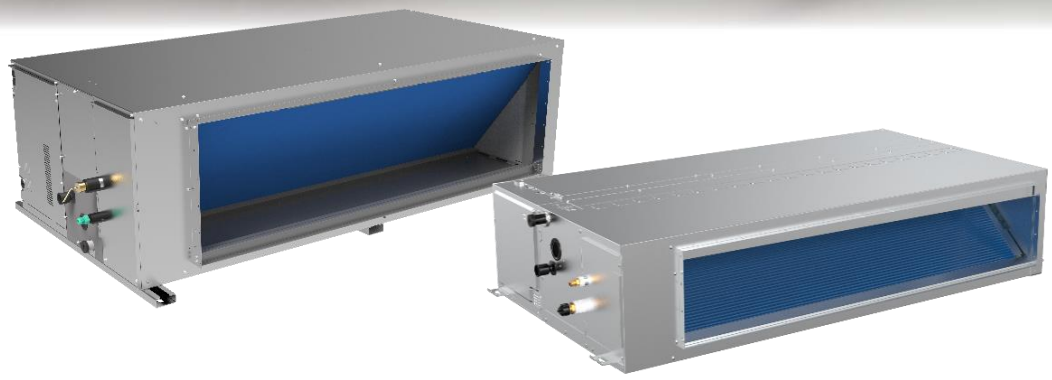
VEHP(HA) Series

High Static Pressure VRF

Technical Manual

220-240V/1/50-60Hz



High Static Pressure Duct

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1 Specifications

VEHP019T0A-DCV056,VEHP024T0A-DCV071, VEHP027T0A-DCV080,VEHP031T0A-DCV090

Table 1.1: VEHP019(024,027,031)T0A specifications

Model name			VEHP019T0A-DCV056	VEHP024T0A-DCV071	VEHP027T0A-DCV080	VEHP031T0A-DCV090
Power supply			1-phase, 220-240V, 50/60Hz			
Cooling[1]	Capacity	kW	5.6	7.1	8.0	9.0
		kBut/h	19.1	24.2	27.3	30.7
	Input	W	159	159	159	196
Heating[2]	Capacity	kW	6.3	8.0	9.0	10.0
		kBut/h	21.5	27.3	30.7	34.1
	Input	W	159	159	159	196
Fan motor	Type		DC			
	Number		1			
Coil	Number of rows		3	3	3	3
	Tube pitch × row pitch	mm	18×10.72			
	Fin spacing	mm	1.35	1.35	1.35	1.35
	Fin type		Hydrophilic aluminum			
	Tube OD and type	mm	Φ5 Inner groove			
	Dimensions (L×H ×W)	mm	850×360×32.16	850×360×32.16	850×360×32.16	850×360×32.16
	Number of circuits		10	10	10	10
Airflow rate[3]		m^3/h	1360/1281/1201/ 1122/1043/963/884	1360/1281/1201/ 1122/1043/963/884	1360/1281/1201/ 1122/1043/963/884	1500/1413/1325/ 1238/1150/1063/975
External static pressure[4]		Pa	80 (0-250)			
Sound pressure level[5]		dB(A)	39/38/36/35/33/32/30	39/38/36/35/33/32/30	39/38/36/35/33/32/30	40/39/37/36/34/33/31
Sound power level		dB(A)	59/56/54/53/51/49/47	59/56/54/53/51/49/47	59/56/54/53/51/49/47	63/60/58/56/54/52/50
Unit	Net dimensions[6] (W×H×D)	in(mm)	41 3/8x 11 3/4x 29 1/2 (1050×299×750)			
	Packed dimensions (W×H×D)	in(mm)	47 7/8x 14 1/21x 35 1/21 (1215×359×890)			
	Net/Gross weight	lbs(kg)	77.16(35)/84.88(38.5)	77.16(35)/84.88(38.5)	77.16(35)/84.88(38.5)	77.16(35)/84.88(38.5)
Refrigerant type			R410A/R32			
Design pressure (H/L)		MPa	4.4/2.6			
Pipe connections	Liquid/Gas pipe	mm	Φ6.35/Φ12.7	Φ9.52/Φ15.9		
	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.
3. Fan motor speed and air flow rate are from the highest speed to the lowest speed, total 7 rates for each model.
4. Stable operation external static pressure range. (Note: setting external static pressure outside the unit's optimal static pressure range may lead to higher noise levels and lower airflow rate. For the optimal external static pressure range refer to the unit's installation manual.)
5. Sound pressure level is from highest level to lowest level, total 7 levels for each model. Sound pressure level is measured 1.4m below the unit in an anechoic chamber.
6. The dimension is only the body size, excluding the size of the installation lug, connecting copper pipe, etc. For detailed dimensions, please refer to the installation manual.

All specifications are measured at standard external static pressure

VEHP038T0A-DCV112,VEHP042T0A-DCV125,VEHP048T0A-DCV140,VEHP060T0A-DCV160

Table 1.2: VHEP038(042,048,060)T0A specifications

Model name			**VEHP038T0A-DCV112**	**VEHP042T0A-DCV125**	**VEHP048T0A-DCV140**	**VEHP060T0A-DCV160**
Power supply			1-phase, 220-240V, 50/60Hz			
Cooling[1]	Capacity	kW	11.2	12.5	14.0	16.0
		kBut/h	38.2	42.7	47.8	54.6
	Input	W	248	252	284	339
Heating[2]	Capacity	kW	12.5	14.0	16.0	18.0
		kBut/h	42.7	47.8	54.6	61.4
	Input	W	248	252	284	339
Fan motor	Type		DC			
	Number		1			
Coil	Number of rows		2	3	3	3
	Tube pitch × row pitch	mm	18×10.72			
	Fin spacing	mm	1.35	1.35	1.35	1.35
	Fin type		Hydrophilic aluminum			
	Tube OD and type	mm	Φ5 Inner groove			
	Dimensions (L×H ×W)	mm	1200×360×21.44	1200×360×32.16	1200×360×32.16	1200×360×32.16
	Number of circuits		10	10	10	10
Airflow rate[3]		m^3/h	2140/2015/1890/1766/1641/1516/1391	2150/2025/1899/1774/1649/1523/1398	2400/2260/2120/1980/1840/1700/1560	2600/2448/2297/2145/1993/1842/1690
External static pressure[4]		Pa	80 (0-250)	100 (0-250)		
Sound pressure level[5]		dB(A)	41/40/38/37/35/34/32	41/40/39/37/36/35/33	43/42/40/39/37/36/34	44/43/41/40/38/37/35
Sound power level		dB(A)	63/61/59/57/56/54/52	66/64/62/60/58/56/54	67/64/62/60/58/57/55	68/66/64/62/60/59/57
Unit	Net dimensions[6] (W×H×D)	in(mm)	55 1/8x 11 3/4x 29 1/2 (1400×299×750)			
	Packed dimensions (W×H×D)	in(mm)	61 5/8x 14 1/8x 35 1/8 (1565×359×890)			
	Net/Gross weight	lbs(kg)	98.11(44.5)/106.92(48.5)	102.51(46.5)/111.33(50.5)	102.51(46.5)/111.33(50.5)	102.51(46.5)/111.33(50.5)
Refrigerant type			R410A/R32			
Design pressure (H/L)		MPa	4.4/2.6			
Pipe connections	Liquid/Gas pipe	mm	Φ9.52/Φ15.9			
	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.
3. Fan motor speed and air flow rate are from the highest speed to the lowest speed, total 7 rates for each model.
4. Stable operation external static pressure range. (Note: setting external static pressure outside the unit's optimal static pressure range may lead to higher noise levels and lower airflow rate. For the optimal external static pressure range refer to the unit's installation manual.)
5. Sound pressure level is from highest level to lowest level, total 7 levels for each model. Sound pressure level is measured 1.4m below the unit in an anechoic chamber.
6. The dimension is only the body size, excluding the size of the installation lug, connecting copper pipe, etc. For detailed dimensions, please refer to the installation manual.

All specifications are measured at standard external static pressure

OMEGA Indoor Units

VEHA070T0A-DCV200,VEHA076T0A-DCV224,VEHA086T0A-DCV252,VEHA096T0A-DCV280

Table 1.3: VEHA070(076,086,096)T0A specifications

Model name			**VEHA070T0A-DCV200**	**VEHA076T0A-DCV224**	**VEHA086T0A-DCV252**	**VEHA086T0A-DCV252**
Power supply			1-phase, 220-240V, 50/60Hz			
Cooling[1]	Capacity	kW	20.0	22.4	25.2	28.0
		kBut/h	68.3	76.5	86.0	95.6
	Input	W	780	780	780	780
Heating[2]	Capacity	kW	22.5	25.0	26.0	31.5
		kBut/h	76.8	85.3	88.7	107.5
	Input	W	780	780	780	780
Fan motor	Type		DC			
	Number		1			
Coil	Number of rows		3	3	3	3
	Tube pitch × row pitch	mm	21×13.37			
	Fin spacing	mm	1.5	1.5	1.5	1.5
	Fin type		Hydrophilic aluminum			
	Tube OD and type	mm	Φ7 Inner groove			
	Dimensions (L×H ×W)	mm	1050×588×40.1	1050×588×40.1	1050×588×40.1	1050×588×40.1
	Number of circuits		14	14	14	14
Airflow rate[3]		m^3/h	4700/4387/4073/3760/3447/3133/2820	4700/4387/4073/3760/3447/3133/2820	4700/4387/4073/3760/3447/3133/2820	4700/4387/4073/3760/3447/3133/2820
External static pressure[4]		Pa	200(0-400)			
Sound pressure level[5]		dB(A)	51/50/48/46/44/43/42	51/50/48/46/44/43/42	51/50/48/46/44/43/42	51/50/48/46/44/43/42
Sound power level		dB(A)	74/72/70/68/66/64/62	74/72/70/68/66/64/62	74/72/70/68/66/64/62	74/72/70/68/66/64/62
Unit	Net dimensions[6] (W×H×D)	in(mm)	51 1/21x 22 7/8x 35 1/2 (1300×580×900)			
	Packed dimensions (W×H×D)	in(mm)	60 1/21x 28 3/4x 41 3/4 (1530×730×1060)			
	Net/Gross weight	lbs(kg)	275.58(125)/330.69(150)	275.58(125)/330.69(150)	275.58(125)/330.69(150)	275.58(125)/330.69(150)
Refrigerant type			R410A/R32			
Design pressure (H/L)		MPa	4.4/2.6			
Pipe connections	Liquid/Gas pipe	mm	Φ9.52/Φ19.1		Φ12.7/Φ22.2	
	Drain pipe	mm	OD Φ32			

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.
3. Fan motor speed and air flow rate are from the highest speed to the lowest speed, total 7 rates for each model.
4. Stable operation external static pressure range. (Note: setting external static pressure outside the unit's optimal static pressure range may lead to higher noise levels and lower airflow rate. For the optimal external static pressure range refer to the unit's installation manual.)
5. Sound pressure level is from highest level to lowest level, total 7 levels for each model. Sound pressure level is measured 1.4m below the unit in an anechoic chamber.
6. The dimension is only the body size, excluding the size of the installation lug, connecting copper pipe, etc. For detailed dimensions, please refer to the installation manual.

