

Engineering Data

Medium Static Pressure Duct

VRF IDU



MDV-D22T2/N1-DA5(B)

MDV-D28T2/N1-DA5(B)

MDV-D36T2/N1-DA5(B)

MDV-D45T2/N1-DA5(B)

MDV-D56T2/N1-DA5(B)

MDV-D71T2/N1-DA5(B)



MDV-D80T2/N1-BA5(B)

MDV-D90T2/N1-BA5(B)

MDV-D112T2/N1-BA5(B)

MDV-D140T2/N1-BA5(B)

Medium Static Pressure Duct

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1 Specifications

MDV- D22T2/N1-DA5(B) / MDV- D28T2/N1-DA5(B) / MDV- D36T2/N1-DA5(B)

Table 1.1: MDV-D22(28, 36)T2/N1-DA5(B) specifications

Model			MDV-D22T2/N1-DA5(B)	MDV-D28T2/N1-DA5(B)	MDV-D36T2/N1-DA5(B)
Power supply			1 phase, 220-240V, 50Hz		
Cooling ¹	Capacity	kW	2.2	2.8	3.6
		kBtu/h	7.5	9.6	12.3
	Power input	W	57	57	61
Heating ²	Capacity	kW	2.6	3.2	4.0
		kBtu/h	8.9	10.9	13.7
	Power input	W	57	57	61
Fan motor	Type	AC			
	Number	1			
Indoor coil	Number of rows		2	2	2
	Tube pitch × row pitch	mm	21×13.37		
	Fin spacing	mm	1.5	1.5	1.5
	Fin type		Hydrophilic aluminum		
	Tube OD and type	mm	Φ7 Inner-groove		
	Dimensions (L×H ×W)	mm	515×147×26.74	515×147×26.74	515×147×26.74
	Number of circuits		3	3	3
Air flow rate(H/M/L)		m ³ /h	550/397/309	550/397/309	605/442/351
Sound pressure level(H/M/L)		dB(A)	32/24/21	31/24/21	35/28/24
Sound power level(H/M/L)		dB(A)	45/37/34	44/37/34	48/41/37
Indoor external static pressure		Pa	10(0~30)	10(0~30)	10(0~30)
Indoor unit	Net dimensions (W×H×D)		778x210x500		
	Packed dimensions(W×H×D)		870×285×525		
	Net/Gross weight		kg	17.5/20	17.5/20
Refrigerant type			R410A		
Pipe connections	Liquid/Gas pipe	mm	Φ6.35/ Φ12.7		
	Drain pipe	mm	OD Φ25		

Notes:

1. Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
2. Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5m with zero level difference.

MDV- D45T2/N1-DA5(B) / MDV- D56T2/N1-DA5(B) / MDV- D71T2/N1-DA5(B)

Table 1.2: MDV-D45(56, 71)T2/N1-DA5(B) specifications

Model			MDV-D45T2/N1-DA5(B)	MDV-D56T2/N1-DA5(B)	MDV-D71T2/N1-DA5(B)
Power supply			1 phase, 220-240V, 50Hz		
Cooling ¹	Capacity	kW	4.5	5.6	7.1
		kBtu/h	15.4	19.1	24.2
	Power input	W	98	103	140
Heating ²	Capacity	kW	5	6.3	8
		kBtu/h	17.1	21.5	27.3
	Power input	W	98	103	140
Fan motor	Type		AC		
	Number		1		
Indoor coil	Number of rows		2		
	Tube pitch × row pitch	mm	21×13.37		
	Fin spacing	mm	1.3		
	Fin type		Hydrophilic aluminum		
	Tube OD and type	mm	Φ7 Inner-groove		
	Dimensions (L×H×W)	mm	734×147×26.74	734×147×26.74	953×147×26.74
	Number of circuits		6		
Air flow rate(H/M/L)		m ³ /h	800/573/479	800/573/479	985/738/630
Sound pressure level(H/M/L)		dB(A)	36/29/26	36/29/27	36/30/27
Sound power level(H/M/L)		dB(A)	49/43/39	49/42/40	49/43/40
Indoor external static pressure		Pa	10(0~30)	10(0~30)	10(0~30)
Indoor unit	Net dimensions (W×H×D)	mm	997×210×500	997×210×500	1218×210×500
	Packed dimensions (W×H×D)	mm	1115×285×525	1115×285×525	1335×285×525
	Net/Gross weight	kg	22/25	22/25	27.5/31
Refrigerant type			R410A		
Pipe connections	Liquid/Gas pipe	mm	Φ6.35/ Φ12.7	Φ9.53/ Φ15.9	Φ9.53/Φ15.9
	Drain pipe	mm	OD Φ25		

Notes:

- Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
- Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5m with zero level difference.

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MDV-D80T2/N1-BA5(B) / MDV-D90T2/N1-BA5(B)

Table 1.3: MDV-D80(90)T2/N1-BA5(B) specifications

Model			MDV-D80T2/N1-BA5(B)	MDV-D90T2/N1-BA5(B)	
Power supply			1 phase, 220-240V, 50Hz		
Cooling ¹	Capacity	kW	8.0	9.0	
		kBtu/h	27.3	30.7	
	Power input	W	198	200	
Heating ²	Capacity	kW	9.0	10.0	
		kBtu/h	30.7	34.1	
	Power input	W	198	200	
Fan motor	Type	AC			
	Number	1			
Indoor coil	Number of rows		4	4	
	Tube pitch × row pitch	mm	21×13.5	21×13.5	
	Fin spacing	mm	1.5	1.5	
	Fin type		Hydrophilic aluminum		
	Tube OD and type	mm	Φ7 Inner-groove		
	Dimensions (L×H×W)	mm	955×336×53.5	955×336×53.5	
	Number of circuits		5	8	
Air flow rate(H/M/L)		m ³ /h	1345/1165/1013	1345/1165/1013	
Sound pressure level(H/M/L)		dB(A)	45/40/37	45/40/37	
Sound power level(H/M/L)		dB(A)	58/53/50	58/53/50	
*Indoor external static pressure		Pa	20(10~50)	20(10~50)	
Indoor unit	Net dimensions (W×H×D)		mm	1230×270×775	
	Packed dimensions (W×H×D)		mm	1355×350×795	
	Net/Gross weight		kg	37.5/43	
Refrigerant type			R410A		
Pipe connections	Liquid/Gas pipe	mm	Φ9.53/Φ15.9		
	Drain pipe	mm	OD Φ25		

Notes:

- Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
- Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
- *This is the available static pressure range which means the unit can run stably in this static pressure range, and the optimal static pressure range please refers to the Installation Manual. When choosing any static pressure which is out of optimal static pressure range, risk like bigger noise, lower air flow volume etc. should be considered in advanced.

