	Input	W	40	40	40
	Rated current	A	0.17	0.17	0.17
Heating	Capacity	kW	2.2	2.6	3.2
	Input	W	40	40	40
	Rated current	A	0.17	0.17	0.17
Indoor fan motor	Model		RPS15D	RPS15D	RPS15D
	Type		Asynchronism motor		
	Brand		Welling		
	Input	W	30.6/29.2/25.8/22.3	30.6/29.2/25.8/22.3	32.8/30.8/26/23
	Capacitor	μF	0.8μF/450V	0.8μF/450V	1.0μF/450V
	Speed (hi/mid/lo)	r/min	885/819/653/545	885/819/653/545	985/890/707/598
Indoor coil	Number of rows		2	2	2
	Tube pitch(a)x row pitch(b)	mm	21*13.37	21*13.37	21*13.37
	Fin spacing	mm	1.5	1.5	1.5
	Fin type		Hydrophilic aluminum		
	Tube outside diameter and type	mm	Φ7, Inner groove tube		
	Coil length x height x width	mm	635X283.5 X26.74	635X283.5 X26.74	635X283.5 X26.74
	Number of circuits		2	2	4
Indoor air flow (H/M/L)		m ³ /h	446/323/250	446/323/250	527/359/267
Indoor external static pressure (Hi)		Pa	5	5	5
Indoor noise level (Hi/Mid/Lo)		dB(A)	33/27/21	34/29/21	36/34/30
Indoor unit	Dimension (W×H×D)	mm	850×190×405	850×190×405	850×190×405
	Packing (W×H×D)	mm	903*277*445	903*277*445	903*277*445
	Net/Gross weight	kg	11.5/14.5	11.5/14.5	11.5/14.5
Refrigerant type			R410A		
Throttle	Type		Electrical expand valve		
	Model		CE-J20AB1/N1-C		
Design pressure		MPa	4.4/2.6		
Refrigerant piping	Liquid side/ Gas side	mm	Φ6.35/ Φ12.7	Φ6.35/ Φ12.7	Φ6.35/ Φ12.7
Connecting wiring	Power wiring	mm ²	3*2		
	Signal wiring	mm ²	4*0.75		
Drainage water pipe diameter			ODΦ20 IDΦ15		
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		

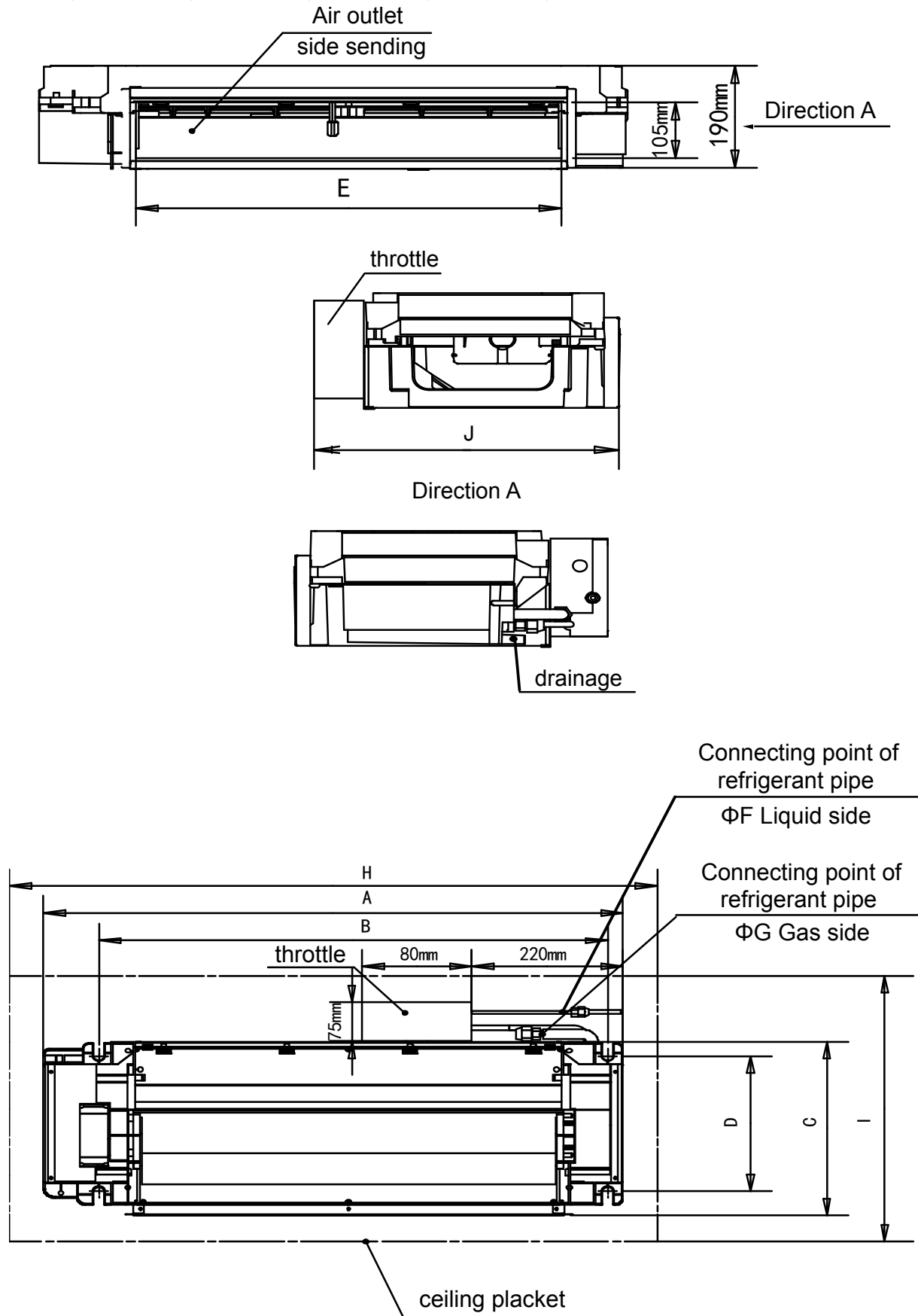
- Notes:**
- Nominal cooling capacities are based on the following conditions: return air temp. : 27°CDB, 19°CWB, outdoor temp.:35°CDB,equivalent ref. Piping: 8m(horizontal)
 - Nominal heating capacities are based on the following conditions: return air temp.: 20°CDB,outdoor temp.: 7°CDB,6°CWB,equivalent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