All specifications are measured at standard external static pressure

VEHA114T0A-DCV335,VEHA136T0A-DCV400,VEHA153T0A-DCV450,VEHA191T0A-DCV560

Table 1.4:VEHA114(136,153,191)T0A specifications

Model name			VEHA114T0A-DCV335	VEHA136T0A-DCV400	VEHA153T0A-DCV450	VEHA191T0A-DCV560
Power supply			1-phase, 220-240V, 50/60Hz			
Cooling[1]	Capacity	kW	33.5	40.0	45.0	56.0
		kBut/h	114.3	136.5	153.6	191.1
	Input	W	810	1850	1850	2030
Heating[2]	Capacity	kW	38.0	45.0	56.0	63.0
		kBut/h	129.7	153.6	191.1	215.0
	Input	W	810	1850	1850	2030
Fan motor	Type		DC			
	Number		1			
Coil	Number of rows		4	3	3	4
	Tube pitch × row pitch	mm	21×13.37			
	Fin spacing	mm	1.5	1.5	1.5	1.5
	Fin type		Hydrophilic aluminum			
	Tube OD and type	mm	Φ7 Inner groove			
	Dimensions (L×H ×W)	mm	1050×588×42.7	1600×588×40.1	1600×588×40.1	1600×588×42.7
	Number of circuits		14	14	14	14
Airflow rate[3]		m^3/h	4700/4387/4073/3760/3447/3133/2820	7500/7000/6500/6000/5500/5000/4500	7500/7000/6500/6000/5500/5000/4500	8400/7840/7280/6720/6160/5600/5040
External static pressure[4]		Pa	200 (0-400)	300 (0-400)		
Sound pressure level[5]		dB(A)	52/51/49/48/46/44/43	58/56/54/52/50/49/48	58/56/54/52/50/49/48	59/58/56/54/53/51/49
Sound power level		dB(A)	74/72/70/68/66/63/61	79/78/76/74/72/70/67	79/78/76/74/72/70/67	81/80/77/75/73/71/69
Unit	Net dimensions[6] (W×H×D)	in(mm)	51 1/8x 22 7/8x 35 1/2 (1300×580×900)	72 7/8x 22 7/8x 35 1/2 (1850×580×900)		
	Packed dimensions (W×H×D)	in(mm)	60 1/21x 28 3/47x 41 3/4 (1530×730×1060)	81 7/8x 28 3/4x 41 3/4 (2080×730×1060)		
	Net/Gross weight	lbs(kg)	282.19(128)/337.31(153)	365.97(166)/449.74(204)	365.97(166)/449.74(204)	374.79(170)/458.56(208)
Refrigerant type			R410A/R32			
Design pressure (H/L)		MPa	4.4/2.6			
Pipe connections	Liquid/Gas pipe	mm	Φ12.7/Φ25.4		Φ15.9/Φ28.6	
	Drain pipe	mm	OD Φ32			

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.
3. Fan motor speed and air flow rate are from the highest speed to the lowest speed, total 7 rates for each model.
4. Stable operation external static pressure range. (Note: setting external static pressure outside the unit's optimal static pressure range may lead to higher noise levels and lower airflow rate. For the optimal external static pressure range refer to the unit's installation manual.)
5. Sound pressure level is from highest level to lowest level, total 7 levels for each model. Sound pressure level is measured 1.4m below the unit in an anechoic chamber.
6. The dimension is only the body size, excluding the size of the installation lug, connecting copper pipe, etc. For detailed dimensions, please refer to the installation manual.

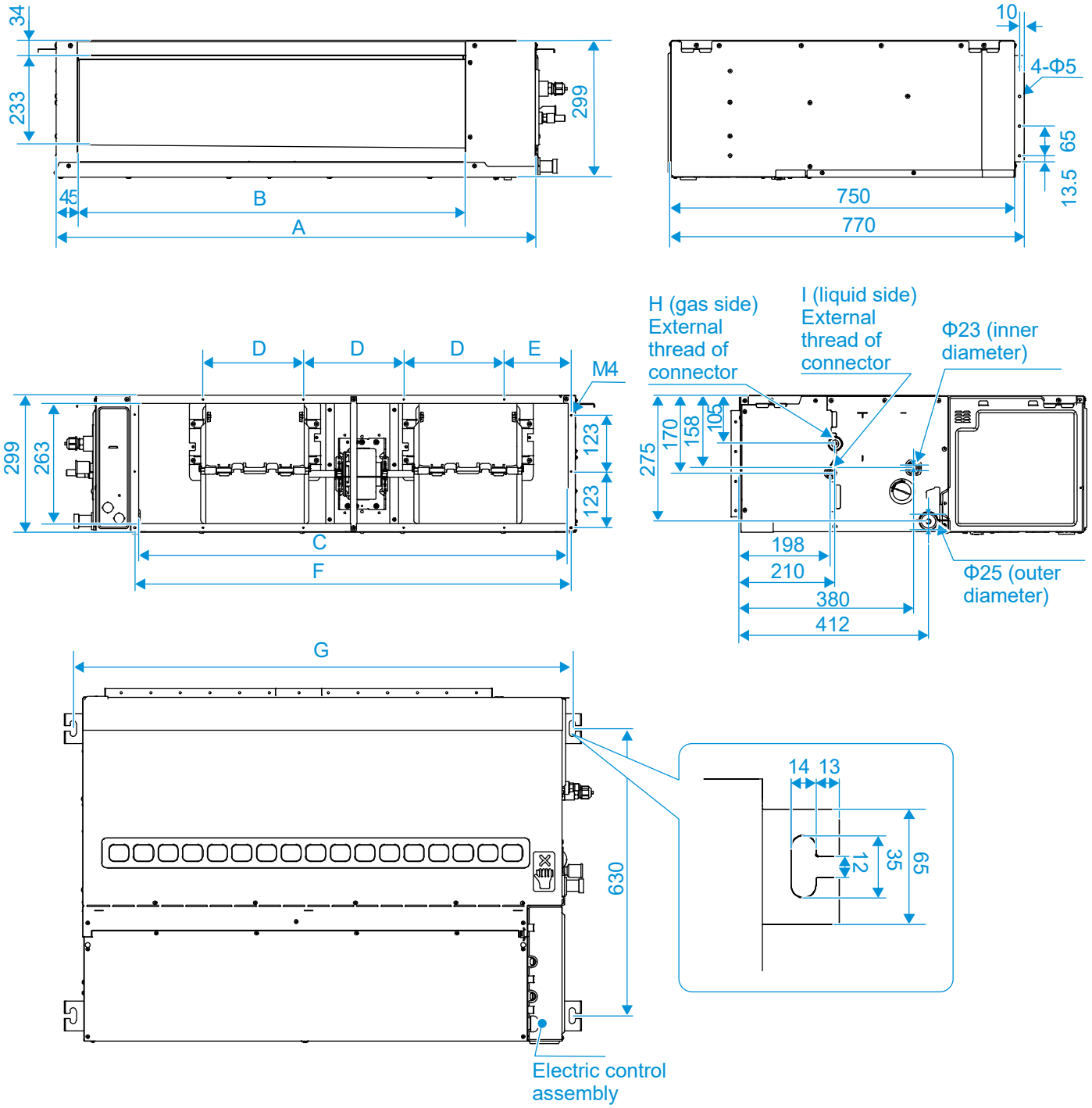
All specifications are measured at standard external static pressure

2 Dimensions

2.1 Unit Dimensions

VEHP019T0A-DCV056,VEHP024T0A-DCV071,VEHP027T0A-DCV080,VEHP031T0A-DCV090,VEHP038T0A-DCV112,VEHP042T0A-DCV125,VEHP048T0A-DCV140,VEHP060T0A-DCV160

Figure 2.1: VEHP019(024,027,031,038,042,048,060)T0A dimensions (unit: mm)

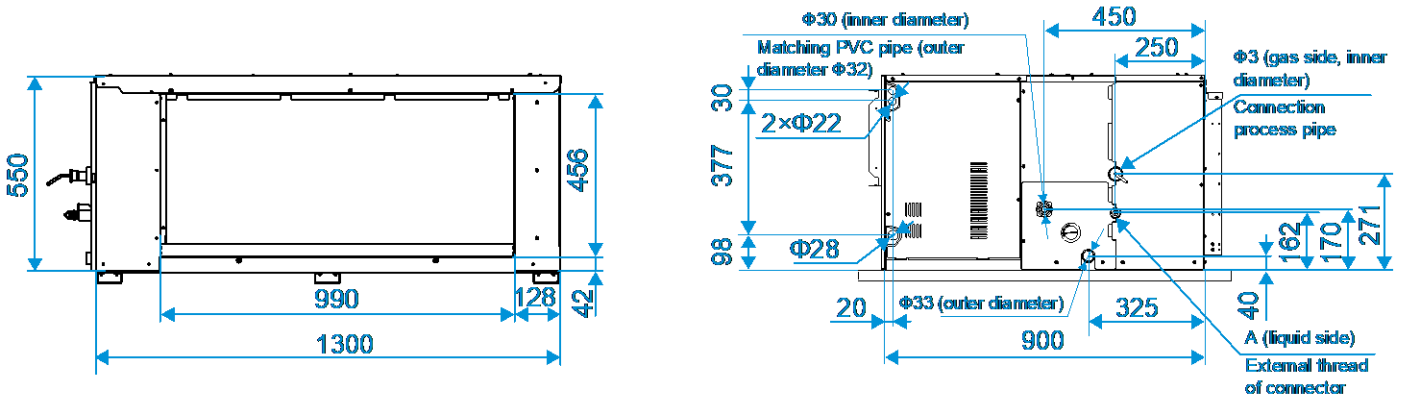


Model (kW)	A	B	C	D	E	F	G	H	I
VEHP019	1050	850	940	220	146	956	1095	3/4-16 UNF	7/16-20 UNF
VEHP024(27,31)	1050	850	940	220	146	956	1095	7/8-14 UNF	5/8-18 UNF
VEHP038(42,48,060)	1400	1200	1290	220	213	1306	1445	7/8-14 UNF	5/8-18 UNF

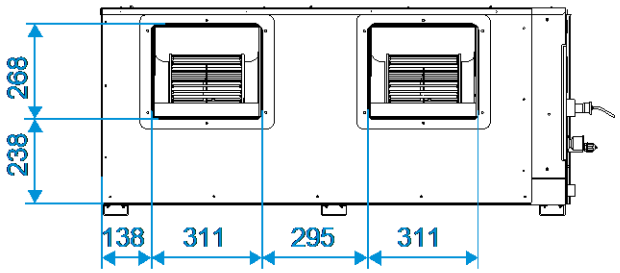
VEHA070T0A-DCV200,VEHA076T0A-DCV224,VEHA086T0A-DCV252,VEHA096T0A-DCV280,VEHA114T0A-DCV335

Figure 2.2: VEHA070(076,086,096,114)T0A dimensions (unit: mm)