MDV-D112T2/N1-BA5(B) / MDV-D140T2/N1-BA5(B)

Table 1.3: MDV-D112(140)T2/N1-BA5(B) specifications

Model			MDV-D112T2/N1-BA5(B)	MDV-D140T2/N1-BA5(B)	
Power supply			1 phase, 220-240V, 50Hz		
Cooling ¹	Capacity	kW	11.2	14.0	
		kBtu/h	38.2	47.8	
	Power input	W	313	274	
Heating ²	Capacity	kW	12.5	15.5	
		kBtu/h	42.7	52.9	
	Power input	W	313	274	
Fan motor	Type	AC			
	Number	1			
Indoor coil	Number of rows		4	4	
	Tube pitch × row pitch	mm	21×13.5	21×13.5	
	Fin spacing	mm	1.5	1.5	
	Fin type		Hydrophilic aluminum		
	Tube OD and type	mm	Φ7 Inner-groove		
	Dimensions (L×H×W)	mm	955×336×53.5	1030×378×53.5	
	Number of circuits		8	8	
Air flow rate(H/M/L)		m ³ /h	1800/1556/1400	1905/1636/1400	
Sound pressure level(H/M/L)		dB(A)	48/42/38	48/43/39	
Sound power level(H/M/L)		dB(A)	61/55/51	61/56/52	
*Indoor external static pressure		Pa	40(10~80)	40(10~100)	
Indoor unit	Net dimensions (W×H×D)		mm	1230×270×775	1290×300×865
	Packed dimensions (W×H×D)		mm	1355×350×795	1400×375×925
	Net/Gross weight		kg	37.5/43	46.5/55.5
Refrigerant type			R410A		
Pipe connections	Liquid/Gas pipe	mm	Φ9.53/Φ15.9		
	Drain pipe	mm	OD Φ25		

Notes:

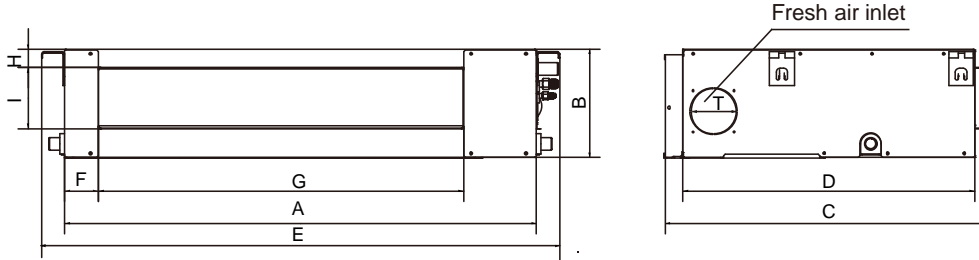
- Indoor temperature 27°C DB, 19°C WB; outdoor temperature 35°C DB; equivalent refrigerant piping length 7.5m with zero level difference.
- Indoor temperature 20°C DB; outdoor temperature 7°C DB, 6°C WB; equivalent refrigerant piping length 7.5m with zero level difference.
- *This is the available static pressure range which means the unit can run stably in this static pressure range, and the optimal static pressure range please refers to the Installation Manual. When choosing any static pressure which is out of optimal static pressure range, risk like bigger noise, lower air flow volume etc. should be considered in advanced.

2 Dimensions

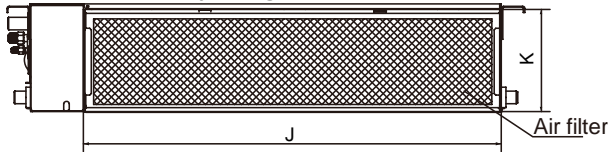
2.1 Unit Dimensions

Figure 2.1: Medium Static Pressure Duct dimensions (unit: mm)

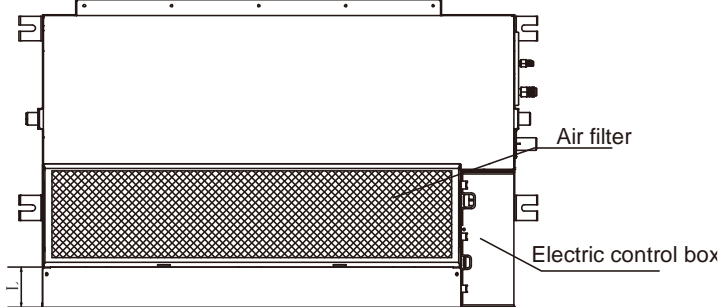
External dimensions and size of air outlet opening:



Size of air inlet opening (air intake from rear):



Size of air inlet opening (air intake from below):



Distance between the lugs:

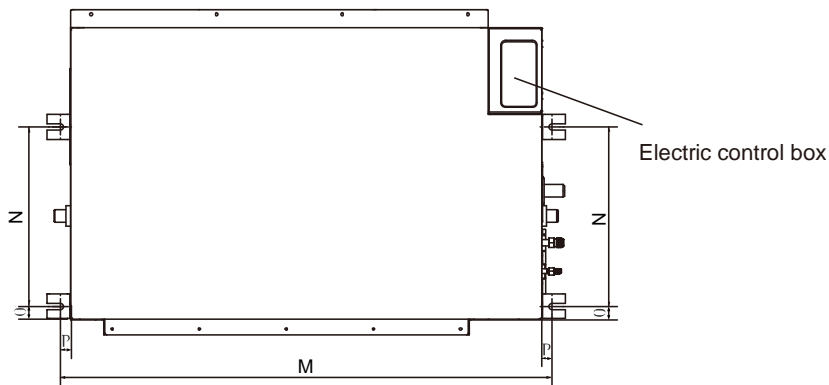


Table 2.1: 2.2-14.0kW Medium Static Pressure Duct External dimensions and size of air outlet opening (unit: mm)