Model			MVL36A-VA1	MVL45A-VA1	MVL56A-VA1
Power supply		V- Ph-Hz	220-240V~, 1Ph, 50Hz		
Cooling	Capacity	kW	3.6	4.5	5.6
	Input	W	40	40	56
	Rated current	A	0.17	0.17	0.24
Heating	Capacity	kW	4	5	6.3
	Input	W	40	40	56
	Rated current	A	0.17	0.24	0.24
Indoor fan motor	Model		RPS15D	YDK22-4	YDK22-4
	Type		Asynchronism motor		
	Brand		Welling		
	Input	W	32.8/30.8/26/23	50.8/46.7/41.8/36.8	50.8/46.7/41.8/36.8
	Capacitor	μF	1.0μF/450V	1.5μF/450V	1.5μF/450V
	Speed (hi/mid/lo)	r/min	985/890/707/598	1055/930/790/650	1055/930/790/650
Indoor coil	Number of rows		2	2	2
	Tube pitch(a)x row pitch(b)	mm	21*13.37	21*13.37	21*13.37
	Fin spacing	mm	1.5	1.5	1.5
	Fin type		Hydrophilic aluminum		
	Tube outside diameter and type	mm	Φ7 inner groove tube		
	Coil length x height x width	mm	635X283.5 X26.74	785X325.5 X26.74	785X325.5 X26.74
	Number of circuits		4	4	4
Indoor air flow (H/M/L)		m ³ /h	527/359/267	767/634/512	767/634/512
Indoor external static pressure (Hi)		Pa	5	5	5
Indoor noise level (Hi/Mid/Lo)		dB(A)	36/34/30	37/35/31	37/35/31
Indoor unit	Dimension (W×H×D)	mm	850×190×405	1030×190×430	1030×190×430
	Packing (W×H×D)	mm	903*277*445	1084*277*472	1084*277*472
	Net/Gross weight	kg	11.5/14.5	14 /17.5	14/17.5
Refrigerant type			R410A		
Throttle	Type		Electrical expand valve		
	Model		CE-J20BB1/N1-C		
Design pressure		MPa	4.4/2.6		
Refrigerant piping	Liquid side/ Gas side	mm	Φ6.35/ Φ12.7	Φ9.52/ Φ12.7	Φ9.52/ Φ15.9
Connecting wiring	Power wiring	mm ²	3x2		
	Signal wiring	mm ²	4x0.75		
Drainage water pipe diameter			ODΦ20 IDΦ15		
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)