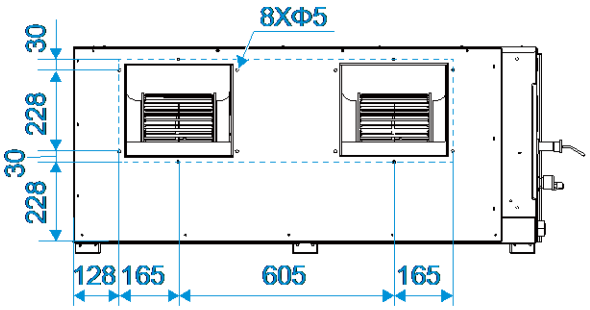
Appearance and dimensions of the air inlets, piping, drain pipes, power cable hole and communication wire hole:



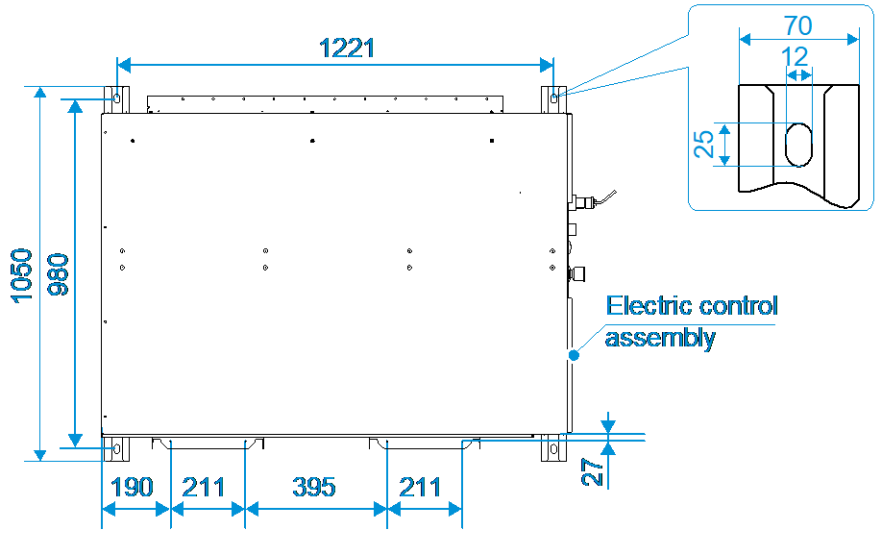
Dimensions of the air outlets:

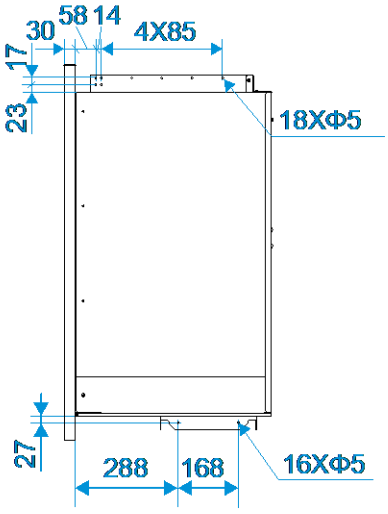


Dimensions of the air duct installation hole after the air outlet flange is removed:



Dimensions of lugs and the screw hole of air outet/inlet flange:



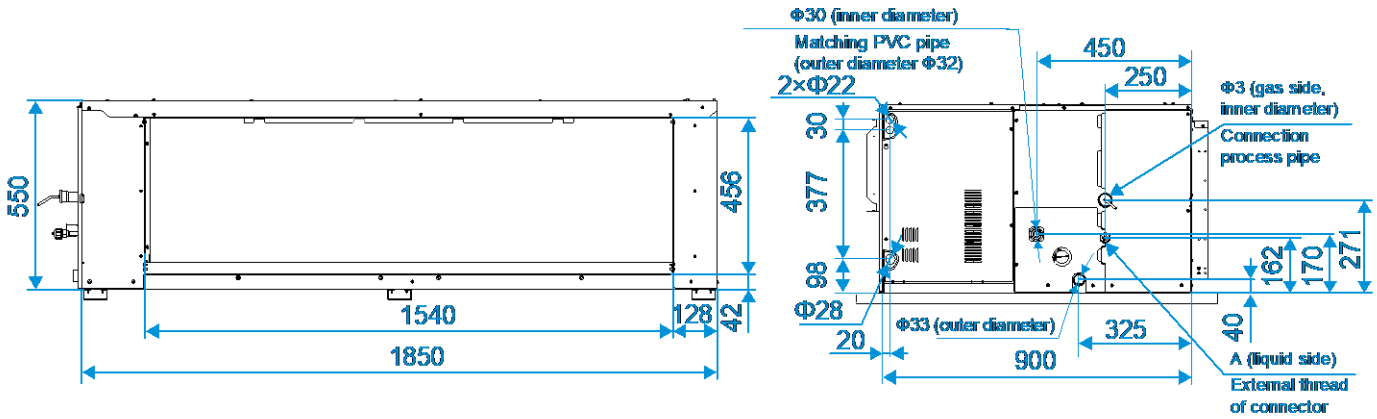


Capacity (kW)	A
VEHA070(076)	5/8-18 UNF
VEHA086(096, 114)	3/4-16 UNF

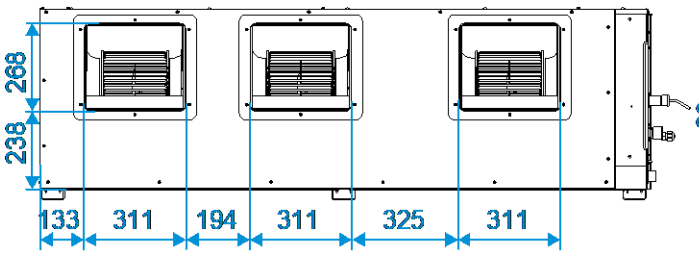
VEHA136T0A-DCV400,VEHA153T0A-DCV450,VEHA191T0A-DCV560

Figure 2.3: VEHA136(153,191)T0A dimensions (unit: mm)

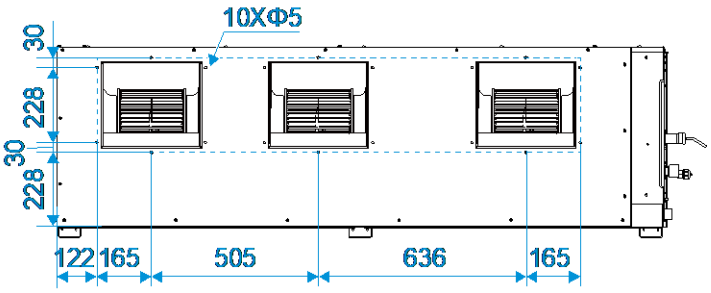
Appearance and dimensions of the air inlets, piping, drain pipes, power cable hole and communication wire hole:



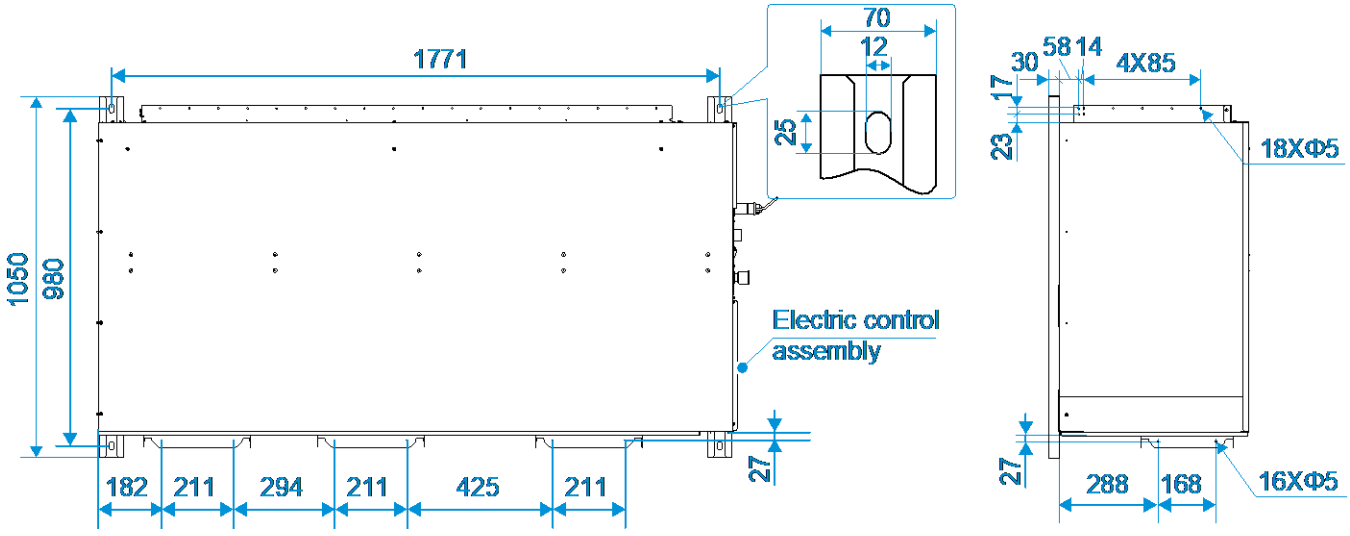
Dimensions of the air outlets:



Dimensions of the air duct installation hole after the air outlet flange is removed:



Dimensions of lugs and the screw hole of air outlet/inlet flange:



Capacity (kW)	A
VEHA114(136)	3/4-16 UNF
VEHA153(191)	7/8-14 UNF

3 Unit Placement

3.1 Placement Considerations

Unit placement should take account of the following considerations:

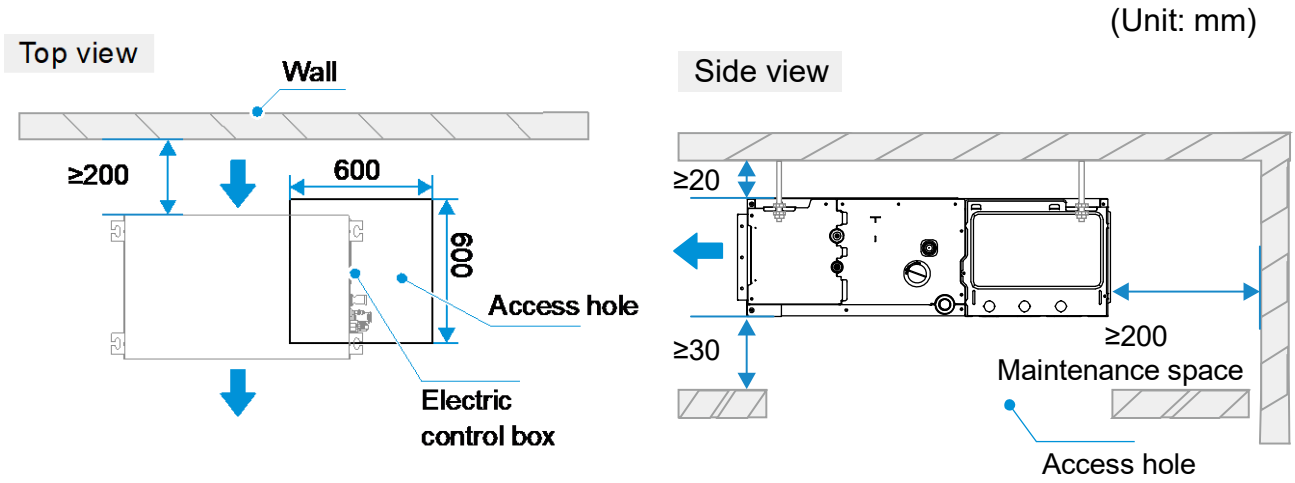
- Units should not be installed in the following locations:
  - Where exposure to direct radiation from a high-temperature heat source or to interference from a source of electromagnetic radiation may occur.
  - Where dust or dirt may affect heat exchangers.
  - Where exposure to oil or to corrosive or harmful gases, such as acidic or alkaline gases, may occur.
  - Where exposure to salinity may occur, such as seaside locations.
  - Where highly flammable materials are present.
  - Where exposure to oily air may occur, such as a kitchen.
  - Where exposure to very high humidity may occur, such as a laundry.
- Units should be installed in positions where:
  - The ceiling is horizontal and is able to bear the unit's weight.
  - There are no obstructions that could impede the airflow into and out of the unit.
  - The airflow out of the unit can reach throughout the room.
  - There is sufficient space for access during installation, servicing and maintenance.
  - The refrigerant piping and drain piping can be easily connected to the refrigerant piping and drain piping systems.
  - Short-circuit ventilation (where outlet air returns quickly to a unit's air inlet) will not occur.