Model names	External dimensions (mm)					Size of air outlet opening (mm)			
	A	B	C	D	E	F	G	H	I
MDV-D22(28,36)T2/N1-DA5(B)	700	210	500	450	780	45	512	17	145
MDV-D45(56)T2/N1-DA5(B)	920	210	500	450	1000	45	732	17	145
MDV-D71T2/N1-DA5(B)	1140	210	500	450	1220	45	950	17	145
MDV-D80(90,112)T2/N1-BA5(B)	1140	270	710	710	1230	65	933	35	179
MDV-D140T2/N1-BA5(B)	1200	300	800	800	1290	85	969	40	204

Table 2.2: 2.2-14.0kW Medium Static Pressure Duct Size of air inlet opening and spacing between lugs (unit: mm)

Model names	Size of air inlet opening (mm)			Spacing between lugs (mm)				Fresh air inlet diameter
	J	K	L	M	N	O	P	
MDV-D22(28,36)T2/N1-DA5(B)	600	196	-	740	350	35	20	Φ92
MDV-D45(56)T2/N1-DA5(B)	820	200	-	960	350	35	20	Φ92
MDV-D71T2/N1-DA5(B)	1040	200	-	1180	350	35	20	Φ92
MDV-D80(90,112)T2/N1-BA5(B)	1035	260	20	1180	490	26	20	Φ125
MDV-D140T2/N1-BA5(B)	1094	288	45	1240	500	26	20	Φ125

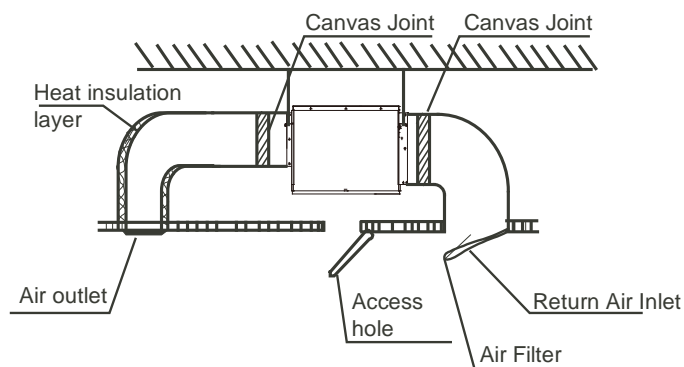
3 Unit Placement

3.1 Placement Considerations

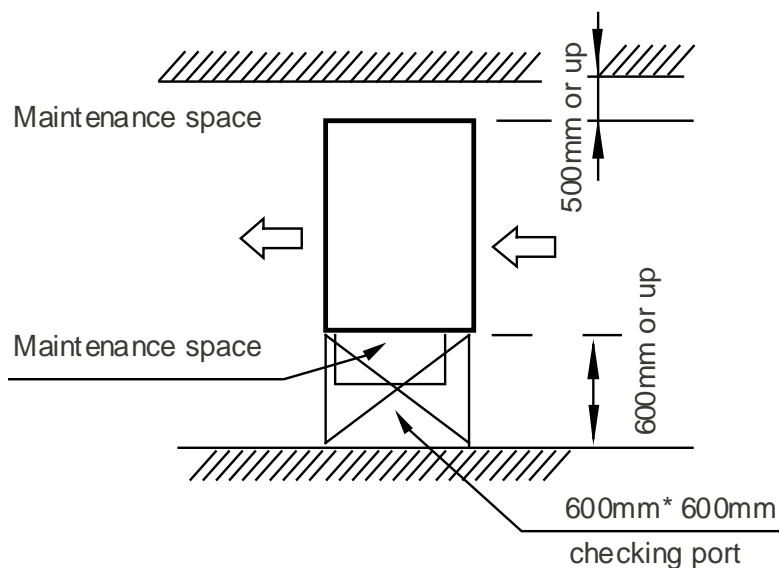
- Unit placement should take account of the following considerations:
 - Ensure the needed spaces for installation and maintenance.
 - The ceiling is horizontal, and its structure can endure the weight of the indoor unit.
 - The outlet and the inlet are not impeded.
 - The air flow can reach throughout the room.
 - The connecting pipe and drainpipe could be extracted out easily.
 - There is no direct radiation from heaters.

3.2 Space Requirements

- Below is the recommended duct installation method:

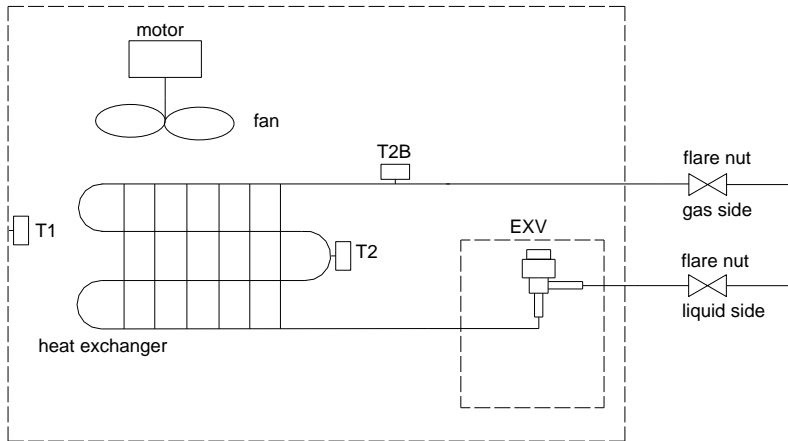


- Keep min. 600(mm)*600(mm) space for checking & maintenance:



4 Piping Diagram

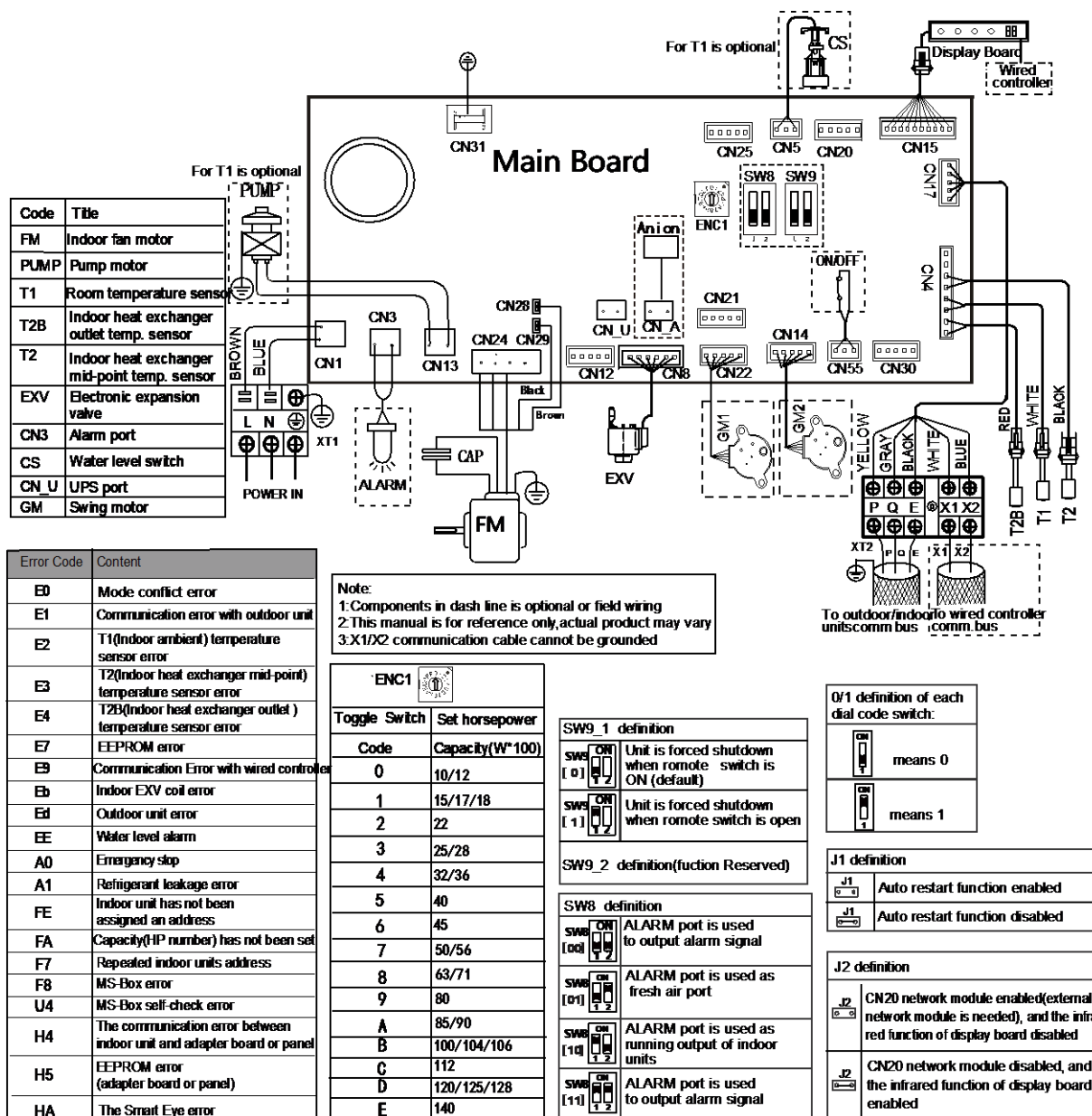
Figure 4.1: 2.2-14.0kW Medium Static Pressure Duct piping diagram



Legend	
T1	Indoor ambient temperature sensor
T2	Indoor heat exchanger mid-point temperature sensor
T2B	Indoor heat exchanger outlet temperature sensor

5 Wiring Diagram

Figure 5.1: 2.2-14.0kW Medium Static Pressure Duct wiring diagram



6 Fan Performance

6.1 How to Read the Diagram

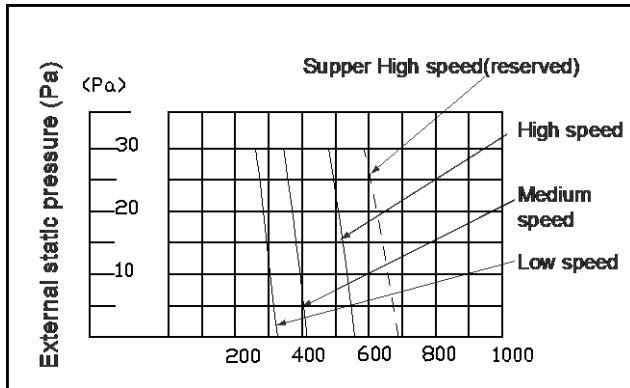
The vertical axis is the External Static Pressure (Pa) while the horizontal axis represents the Air Flow (m³/h). The characteristic curve for the "SH," "H," "M," and "L" fan speed control, The nameplate values are shown based on the "H" air flow.

Therefore in the case of 80/90T2Type, the air flow is 900 m³/h, while the External Static Pressure is 80Pa at "H" position. If 90Pa needed, the airflow is at 'SH'.