3. Dimension

MVL18A-VA1, MVL22A-VA1, MVL28A-VA1, MVL36A-VA1, MVL45A-VA1, MVL56A-VA1

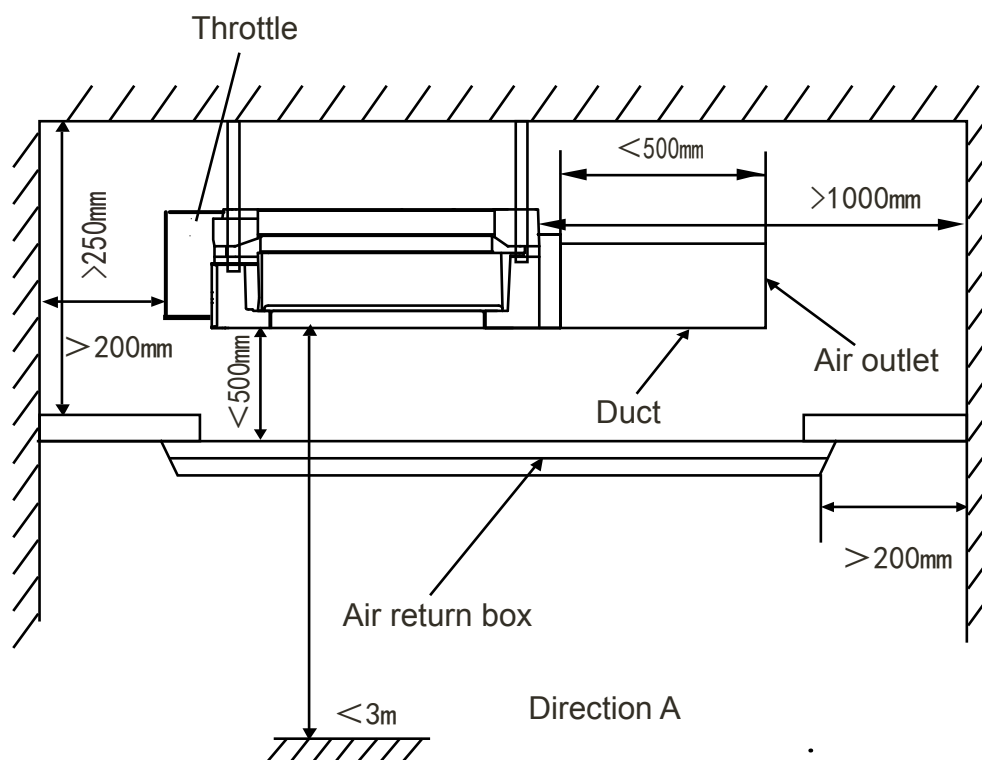
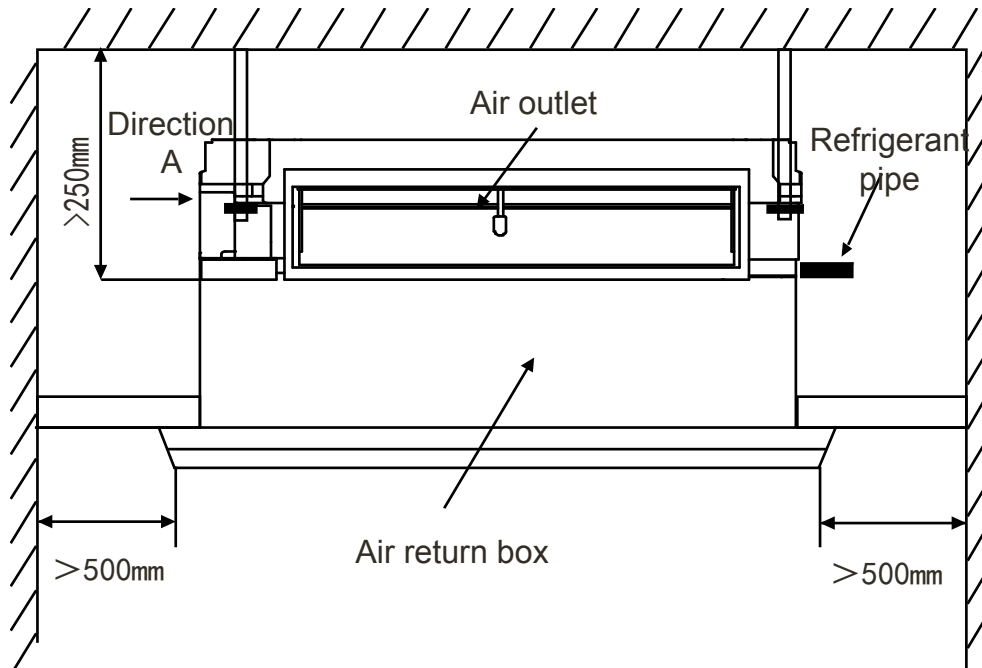


MODEL (MVL-A-VA1)	A	B	C	D	E
18	850	744	330	260	630
22	850	744	330	260	630
28	850	744	330	260	630
36	850	744	330	260	630
45	1030	894	355	285	780
56	1030	894	355	285	780

MODEL (MVL-A-VA1)	F	G	H	I	J
18	6.4	12.7	950	505	405
22	6.4	12.7	950	505	405
28	6.4	12.7	950	505	405
36	6.4	12.7	950	505	405
45	9.5	15.9	1150	530	430
56	9.5	15.9	1150	530	430

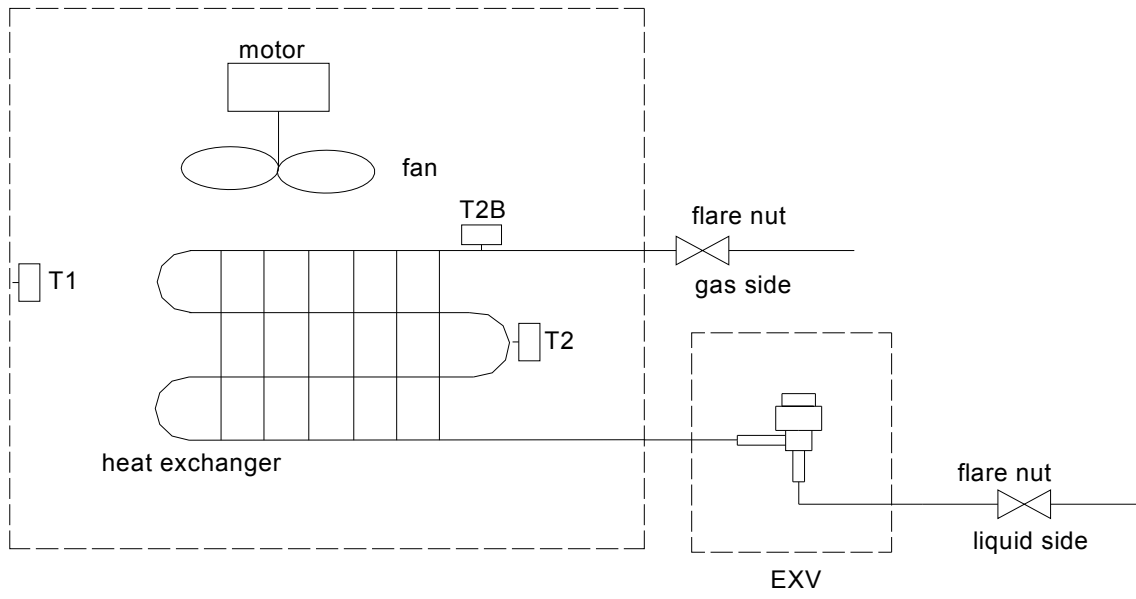
4. Service Space

- 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.