3.2 Space Requirements

MIH56T1HN18 / MIH71T1HN18 / MIH80T1HN18/ MIH90T1HN18

MIH112T1HN18 / MIH125T1HN18/ MIH140T1HN18 / MIH160T1HN18

Figure 3.1: High Static Pressure Duct space requirements (unit: mm)

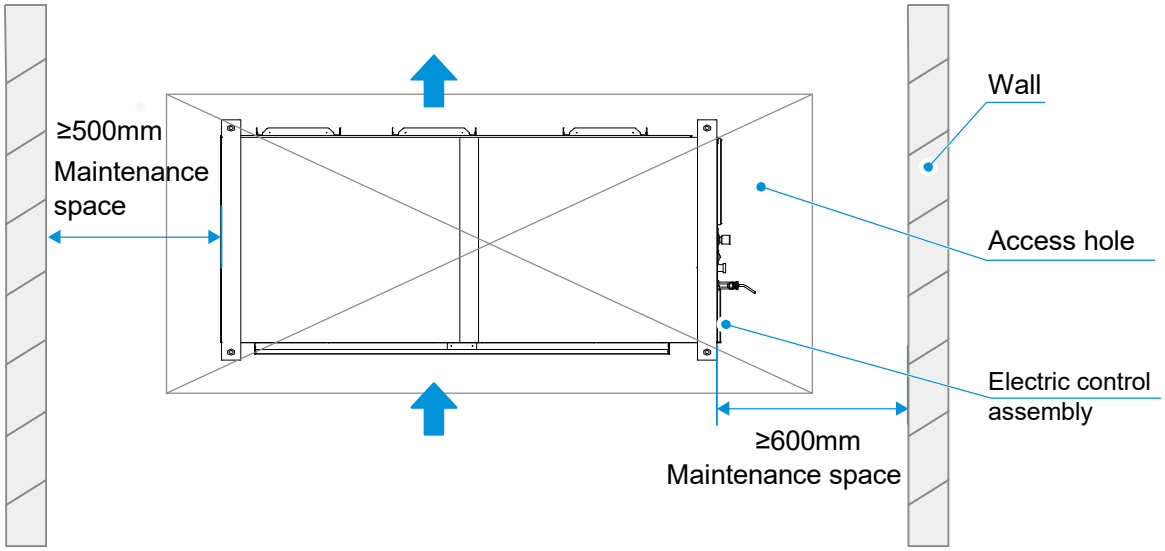


VEHA070T0A-DCV200,VEHA076T0A-DCV224,VEHA086T0A-DCV252,VEHA096T0A-DCV280,VEHA114T0A-DCV335,VEHA136T0A-DCV400,VEHA153T0A-DCV450,VEHA191T0A-DCV560

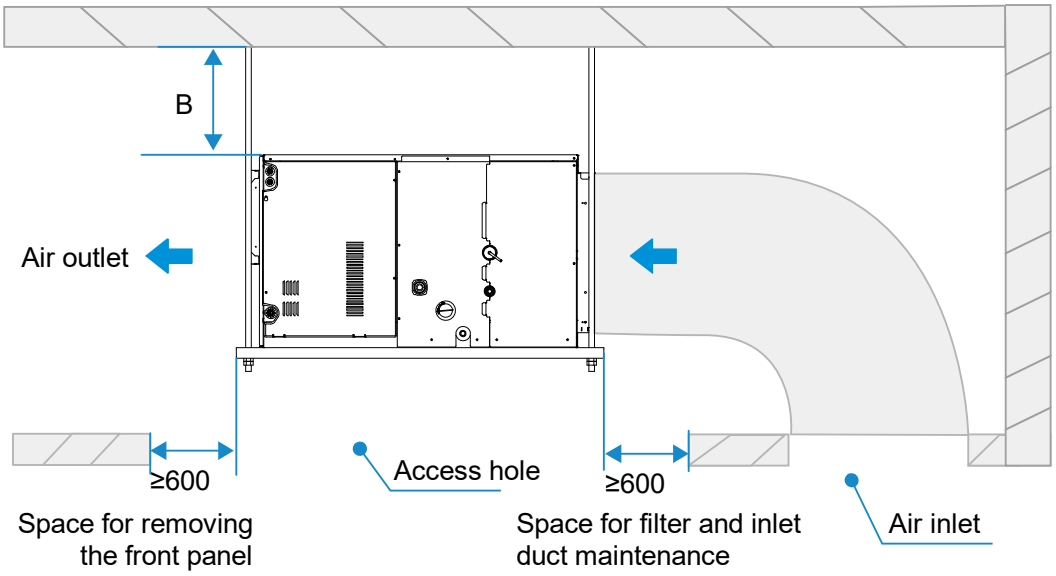
Figure 3.2: High Static Pressure Duct space requirements (unit: mm)

Bottom view

(Unit: mm)



Side view

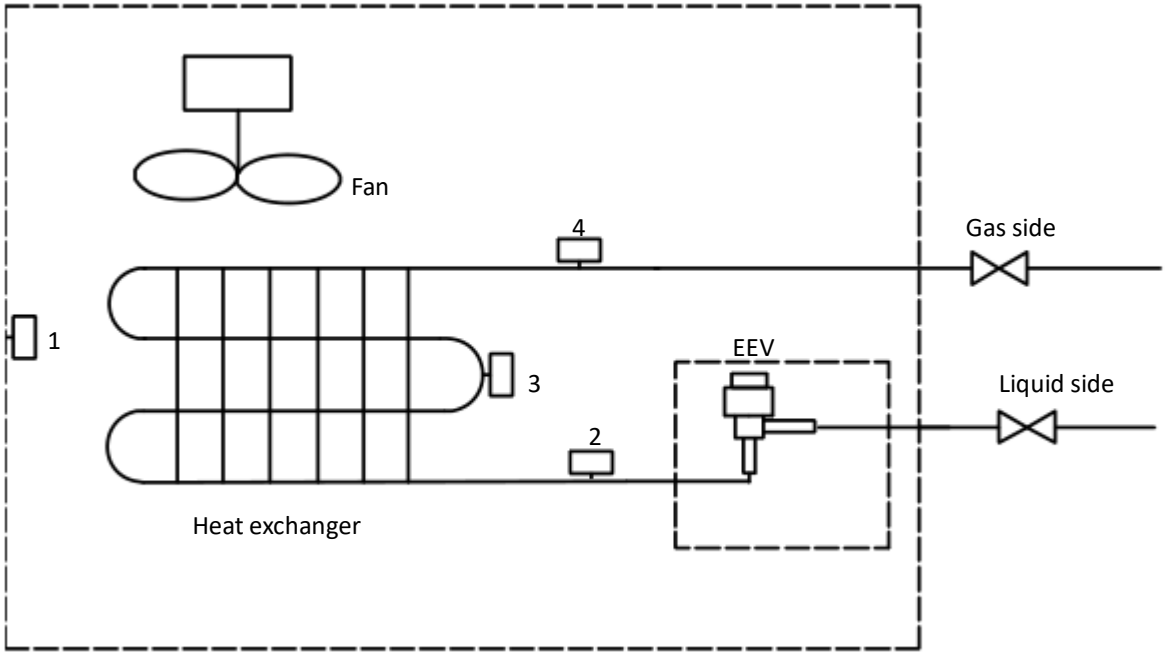


Notes for installers and service engineers

1. The distance between the indoor unit and the roof (B) shall be greater than 50mm to install the air duct.
2. The motor and fan can be maintained from the indoor unit top or the air outlet. If maintenance is performed from the indoor unit top, the distance between the indoor unit and the roof must be larger than 600mm. If maintenance is performed from the air outlet, the distance between the indoor unit and the roof must be larger than 50mm, with a minimum distance of 600mm allowed for removing the front panel.