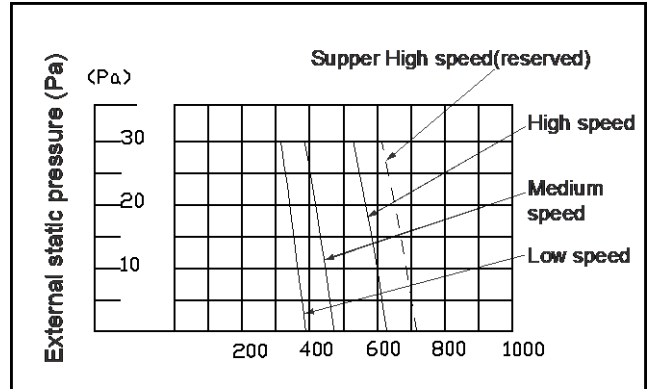
6.2 Medium Static Pressure Duct fan performance diagram

Table 6.1: MDV-D22(28)T2/N1-DA5(B) fan performance diagram

Table 6.2: MDV-D36T2/N1-DA5(B) fan performance diagram



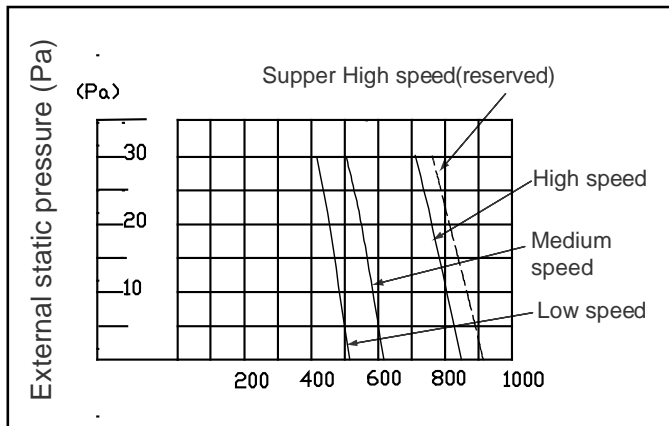
2.2KW~2.8KW



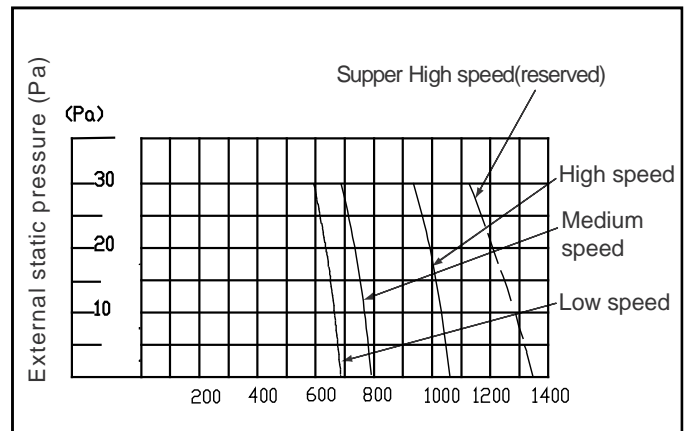
3.6KW

Table 6.3: MDV-D45(56)T2/N1-DA5(B) fan performance diagram

Table 6.4: MDV-D71T2/N1-DA5(B) fan performance diagram



4.5KW~5.6KW



7.1KW

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Table 6.5: MDV-D80(90)T2/N1-BA5(B) fan performance diagram

Table 6.6: MDV-D112T2/N1-BA5(B) fan performance diagram

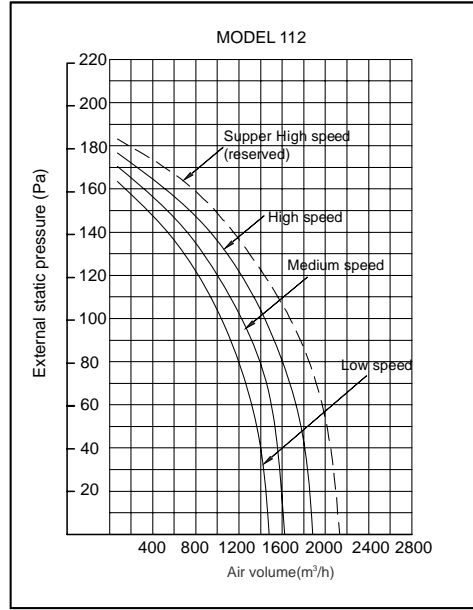
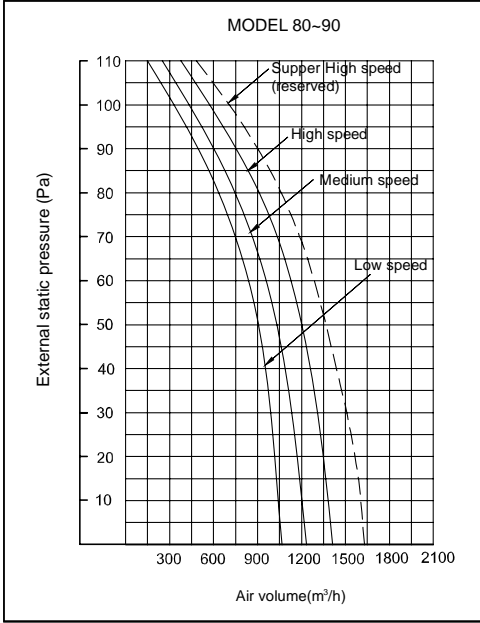
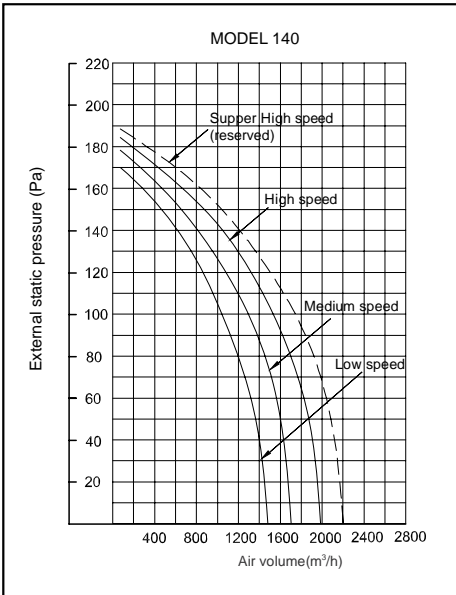