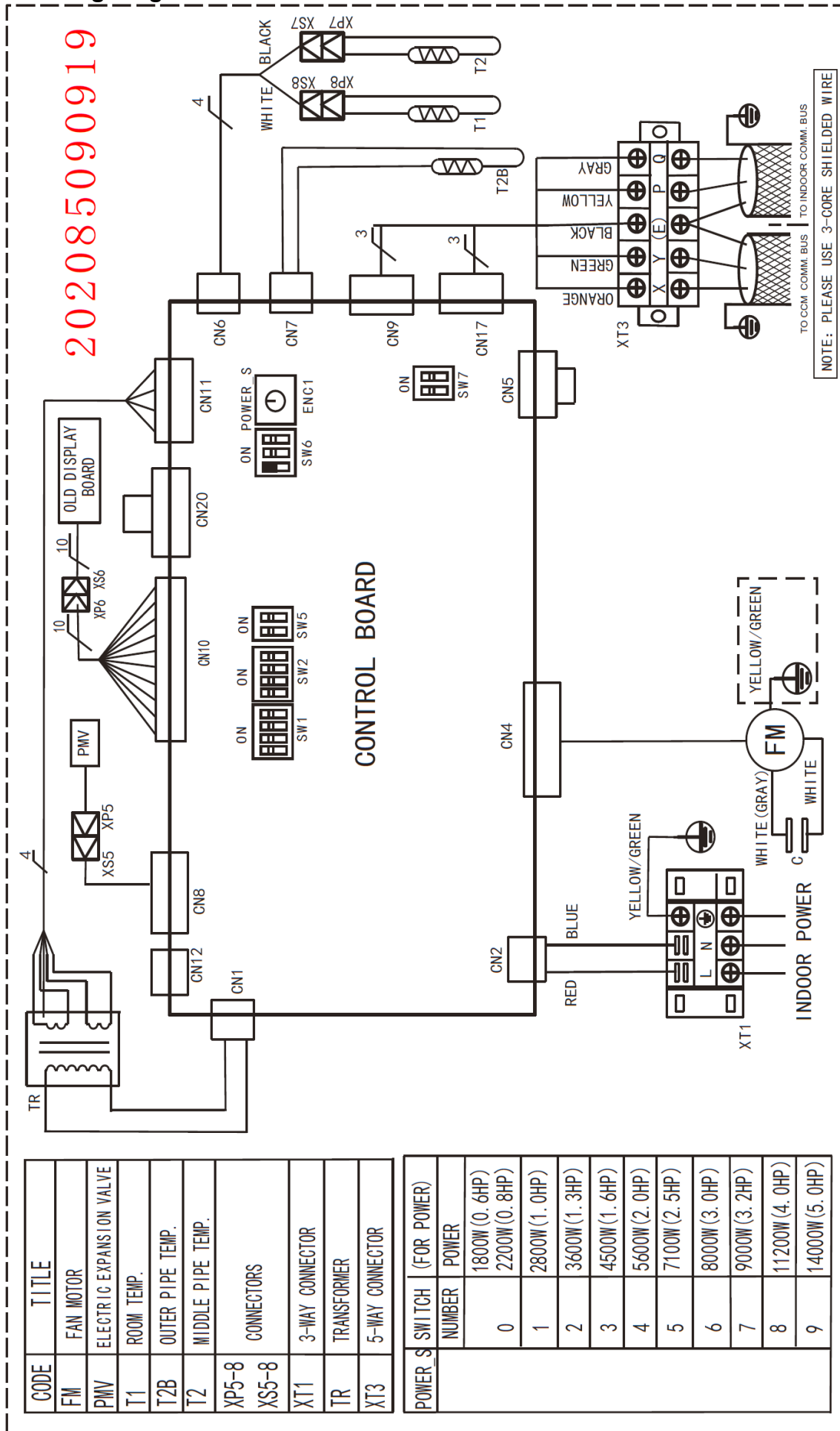
5. Piping Diagrams

MVL18A-VA1, MVL22A-VA1, MVL28A-VA1, MVL36A-VA1, MVL45A-VA1, MVL56A-VA1



6. Wiring Diagram

202085090919



CODE	TITLE
FM	FAN MOTOR
PMV	ELECTRIC EXPANSION VALVE
T1	ROOM TEMP.
T2B	OUTER PIPE TEMP.
T2	MIDDLE PIPE TEMP.
XP5-8	CONNECTORS
XS5-8	
XT1	3-WAY CONNECTOR
TR	TRANSFORMER
XT3	5-WAY CONNECTOR

POWER SWITCH NUMBER	(FOR POWER) POWER
0	1800W (0.6HP)
1	2200W (0.8HP)
2	2800W (1.0HP)
3	3600W (1.3HP)
4	4500W (1.6HP)
5	5600W (2.0HP)
6	7100W (2.5HP)
7	8000W (3.0HP)
8	9000W (3.2HP)
9	11200W (4.0HP)
	14000W (5.0HP)