4 Piping Diagrams

Figure 4.1: Piping diagram

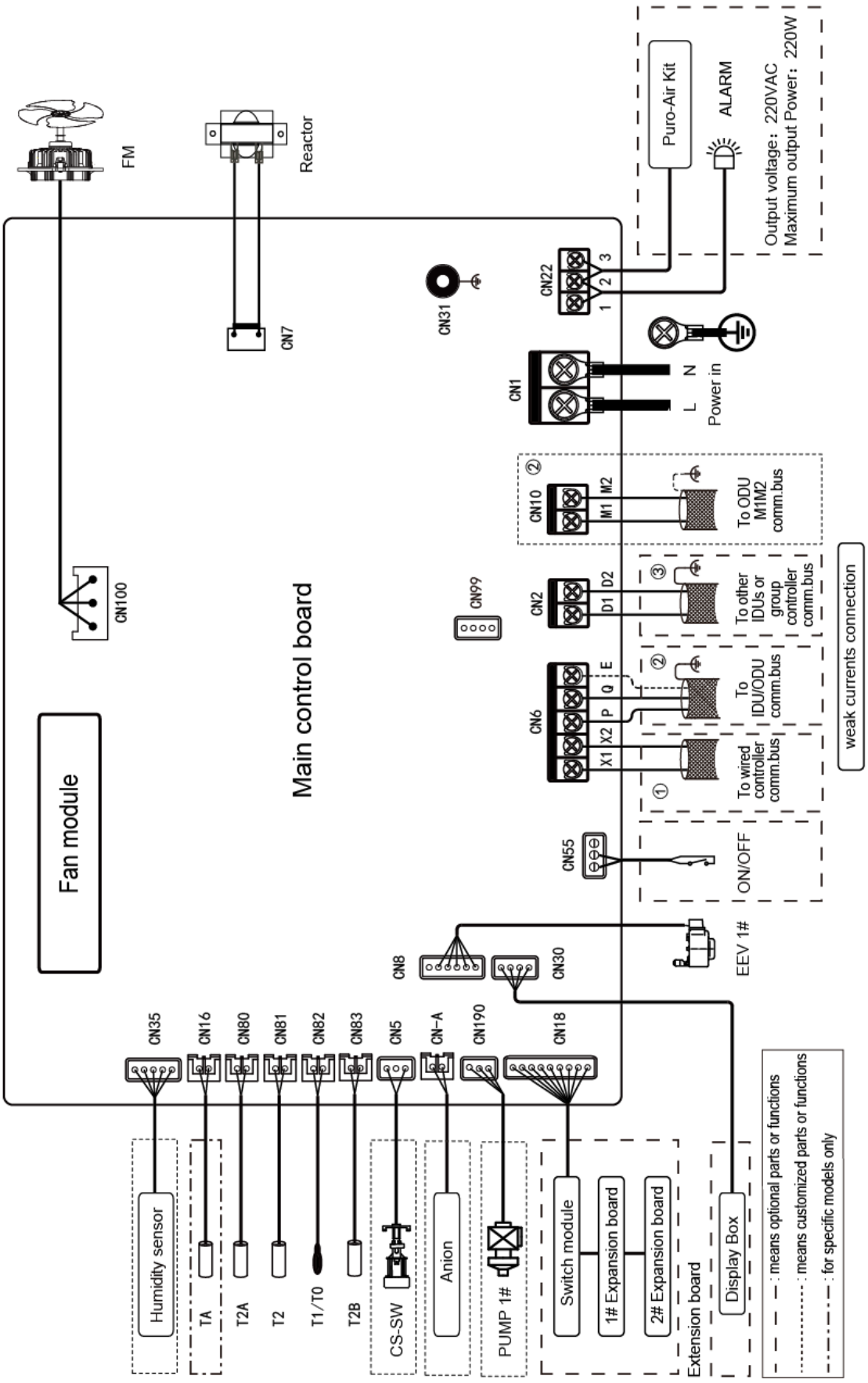


Legend		
1	T1	Inlet Air Temp. Sensor
2	T2A	Liquid Pipe Temp. Sensor
3	T2	Middle Pipe Temp. Sensor
4	T2B	Gas Pipe Temp. Sensor
5	EEV	Electronic expansion valve
6	FAN	Fan motor

5 Wiring Diagrams

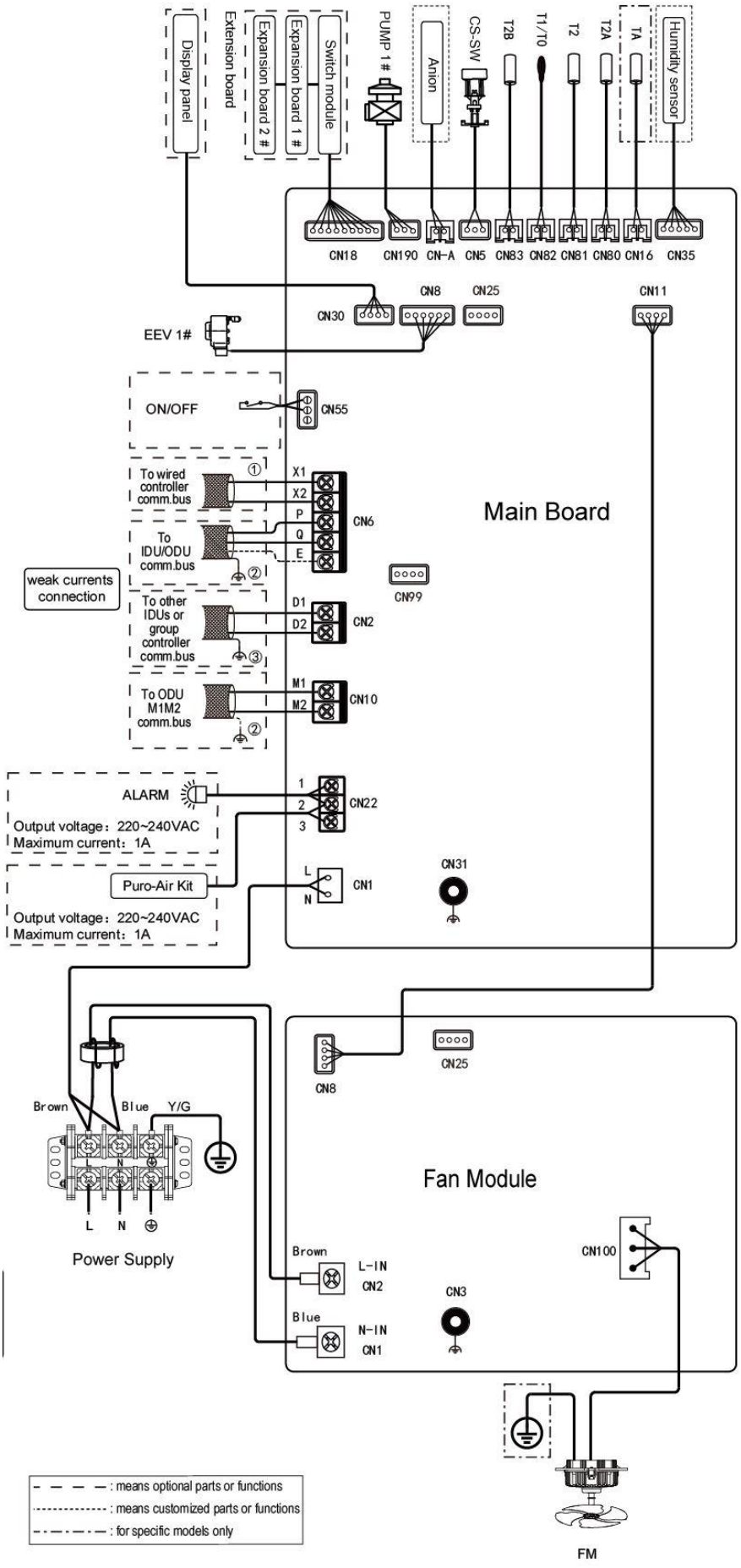
VEHP019T0A-DCV056,VEHP024T0A-DCV071,VEHP027T0A-DCV080,VEHP031T0A-DCV090,VEHP038T0A-DCV112,VEHP042T0A-DCV125,VEHP048T0A-DCV140,VEHP060T0A-DCV160

Figure 5.1: VEHP019(027,031,038,042,048,060)T0A Duct wiring diagram



VEHA070T0A-DCV200,VEHA076T0A-DCV224,VEHA086T0A-DCV252,VEHA096T0A-DCV280,VEHA114T0A-DCV335,VEHA136T0A-DCV400,VEHA153T0A-DCV450,VEHA191T0A-DCV560

Figure 5.2: VEHA070(076,086,096,114,136,153)T0A Duct wiring diagram



Legend				
Code	**Name**		**Code**	**Name**
XS XP	connectors		T1	Inlet Air Temp. Sensor
TA	Steam pipe temperature sensor*		T2B	Gas Pipe Temp. Sensor
CS-SW	Water level switch		T0	Fresh air inlet temperature sensor*
EEV	Electronic expansion valve		ALARM	Alarm output
Anion	Sterilization module		FM	DC Fan motor
T2A	Liquid Pipe Temp. Sensor		ON/OFF	Remote on/off
T2	Middle Pipe Temp. Sensor			

*** Indicates that this sensor is only available for Fresh Air Processing Unit**

Notes for installers and service engineers

Caution

- All installation, servicing and maintenance must be carried out by competent and suitably qualified, certified and accredited professionals and in accordance with all applicable legislation.
- Units should be grounded in accordance with all applicable legislation. Metal and other conductive components should be insulated in accordance with all applicable legislation.
- Power supply wiring should be securely fastened at the power supply terminals – loose power supply wiring would represent a fire risk.
- After installation, servicing or maintenance, the electric control box cover should be closed. Failing to close the electric control box cover risks fire or electric shock.
- The dotted lines indicate the field wiring or optional function.
- X1X2 communication ports can be connected to the wired controller.
- PQ and M1M2 communication ports both are used for indoor and outdoor communication, and only one of them can be used at a time. Meanwhile, be sure to connect the same communication ports (PQ to PQ; M1M2 to M1M2) in case of damage of the main control board.
- D1D2 communication ports are used for group control communication. When connecting the group controller, the D1D2 port of the indoor units that are to be group controlled must be connected in daisy chain, and the group controller must be connected to the X1X2 port of one of the indoor units in the group control, and set to group control mode. In addition, D1D2 communication ports can also be connected to the central controller.

6 Capacity Tables

6.1 Cooling Capacity Table

Table 6.1: High 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
VEHP019T0A-DCV056	5.0	4.8	5.3	4.8	5.6	4.9	5.6	4.7	5.7	4.6	5.8	4.3	6.0	4.1
VEHP024T0A-DCV071	6.3	6.0	6.7	6.1	7.0	6.1	7.1	6.0	7.2	5.8	7.4	5.5	7.6	5.2
VEHP027T0A-DCV080	7.1	6.8	7.6	6.9	7.9	6.9	8.0	6.7	8.1	6.5	8.3	6.1	8.5	5.8
VEHP031T0A-DCV090	8.0	7.5	8.5	7.6	8.9	7.7	9.0	7.5	9.1	7.2	9.4	6.9	9.6	6.6
VEHP038T0A-DCV112	9.9	9.3	10.6	9.5	11.1	9.6	11.2	9.3	11.3	9.0	11.6	8.5	11.9	8.1
VEHP042T0A-DCV125	11.0	10.1	11.8	10.4	12.4	10.5	12.5	10.2	12.6	9.9	12.9	9.4	13.3	9.0
VEHP048T0A-DCV140	12.4	11.3	13.2	11.6	13.8	11.7	14.0	11.4	14.2	11.1	14.5	10.5	14.9	10.1
VEHP060T0A-DCV160	14.2	13.1	15.1	13.3	15.8	13.5	16.0	13.1	16.2	12.7	16.6	12.1	17.0	11.7
VEHA070T0A-DCV200	17.7	16.1	18.9	16.5	19.8	16.8	20.0	16.3	20.2	15.8	20.8	15.1	21.2	14.4
VEHA076T0A-DCV224	19.8	18.0	21.1	18.5	22.1	18.7	22.4	18.3	22.6	17.7	23.2	16.8	23.7	16.1
VEHA086T0A-DCV252	22.3	20.3	23.8	20.8	24.9	21.1	25.2	20.5	25.5	19.9	26.1	18.9	26.7	18.1
VEHA096T0A-DCV280	24.8	22.6	26.4	23.1	27.6	23.4	28.0	22.8	28.3	22.1	29.0	21.0	29.7	20.1
VEHA114T0A-DCV335	29.6	26.9	31.6	27.6	33.1	28.0	33.5	27.3	33.8	26.4	34.7	25.1	35.5	24.1
VEHA136T0A-DCV400	35.4	32.1	37.7	32.9	39.5	33.4	40.0	32.5	40.4	31.5	41.5	30.0	42.4	28.7
VEHA153T0A-DCV450	39.8	36.1	42.4	37.0	44.4	37.5	45.0	36.6	45.4	35.4	46.6	33.7	47.6	32.2
VEHA191T0A-DCV560	49.5	45.5	52.8	46.5	55.2	47.0	56.0	45.8	56.5	44.3	58.0	42.1	59.3	40.8

Abbreviations:
TC: Total capacity (kW)
SC: Sensible capacity (kW)