Table 6.7: MDV-D140T2/N1-BA5(B) fan performance diagram



7 Capacity Tables

7.1 Cooling Capacity Table

Table 7.1: Medium Static Pressure Duct cooling capacity

Model	Indoor air temperature (°C 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
MDV-D22T2/N1-DA5(B)	2.0	2.0	2.1	2.0	2.2	1.9	2.2	1.8	2.3	1.8	2.3	1.7	2.4	1.7
MDV-D28T2/N1-DA5(B)	2.5	2.5	2.7	2.5	2.8	2.4	2.8	2.3	2.9	2.3	2.9	2.2	3.0	2.1
MDV-D36T2/N1-DA5(B)	3.2	3.2	3.4	3.1	3.6	3.1	3.6	3.0	3.7	3.0	3.8	2.8	3.9	2.7
MDV-D45T2/N1-DA5(B)	4.0	3.9	4.3	3.9	4.5	3.9	4.5	3.7	4.6	3.6	4.7	3.5	4.8	3.3
MDV-D56T2/N1-DA5(B)	5.0	4.9	5.3	4.8	5.6	4.8	5.6	4.6	5.7	4.5	5.8	4.3	6.0	4.1
MDV-D71T2/N1-DA5(B)	6.3	6.1	6.7	6.1	7.0	6.0	7.1	5.8	7.2	5.7	7.4	5.4	7.6	5.2
MDV-D80T2/N1-BA5(B)	7.1	6.7	7.6	6.7	7.9	6.7	8.0	6.5	8.1	6.3	8.3	6.0	8.5	5.8
MDV-D90T2/N1-BA5(B)	8.0	7.5	8.5	7.5	8.9	7.5	9.0	7.3	9.1	7.1	9.4	6.8	9.6	6.5
MDV-D112T2/N1-BA5(B)	9.9	9.3	10.6	9.4	11.1	9.4	11.2	9.1	11.3	8.8	11.6	8.4	11.9	8.1
MDV-D140T2/N1-BA5(B)	12.4	11.6	13.2	11.7	13.8	11.6	14.0	11.3	14.2	11.0	14.5	10.5	14.9	10.1

Abbreviations:

TC: Total capacity (kW)

SC: Sensible capacity(kW)

Notes:

1. Shaded cells indicate rated condition.

7.2 Heating Capacity Table

Table 7.2: Medium Static Pressure Duct heating capacity

Model	Indoor air temperature (°C DB)					
	16	18	20	21	22	24
	TC	TC	TC	TC	TC	TC
MDV-D22T2/N1-DA5(B)	2.8	2.8	2.6	2.5	2.4	2.3
MDV-D28T2/N1-DA5(B)	3.4	3.4	3.2	3.1	3.0	2.8
MDV-D36T2/N1-DA5(B)	4.2	4.2	4.0	3.8	3.8	3.5
MDV-D45T2/N1-DA5(B)	5.3	5.3	5.0	4.8	4.7	4.4
MDV-D56T2/N1-DA5(B)	6.7	6.6	6.3	6.1	5.9	5.5
MDV-D71T2/N1-DA5(B)	8.5	8.4	8.0	7.8	7.5	7.0
MDV-D80T2/N1-BA5(B)	9.5	9.5	9.0	8.7	8.5	7.8
MDV-D90T2/N1-BA5(B)	10.6	10.5	10.0	9.7	9.4	8.8
MDV-D112T2/N1-BA5(B)	13.3	13.1	12.5	12.1	11.8	10.9
MDV-D140T2/N1-BA5(B)	16.4	16.3	15.5	15.0	14.6	13.5

Abbreviations:

TC: Total capacity (kW)

Notes:

1. Shaded cells indicate rated condition.

8 Electrical Characteristics

Table 7.1: Medium Static Pressure Duct electrical characteristics

Model name	Power supply						Indoor fan motors	
	Hz	Volts	Min. volts	Max. volts	MCA	MFA	Rated motor output (kW)	FLA
MDV-D22T2/N1-DA5(B)	50	220-240	198	264	0.3	15	0.03	0.2
MDV-D28T2/N1-DA5(B)	50	220-240	198	264	0.3	15	0.03	0.2
MDV-D36T2/N1-DA5(B)	50	220-240	198	264	0.3	15	0.03	0.2
MDV-D45T2/N1-DA5(B)	50	220-240	198	264	0.4	15	0.03	0.3
MDV-D56T2/N1-DA5(B)	50	220-240	198	264	0.4	15	0.03	0.3
MDV-D71T2/N1-DA5(B)	50	220-240	198	264	0.6	15	0.06	0.5
MDV-D80T2/N1-BA5(B)	50	220-240	198	264	1.0	15	0.15	0.8
MDV-D90T2/N1-BA5(B)	50	220-240	198	264	1.0	15	0.15	0.8
MDV-D112T2/N1-BA5(B)	50	220-240	198	264	1.3	15	0.15	1.0
MDV-D140T2/N1-BA5(B)	50	220-240	198	264	1.6	15	0.24	1.3

Abbreviations:

MCA: Minimum Circuit Amps

MFA: Maximum Fuse Amps

FLA: Full Load Amps

9 Sound Levels

9.1 Overall

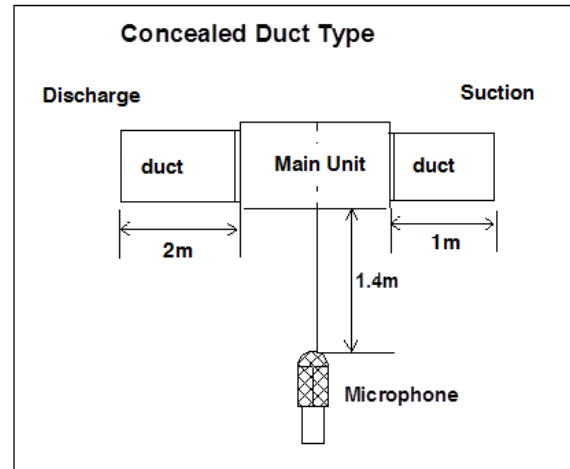
Table 8.1: High Static Pressure Duct sound pressure levels¹

Model name	Sound pressure levels dB(A)		
	H	M	L
MDV-D22T2/N1-DA5(B)	32	24	21
MDV-D28T2/N1-DA5(B)	31	24	21
MDV-D36T2/N1-DA5(B)	35	28	24
MDV-D45T2/N1-DA5(B)	36	29	26
MDV-D56T2/N1-DA5(B)	36	29	27
MDV-D71T2/N1-DA5(B)	36	30	27
MDV-D80T2/N1-BA5(B)	45.4	39.8	37
MDV-D90T2/N1-BA5(B)	45.4	39.8	37
MDV-D112T2/N1-BA5(B)	48.0	41.9	38
MDV-D140T2/N1-BA5(B)	47.7	43.2	39

Notes:

1. Sound pressure levels are measured 1.4m below the unit in a semi-anechoic chamber. During in-situ operation, sound pressure levels may be higher as a result of ambient noise.