7. Capacity Tables

7.1 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
1.8	10.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.4	1.3
	12.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.3	1.2
	14.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.3	1.2
	16.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.3	1.2
	18.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.3	1.2
	20.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.2	1.1
	21.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.3	2.2	1.1
	23.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.2	2.2	1.1
	25.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.2	2.1	1.1
	27.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.1	1.2	2.1	1.1
	29.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.0	1.2	2.1	1.1
	31.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.0	1.2	2.1	1.1
	33.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	2.0	1.2	2.0	1.2
	35.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	1.9	1.1	2.0	1.2
	37.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.9	1.3	1.9	1.1	1.9	1.1
	39.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.8	1.2	1.9	1.1	1.9	1.1
42.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.8	1.2	1.9	1.1	1.9	1.1	
44.0	1.2	1.1	1.5	1.1	1.7	1.2	1.8	1.2	1.8	1.2	1.9	1.1	1.9	1.1	
46.0	1.2	1.1	1.5	1.2	1.7	1.2	1.8	1.2	1.8	1.2	1.9	1.1	1.9	1.1	
2.2	10.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.9	1.5
	12.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.8	1.5
	14.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.8	1.5
	16.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.8	1.5
	18.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.8	1.4
	20.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.7	1.4
	21.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.6	1.6	2.7	1.4
	23.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.5	1.5	2.7	1.4
	25.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.5	1.5	2.6	1.4
	27.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.5	1.5	2.6	1.4
	29.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.4	1.4	2.5	1.4
	31.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.4	1.4	2.5	1.4
	33.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.4	1.4	2.4	1.4
	35.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.3	1.3	2.4	1.4
	37.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.3	1.6	2.3	1.3	2.3	1.4
	39.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.2	1.5	2.3	1.3	2.3	1.4
42.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.2	1.5	2.3	1.3	2.3	1.4	
44.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.2	1.5	2.3	1.3	2.3	1.4	
46.0	1.5	1.3	1.8	1.4	2.1	1.5	2.2	1.5	2.2	1.5	2.3	1.3	2.3	1.4	
2.8	10.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.7	2.0
	12.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.6	2.0
	14.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.6	2.0
	16.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.5	1.9
	18.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.5	1.9
	20.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.4	1.9
	21.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.4	1.9

	23.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.3	2.0	3.4	1.9
	25.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.2	1.9	3.3	1.9
	27.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.2	1.9	3.3	1.9
	29.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.1	1.8	3.2	1.8
	31.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.1	1.8	3.2	1.7
	33.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	3.0	1.9	3.1	1.8	3.1	1.7
	35.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	2.9	1.9	3.0	1.8	3.1	1.7
	37.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	2.9	1.9	3.0	1.8	3.0	1.7
	39.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	2.9	1.9	3.0	1.9	3.0	1.7
	42.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	2.9	1.9	3.0	1.9	3.0	1.7
	44.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	2.9	1.9	3.0	1.9	3.0	1.7
	46.0	1.9	1.6	2.3	1.8	2.6	1.9	2.8	1.9	2.9	1.9	3.0	1.9	3.0	1.7
3.6	10.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.7	2.5
	12.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.7	2.5
	14.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.6	2.4
	16.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.5	2.4
	18.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.5	2.4
	20.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.4	2.3
	21.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.3	2.4	4.4	2.3
	23.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.1	2.3	4.3	2.2
	25.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.1	2.3	4.2	2.2
	27.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.0	2.2	4.2	2.2
	29.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.0	2.2	4.1	2.2
	31.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.2	2.6	4.1	2.2
	33.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.2	2.6	3.9	2.1
	35.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.8	2.5	4.2	2.6	3.9	2.1
	37.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.7	2.4	3.8	2.3	3.9	2.1
	39.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.7	2.4	3.8	2.3	3.8	2.1
42.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.7	2.4	3.8	2.3	3.8	2.1	
44.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.7	2.4	3.8	2.3	3.8	2.1	
46.0	2.5	1.9	2.9	2.1	3.4	2.3	3.6	2.4	3.7	2.4	3.8	2.3	3.8	2.1	
4.5	10.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.9	3.0
	12.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.9	3.0
	14.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.8	3.0
	16.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.6	2.9
	18.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.7	3.0
	20.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.7	3.0
	21.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.6	3.0
	23.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.3	3.4	5.5	3.0
	25.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.2	3.0	5.4	2.9
	27.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.1	3.0	5.2	2.8
	29.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.1	2.9	5.2	2.8
	31.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	5.0	2.9	5.1	2.7
	33.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	4.9	2.8	5.1	2.7
	35.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	4.8	2.8	5.0	2.7
	37.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.8	3.0	4.8	2.9	4.9	2.6
	39.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.6	2.8	4.7	2.8	4.8	2.6
42.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.6	2.8	4.7	2.8	4.8	2.6	
44.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.6	2.8	4.7	2.8	4.8	2.6	
46.0	3.1	2.4	3.7	2.6	4.2	2.8	4.5	2.9	4.6	2.8	4.7	3.1	4.8	2.6	
5.6	10.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	7.3	3.5
	12.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	7.2	3.5