Notes:
1.Shaded cells indicate rating condition

6.2 Heating Capacity Table

Table 7.2: High Static Pressure Duct heating capacity

Model	Indoor air temperature (°C DB)					
	16	18	20	21	22	24
	SHC	SHC	SHC	SHC	SHC	SHC
VEHP019T0A-DCV056	6.7	6.6	6.3	6.1	5.9	5.5
VEHP024T0A-DCV071	8.5	8.4	8.0	7.8	7.5	7.0
VEHP027T0A-DCV080	9.5	9.5	9.0	8.7	8.5	7.8
VEHP031T0A-DCV090	10.6	10.5	10.0	9.7	9.4	8.8
VEHP038T0A-DCV112	13.3	13.1	12.5	12.1	11.8	10.9
VEHP042T0A-DCV125	14.8	14.7	14.0	13.6	13.2	12.2
VEHP048T0A-DCV140	17.0	16.8	16.0	15.5	15.0	13.9
VEHP060T0A-DCV160	19.1	18.9	18.0	17.5	16.9	15.7
VEHA070T0A-DCV200	23.9	23.6	22.5	21.8	21.2	19.6
VEHA076T0A-DCV224	26.5	26.3	25.0	24.3	23.5	21.8
VEHA086T0A-DCV252	27.6	27.3	26.0	25.2	24.4	22.6
VEHA096T0A-DCV280	33.4	33.1	31.5	30.6	29.6	27.4
VEHA114T0A-DCV335	40.3	39.9	38.0	36.9	35.7	33.1
VEHA136T0A-DCV400	47.7	47.3	45.0	43.7	42.3	39.2
VEHA153T0A-DCV450	59.4	58.8	56.0	54.3	52.6	48.7
VEHA191T0A-DCV560	66.8	66.2	63.0	61.1	59.2	54.8

Abbreviations:
SHC: Sensible Heat Capacity (kW)

Notes:
1.Shaded cells indicate rating condition

7 Electrical Characteristics

Table 8.1: High Static Pressure Duct electrical characteristics

Model	Power supply						Indoor Fan Motor	
	Hz	Volts (V)	Min. volts	Max. volts	MCA (A)	MFA (A)	Rated power output (W)	FLA (A)
VEHP019T0A-DCV056	50/60	220-240	198	264	2.33	15	240	1.86
VEHP024T0A-DCV071	50/60	220-240	198	264	2.33		240	1.86
VEHP027T0A-DCV080	50/60	220-240	198	264	2.33		240	1.86
VEHP031T0A-DCV090	50/60	220-240	198	264	2.46		240	1.97
VEHP038T0A-DCV112	50/60	220-240	198	264	3.34		560	2.67
VEHP042T0A-DCV125	50/60	220-240	198	264	3.38		560	2.70
VEHP048T0A-DCV140	50/60	220-240	198	264	3.75		560	3.00
VEHP060T0A-DCV160	50/60	220-240	198	264	4.13		560	3.30
VEHA070T0A-DCV200	50/60	220-240	198	264	8.19	30	920	6.55
VEHA076T0A-DCV224	50/60	220-240	198	264	8.19		920	6.55
VEHA086T0A-DCV252	50/60	220-240	198	264	8.19		920	6.55
VEHA096T0A-DCV280	50/60	220-240	198	264	8.19		920	6.55
VEHA114T0A-DCV335	50/60	220-240	198	264	8.31		920	6.65
VEHA136T0A-DCV400	50/60	220-240	198	264	12.98		2300	10.38
VEHA153T0A-DCV450	50/60	220-240	198	264	12.98		2300	10.38
VEHA191T0A-DCV560	50/60	220-240	198	264	15.49		2300	12.39

Abbreviations:
MCA: Min. Circuit Amps. (A), which is used to select the minimum circuit size to ensure safe operation over a long period of time.
MFA: Max. Fuse Amps. (A), which is used to select the circuit breaker.
FLA: Full Load Amps. (A), which is the full load current of the indoor fan motor (reliable operation at the fastest speed setting).

8 Sound Levels

8.1 Overall

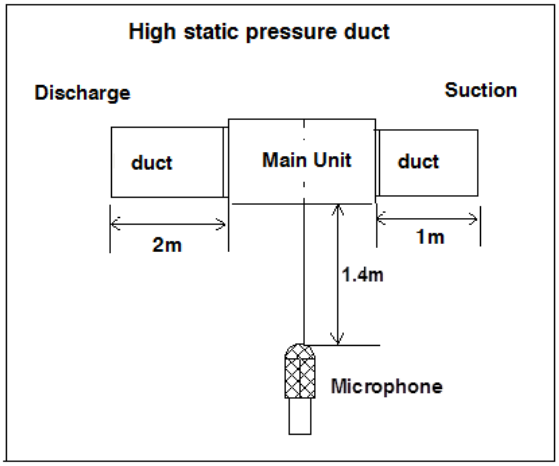
Table 8.1: High Static Pressure Duct sound pressure levels[1]

Model name	Sound pressure levels dB(A)						
	SSH	SH	H	M	L	SL	SSL
VEHP019T0A-DCV056	39	38	36	35	33	32	30
VEHP024T0A-DCV071	39	38	36	35	33	32	30
VEHP027T0A-DCV080	39	38	36	35	33	32	30
VEHP031T0A-DCV090	40	39	37	36	34	33	31
VEHP038T0A-DCV112	41	40	38	37	35	34	32
VEHP042T0A-DCV125	41	40	39	37	36	35	33
VEHP048T0A-DCV140	43	42	40	39	37	36	34
VEHP060T0A-DCV160	44	43	41	40	38	37	35
VEHA070T0A-DCV200	51	50	48	46	44	43	42
VEHA076T0A-DCV224	51	50	48	46	44	43	42
VEHA086T0A-DCV252	51	50	48	46	44	43	42
VEHA096T0A-DCV280	51	50	48	46	44	43	42
VEHA114T0A-DCV335	52	51	49	48	46	44	43
VEHA136T0A-DCV400	58	56	54	52	50	49	48
VEHA153T0A-DCV450	58	56	54	52	50	49	48
VEHA191T0A-DCV560	59	58	56	54	53	51	49

Notes:

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

Figure 8.1: High Static Pressure Duct sound pressure level measurement



8.2 Octave Band Levels

Figure 8.2: VEHP019(024,027)T0A octave band levels

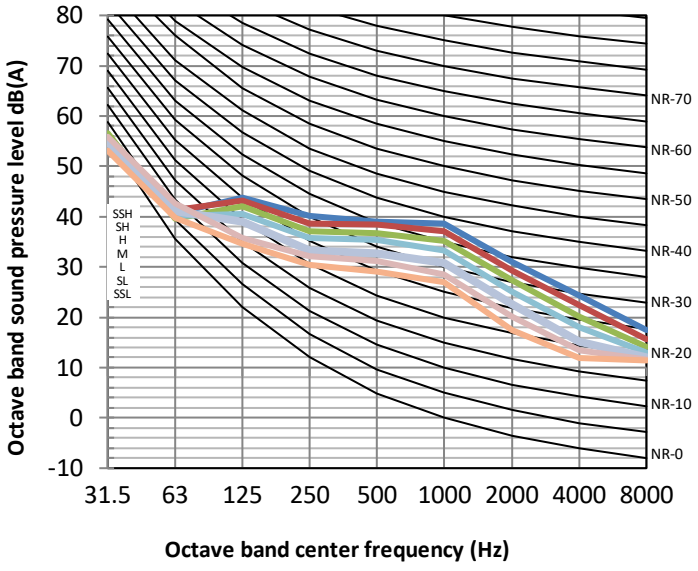


Figure 8.3: VEHP031T0A-DCV090 octave band levels

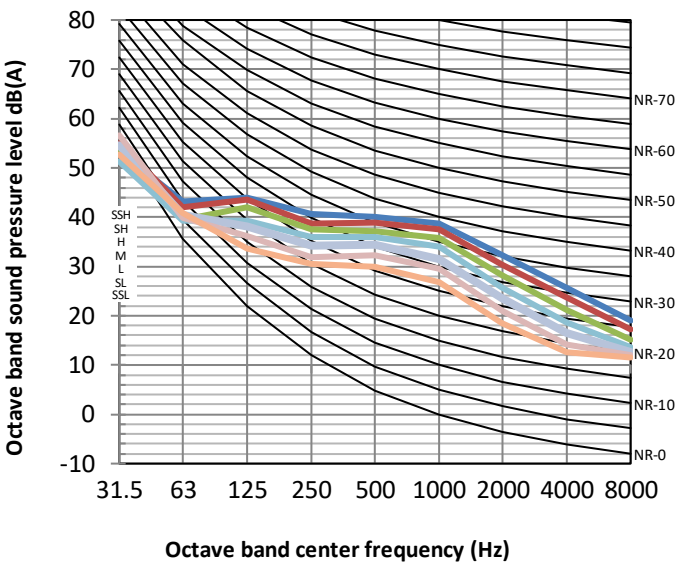


Figure 8.4: VEHP038T0A-DCV112 octave band levels

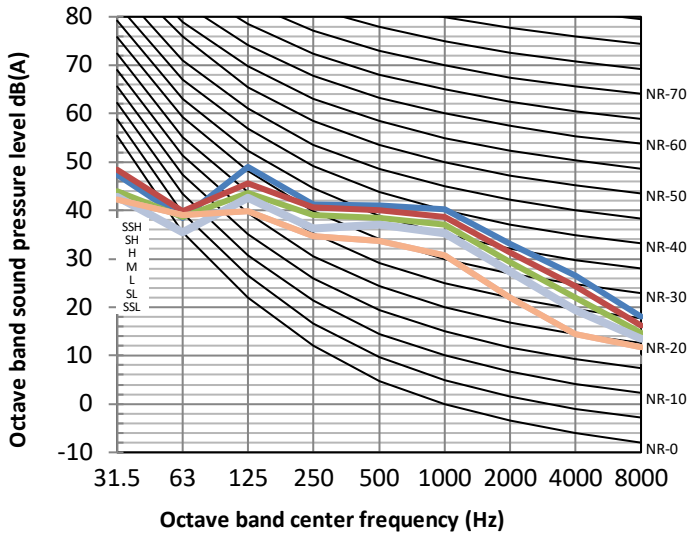


Figure 8.5: VEHP042T0A-DCV125 octave band levels

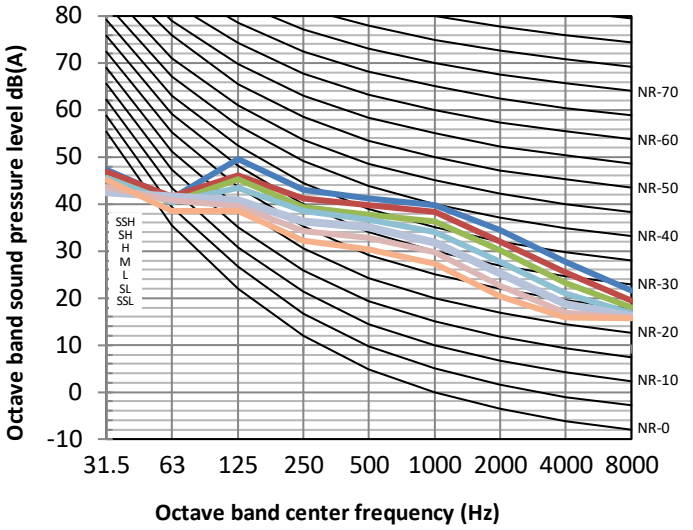


Figure 8.6: VEHP048T0A-DCV140 octave band levels

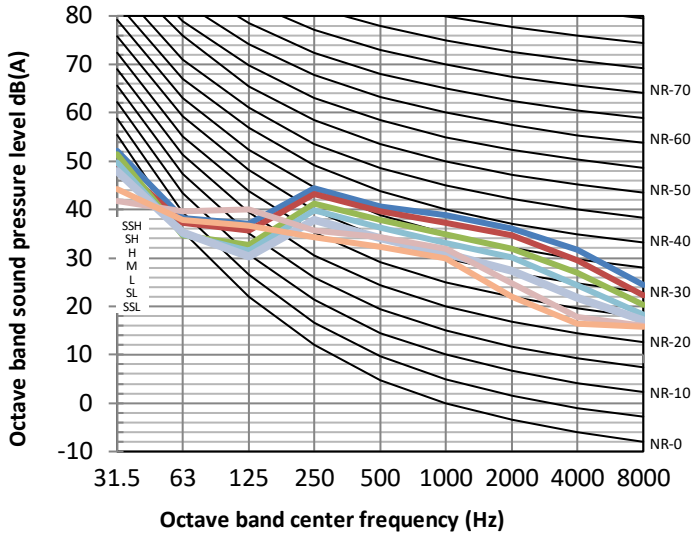


Figure 8.7: VEHP060T0A-DCV160 octave band levels

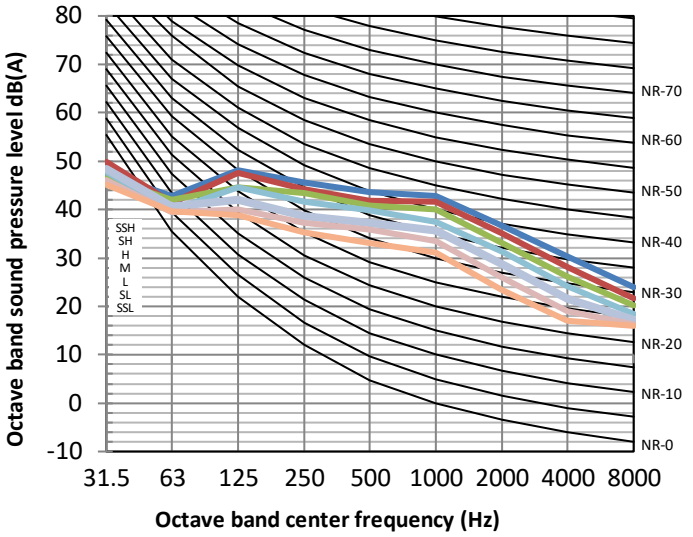


Figure 8.8: VEHA070T0A-DCV200 octave band levels

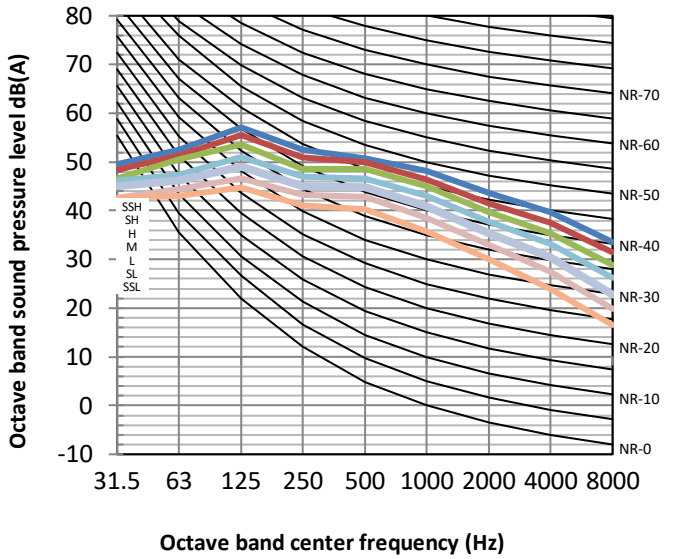


Figure 8.9: VEHA076T0A-DCV224 octave band levels

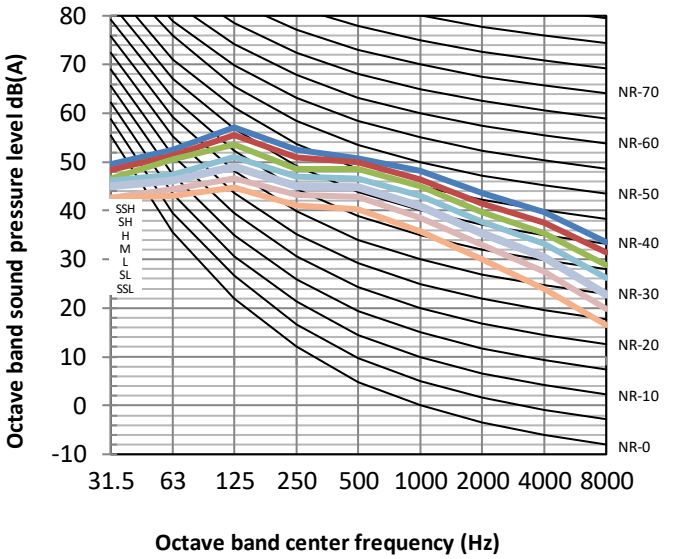


Figure 8.10: VEHA086T0A-DCV252 octave band levels

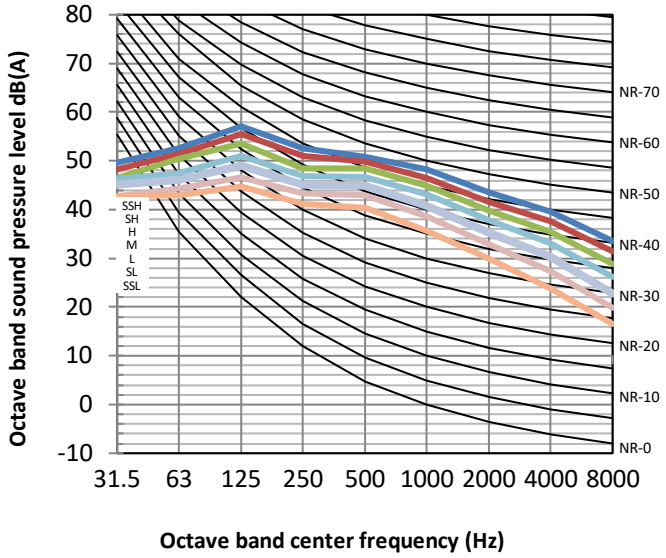


Figure 8.11: VEHA096T0A-DCV280 octave band levels

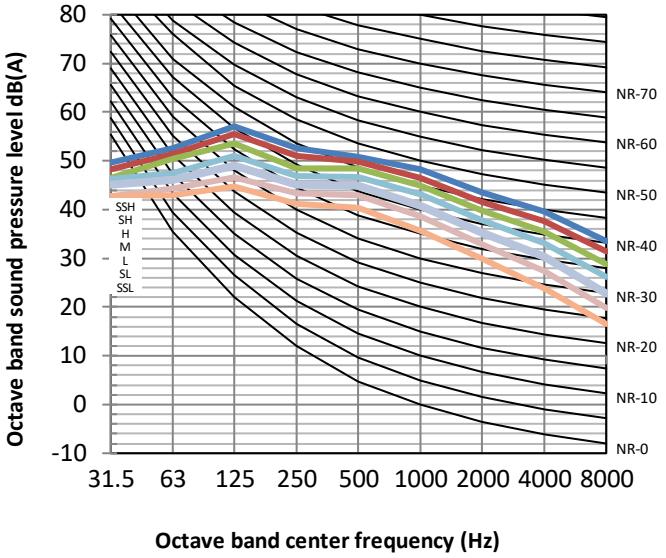


Figure 8.12: VEHA114T0A-DCV335 octave band levels

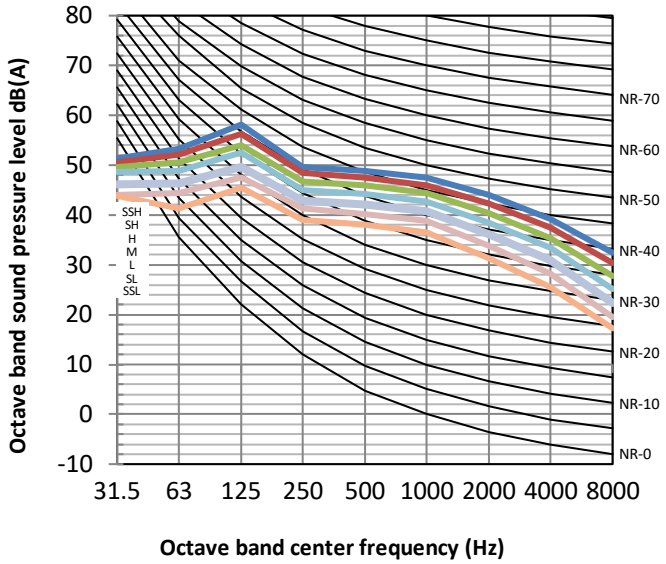


Figure 8.13: VEHA136T0A-DCV400octave band levels

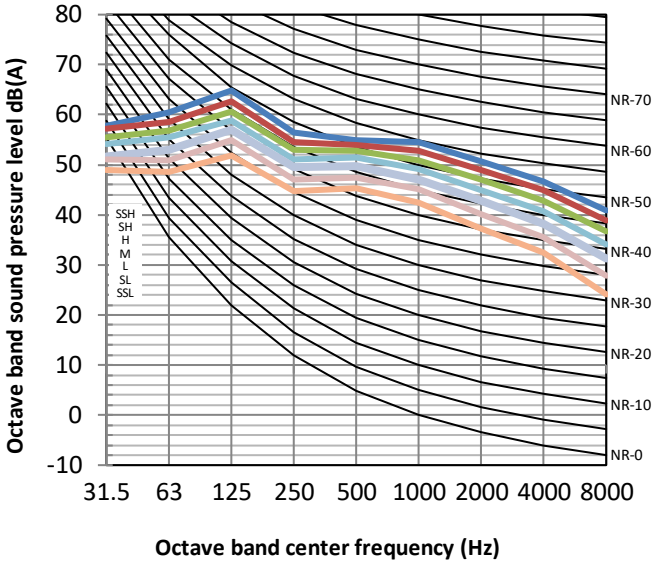


Figure 8.14: VEHA153T0A-DCV450 octave band levels

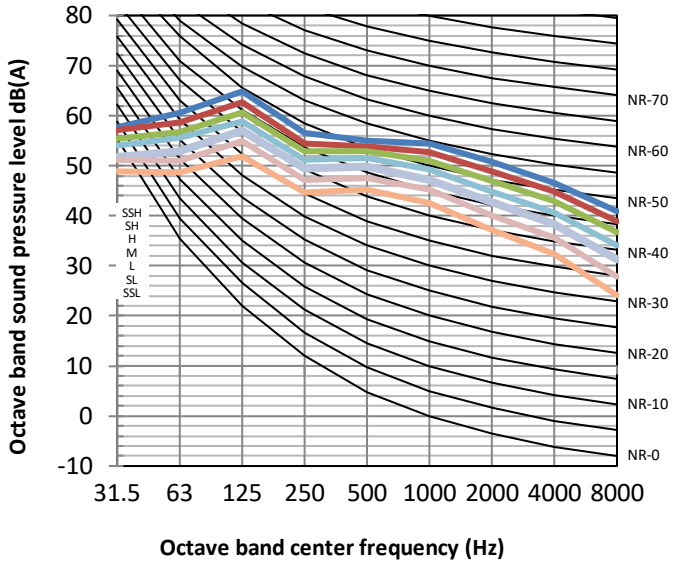
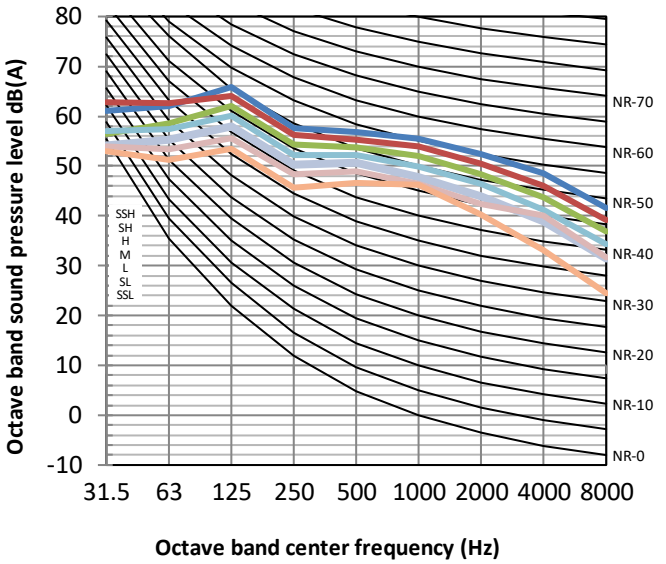


Figure 8.15: VEHA191T0A-DCV560 octave band levels



9 Fan Performance

9.1 How to switch between Constant Airflow mode and Constant Speed mode