Figure 8.1: sound pressure level measurement



9.2 Octave Band Levels

Figure 8.2: MDV-D22T2/N1-DA5(B) octave band levels

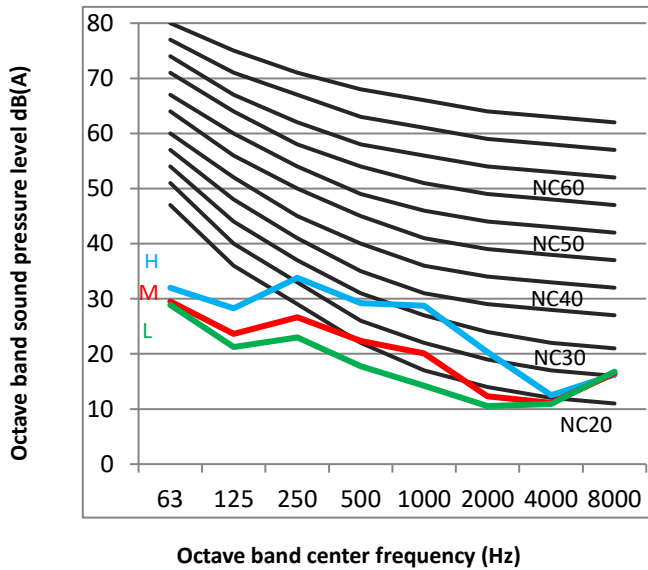
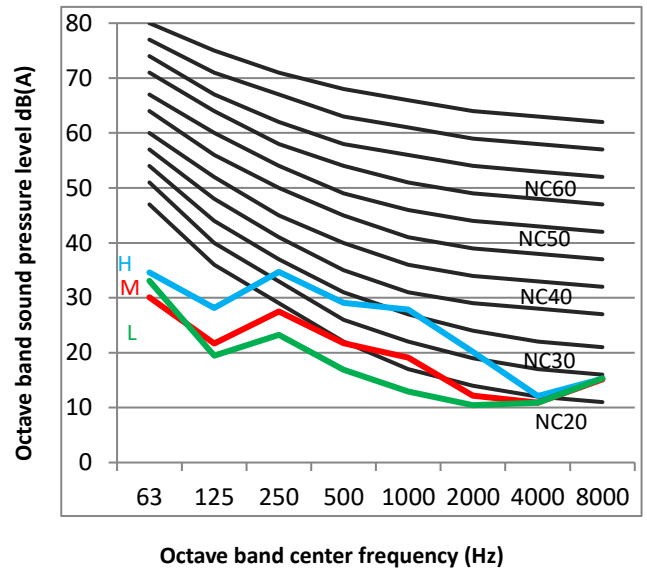