14.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	7.1	3.5
16.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	7.0	3.4
18.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	6.8	3.4
20.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	6.7	3.3
21.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	6.6	3.3
23.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	6.6	3.3
25.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.6	3.6	6.5	3.2
27.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.4	3.5	6.4	3.2
29.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.3	3.5	6.4	3.3
31.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.2	3.4	6.2	3.2
33.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.2	3.4	6.2	3.2
35.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	6.0	3.3	6.0	3.1
37.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.9	3.5	5.9	3.2	6.0	3.1
39.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.7	3.4	5.8	3.2	6.0	3.1
42.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.7	3.4	5.8	3.2	6.0	3.1
44.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.7	3.4	5.8	3.2	6.0	3.1
46.0	3.9	2.7	4.6	3.0	5.3	3.3	5.6	3.4	5.7	3.7	5.8	3.2	6.0	3.1

7.2 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
1.8	-20	-19.8	1.23	1.23	1.23	1.23	1.23	1.23
	-19	-18.8	1.32	1.32	1.32	1.32	1.32	1.32
	-17	-16.7	1.39	1.39	1.39	1.39	1.39	1.39
	-15	-14.7	1.43	1.43	1.43	1.43	1.43	1.43
	-13.00	-12.60	1.52	1.52	1.52	1.52	1.52	1.52
	-11.00	-10.50	1.54	1.56	1.56	1.56	1.56	1.56
	-10.00	-9.50	1.61	1.61	1.61	1.61	1.61	1.61
	-9.10	-8.50	1.65	1.65	1.65	1.65	1.65	1.65
	-7.60	-7.00	1.67	1.67	1.67	1.67	1.67	1.67
	-5.60	-5.00	1.74	1.74	1.74	1.74	1.74	1.74
	-3.70	-3.00	1.83	1.83	1.83	1.83	1.83	1.83
	-0.70	0.00	1.96	1.96	1.96	1.96	1.96	1.85
	2.20	3.00	2.07	2.07	2.07	2.07	2.02	1.85
	4.10	5.00	2.13	2.13	2.13	2.13	2.02	1.85
	6.00	7.00	2.20	2.20	2.20	2.13	2.02	1.85
	7.90	9.00	2.27	2.27	2.20	2.13	2.02	1.85
9.80	11.00	2.33	2.33	2.20	2.13	2.02	1.85	
11.80	13.00	2.42	2.38	2.20	2.13	2.02	1.85	
13.70	15.00	2.49	2.38	2.20	2.13	2.02	1.85	
2.2	-20	-19.8	1.46	1.46	1.46	1.46	1.46	1.46
	-19	-18.8	1.56	1.56	1.56	1.56	1.56	1.56
	-17	-16.7	1.64	1.64	1.64	1.64	1.64	1.64
	-15	-14.7	1.69	1.69	1.69	1.69	1.69	1.69
	-13.00	-12.60	1.79	1.79	1.79	1.79	1.79	1.79
	-11.00	-10.50	1.82	1.85	1.85	1.85	1.85	1.85
	-10.00	-9.50	1.90	1.90	1.90	1.90	1.90	1.90
	-9.10	-8.50	1.95	1.95	1.95	1.95	1.95	1.95
	-7.60	-7.00	1.98	1.98	1.98	1.98	1.98	1.98
	-5.60	-5.00	2.05	2.05	2.05	2.05	2.05	2.05
	-3.70	-3.00	2.16	2.16	2.16	2.16	2.16	2.16
	-0.70	0.00	2.31	2.31	2.31	2.31	2.31	2.18
	2.20	3.00	2.44	2.44	2.44	2.44	2.39	2.18
	4.10	5.00	2.52	2.52	2.52	2.52	2.39	2.18
	6.00	7.00	2.60	2.60	2.60	2.52	2.39	2.18
	7.90	9.00	2.68	2.68	2.60	2.52	2.39	2.18
9.80	11.00	2.76	2.76	2.60	2.52	2.39	2.18	
11.80	13.00	2.86	2.81	2.60	2.52	2.39	2.18	
13.70	15.00	2.94	2.81	2.60	2.52	2.39	2.18	
2.8	-20	-19.8	1.79	1.79	1.79	1.79	1.79	1.79
	-19	-18.8	1.92	1.92	1.92	1.92	1.92	1.92
	-17	-16.7	2.02	2.02	2.02	2.02	2.02	2.02
	-15	-14.7	2.02	2.02	2.02	2.02	2.02	2.02
	-13.00	-12.60	2.14	2.14	2.14	2.14	2.14	2.14
	-11.00	-10.50	2.24	2.24	2.24	2.24	2.24	2.24
	-10.00	-9.50	2.34	2.34	2.34	2.34	2.34	2.34
	-9.10	-8.50	2.40	2.40	2.40	2.40	2.40	2.40
	-7.60	-7.00	2.43	2.43	2.43	2.43	2.43	2.43
	-5.60	-5.00	2.53	2.53	2.53	2.53	2.53	2.53
	-3.70	-3.00	2.66	2.66	2.66	2.66	2.66	2.66
	-0.70	0.00	2.85	2.85	2.85	2.85	2.85	2.69
	2.20	3.00	3.01	3.01	3.01	3.01	2.94	2.69
	4.10	5.00	3.10	3.10	3.10	3.10	2.94	2.69
	6.00	7.00	3.20	3.20	3.20	3.10	2.94	2.69
	7.90	9.00	3.30	3.30	3.20	3.10	2.94	2.69
9.80	11.00	3.39	3.39	3.20	3.10	2.94	2.69	
11.80	13.00	3.52	3.46	3.20	3.10	2.94	2.69	
13.70	15.00	3.62	3.46	3.20	3.10	2.94	2.69	
3.6	-20	-19.8	2.24	2.24	2.24	2.24	2.24	2.24

	-19	-18.8	2.40	2.40	2.40	2.40	2.40	2.40
	-17	-16.7	2.52	2.52	2.52	2.52	2.52	2.52
	-15	-14.7	2.60	2.60	2.60	2.60	2.60	2.60
	-13.00	-12.60	2.68	2.68	2.68	2.68	2.68	2.68
	-11.00	-10.50	2.80	2.80	2.80	2.80	2.80	2.80
	-10.00	-9.50	2.92	2.92	2.92	2.92	2.92	2.92
	-9.10	-8.50	3.00	3.00	3.00	3.00	3.00	3.00
	-7.60	-7.00	3.04	3.04	3.04	3.04	3.04	3.04
	-5.60	-5.00	3.16	3.16	3.16	3.16	3.16	3.16
	-3.70	-3.00	3.32	3.32	3.32	3.32	3.32	3.32
	-0.70	0.00	3.56	3.56	3.56	3.56	3.56	3.36
	2.20	3.00	3.76	3.76	3.76	3.76	3.68	3.36
	4.10	5.00	3.88	3.88	3.88	3.88	3.68	3.36
	6.00	7.00	4.00	4.00	4.00	3.88	3.68	3.36
	7.90	9.00	4.12	4.12	4.00	3.88	3.68	3.36
9.80	11.00	4.24	4.24	4.00	3.88	3.68	3.36	
11.80	13.00	4.40	4.32	4.00	3.88	3.68	3.36	
13.70	15.00	4.52	4.32	4.00	3.88	3.68	3.36	
4.5	-20	-19.8	2.80	2.80	2.80	2.80	2.80	2.80
	-19	-18.8	3.00	3.00	3.00	3.00	3.00	3.00
	-17	-16.7	3.15	3.15	3.15	3.15	3.15	3.15
	-15	-14.7	3.25	3.25	3.25	3.25	3.25	3.25
	-13.00	-12.60	3.35	3.35	3.35	3.35	3.35	3.35
	-11.00	-10.50	3.50	3.50	3.50	3.50	3.50	3.50
	-10.00	-9.50	3.65	3.65	3.65	3.65	3.65	3.65
	-9.10	-8.50	3.75	3.75	3.75	3.75	3.75	3.75
	-7.60	-7.00	3.80	3.80	3.80	3.80	3.80	3.80
	-5.60	-5.00	3.95	3.95	3.95	3.95	3.95	3.95
	-3.70	-3.00	4.15	4.15	4.15	4.15	4.15	4.15
	-0.70	0.00	4.45	4.45	4.45	4.45	4.45	4.20
	2.20	3.00	4.70	4.70	4.70	4.70	4.60	4.20
	4.10	5.00	4.85	4.85	4.85	4.85	4.60	4.20
	6.00	7.00	5.00	5.00	5.00	4.85	4.60	4.20
7.90	9.00	5.15	5.15	5.00	4.85	4.60	4.20	
9.80	11.00	5.30	5.30	5.00	4.85	4.60	4.20	
11.80	13.00	5.50	5.40	5.00	4.85	4.60	4.20	
13.70	15.00	5.65	5.40	5.00	4.85	4.60	4.20	
5.6	-20	-19.8	3.53	3.53	3.53	3.53	3.53	3.53
	-19	-18.8	3.78	3.78	3.78	3.78	3.78	3.78
	-17	-16.7	3.97	3.97	3.97	3.97	3.97	3.97
	-15	-14.7	4.10	4.10	4.10	4.10	4.10	4.10
	-13.00	-12.60	4.22	4.22	4.22	4.22	4.22	4.22
	-11.00	-10.50	4.41	4.41	4.41	4.41	4.41	4.41
	-10.00	-9.50	4.60	4.60	4.60	4.60	4.60	4.60
	-9.10	-8.50	4.73	4.73	4.73	4.73	4.73	4.73
	-7.60	-7.00	4.79	4.79	4.79	4.79	4.79	4.79
	-5.60	-5.00	4.98	4.98	4.98	4.98	4.98	4.98
	-3.70	-3.00	5.23	5.23	5.23	5.23	5.23	5.23
	-0.70	0.00	5.61	5.61	5.61	5.61	5.61	5.29
	2.20	3.00	5.92	5.92	5.92	5.92	5.80	5.29
	4.10	5.00	6.11	6.11	6.11	6.11	5.80	5.29
	6.00	7.00	6.30	6.30	6.30	6.11	5.80	5.29
7.90	9.00	6.49	6.49	6.30	6.11	5.80	5.29	
9.80	11.00	6.68	6.68	6.30	6.11	5.80	5.29	
11.80	13.00	6.93	6.80	6.30	6.11	5.80	5.29	
13.70	15.00	7.12	6.80	6.30	6.11	5.80	5.29	
7.1	-20	-19.8	4.48	4.48	4.48	4.48	4.48	4.48
	-19	-18.8	4.80	4.80	4.80	4.80	4.80	4.80
	-17	-16.7	5.04	5.04	5.04	5.04	5.04	5.04
	-15	-14.7	5.20	5.20	5.20	5.20	5.20	5.20
	-13.00	-12.60	5.36	5.36	5.36	5.36	5.36	5.36
	-11.00	-10.50	5.60	5.60	5.60	5.60	5.60	5.60
	-10.00	-9.50	5.84	5.84	5.84	5.84	5.84	5.84
	-9.10	-8.50	6.00	6.00	6.00	6.00	6.00	6.00
-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	8.00	8.00	8.00	7.76	7.36	6.72
	7.90	9.00	8.24	8.24	8.00	7.76	7.36	6.72
	9.80	11.00	8.48	8.48	8.00	7.76	7.36	6.72
	11.80	13.00	8.80	8.64	8.00	7.76	7.36	6.72
	13.70	15.00	9.04	8.64	8.00	7.76	7.36	6.72