Figure 8.3: MDV-D28T2/N1-DA5(B) octave band levels



The 2nd Generation AC Series VRF Indoor Units



Figure 8.4: MDV-D36T2/N1-DA5(B) octave band levels

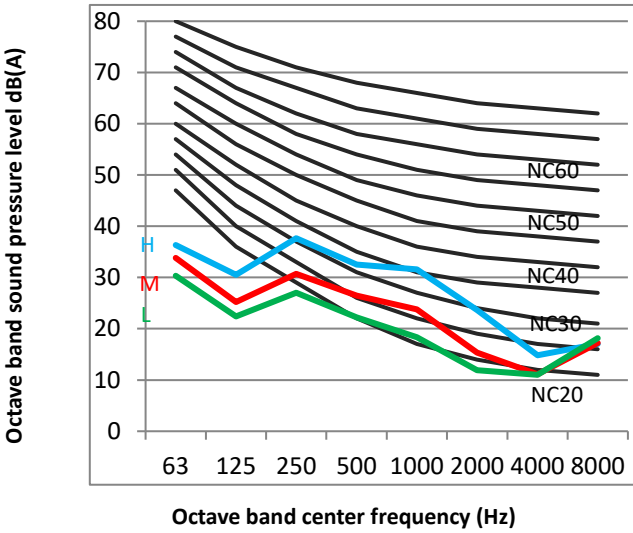


Figure 8.5: MDV-D45T2/N1-DA5(B) octave band levels

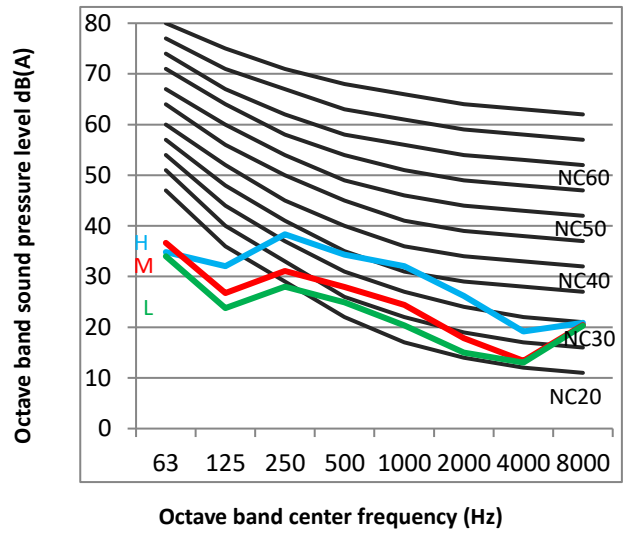


Figure 8.6: MDV-D56T2/N1-DA5(B) octave band levels

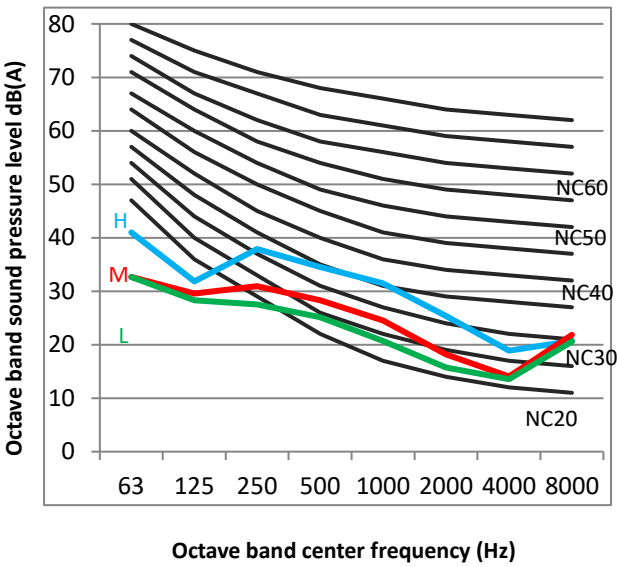


Figure 8.7: MDV-D71T2/N1-DA5(B) octave band levels

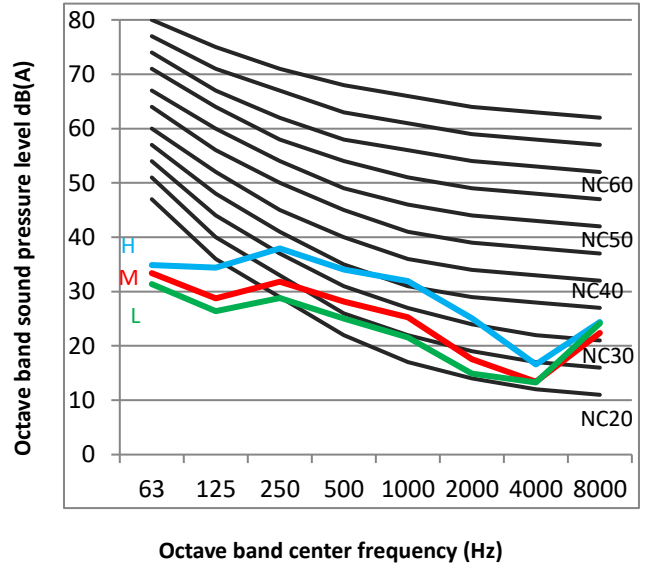


Figure 8.8: MDV-D80(90)T2/N1-BA5(B) octave band levels

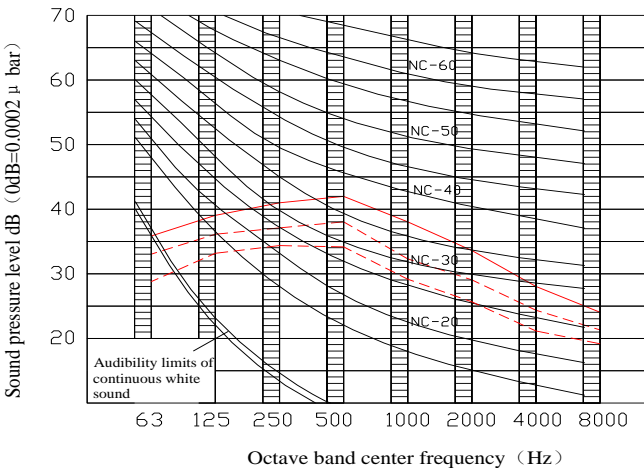


Figure 8.9: MDV-D112T2/N1-BA5(B) octave band levels

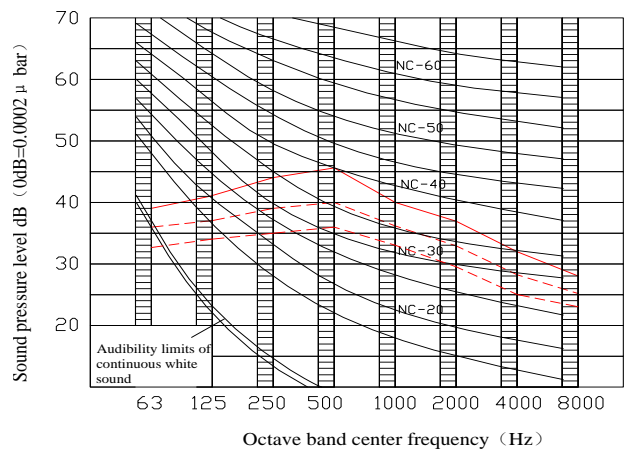
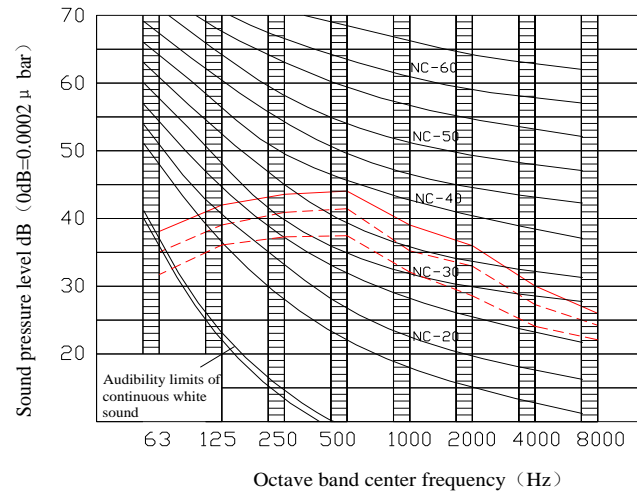


Figure 8.10: MDV-D140T2/N1-BA5(B) octave band levels



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Note: Product specifications change from time to time as product improvements and developments are released and may vary from those in this document.