8. Electric Characteristics

Model	Indoor Unit				Power Supply		IFM	
	Hz	Voltage	Min.	Max.	MCA	MFA	KW	FLA
MVL18A-VA1	50	230	207	253	0.175	15	0.03	0.14
MVL22A-VA1	50	230	207	253	0.175	15	0.03	0.14
MVL28A-VA1	50	230	207	253	0.187	15	0.032	0.15
MVL36A-VA1	50	230	207	253	0.175	15	0.032	0.15
MVL45A-VA1	50	230	207	253	0.35	15	0.053	0.28
MVL56A-VA1	50	230	207	253	0.35	15	0.053	0.28

Remark:

MCA: Min. Current Amps. (A)

MFA: Max. Fuse Amps. (A)

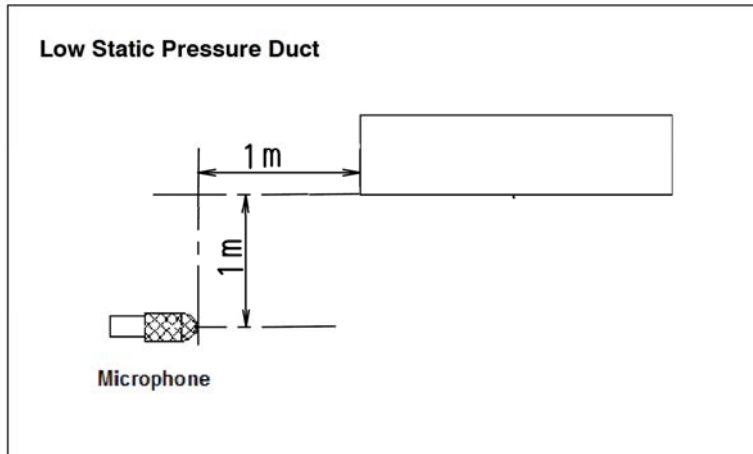
KW: Fan Motor Rated Output (kW)

FLA: Full Load Amps. (A)

IFM:Indoor Fan Motor

9. Noise Levels

9.1 Test condition

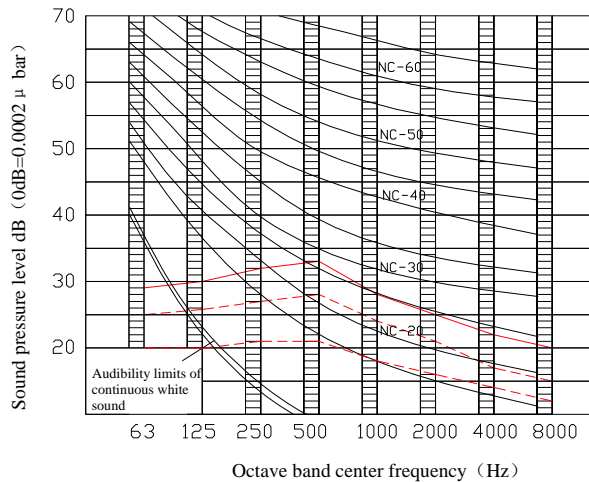
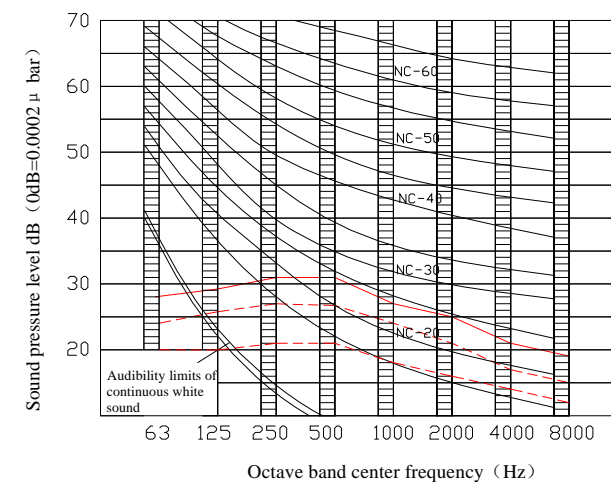


9.2 Test value

Model	Noise test value dB(A)		
	Hi	Mid	Low
MVL18A-VA1	33	27	21
MVL22A-VA1	34	29	21
MVL28A-VA1	36	34	30
MVL36A-VA1	36	34	30
MVL45A-VA1	37	35	31
MVL56A-VA1	37	35	31

MVL18A-VA1

MVL22A-VA1



MVL28(36)A-VA1

MVL45(56)A-VA1