①In the main interface, press "☰" +"⬀" for 3 seconds at the same time, and the main interface will display "CC". Press the "▲" and "▼" to select the indoor unit ("n00-n63" is displayed, and the last two digits are the indoor unit addresses). Press the "⬀" to enter the parameter setting interface, and "n00" will be displayed.

②Press the "▲" and "▼" until "N30" is displayed on the page, and then press the "⬀" to enter the mode setting. Use the "▲" and "▼" keys to adjust to the demand mode parameter values, and press the "⬀" to confirm.

③Press the "🕒" button to return to the previous menu and exit the parameter setting. Parameter setting will also exit after 60 s of no operation

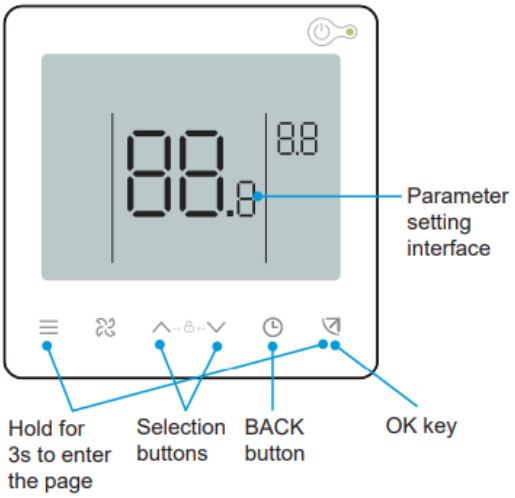


Table 9.1: Mode setting

First level menu	Second level menu	Description	Default
n30	00	Constant Speed	-
	01	Constant Airflow	√

Notes:

1. The above is only an example. If you choose other controllers, please refer to their instructions for setting.

9.2 Constant Airflow mode

9.2.1 Fan performance diagram

Figure 9.1: VEHP019(024,027)T0A

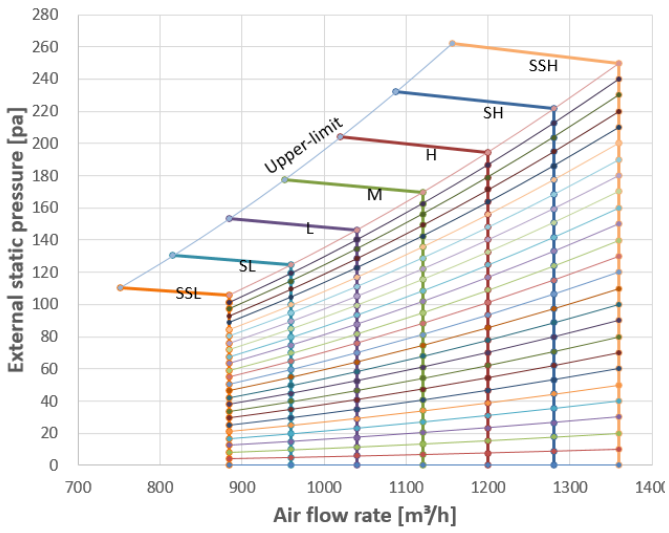


Figure 9.2: VEHP031T0A-DCV090

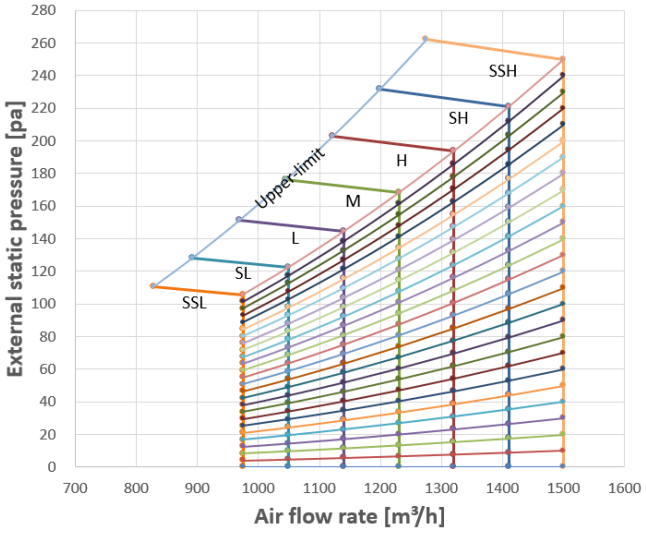


Figure 9.3: VEHP038T0A-DCV112

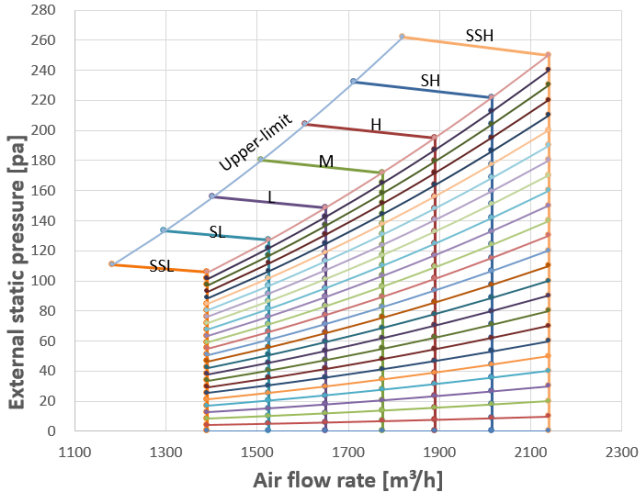


Figure 9.4: VEHP042T0A-DCV125

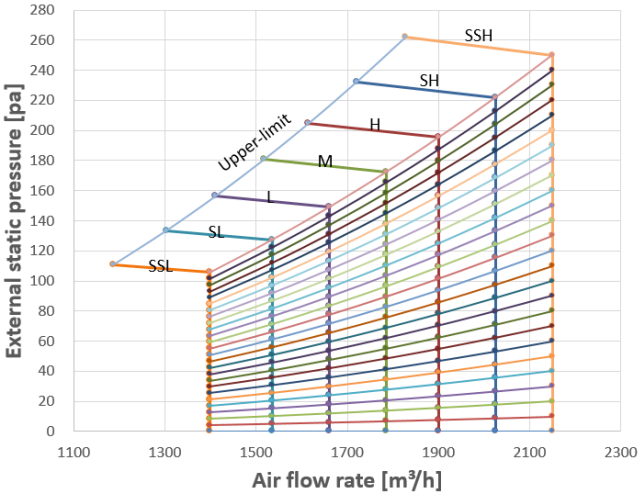


Figure 9.5: VEHP048T0A-DCV140

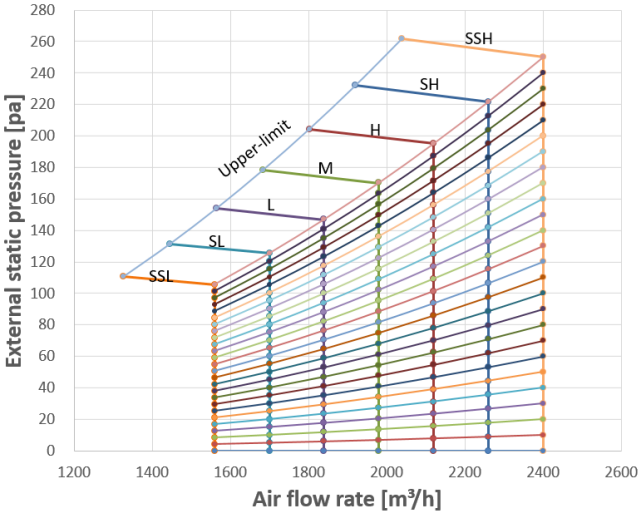


Figure 9.6: VEHP060T0A-DCV160

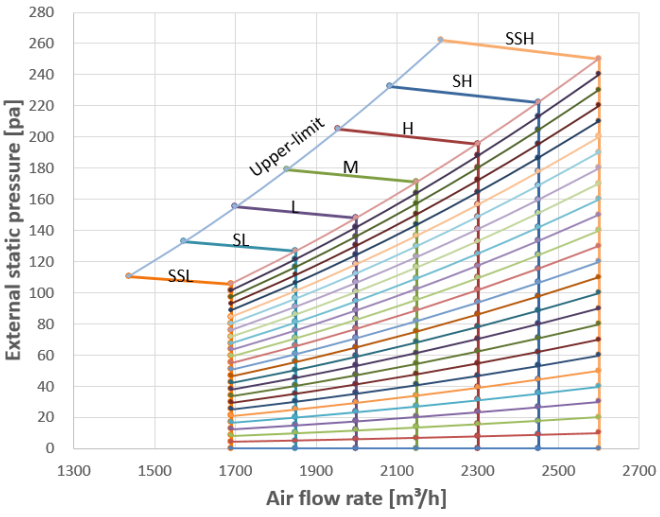


Figure 9.7: VEHA070T0A-DCV200

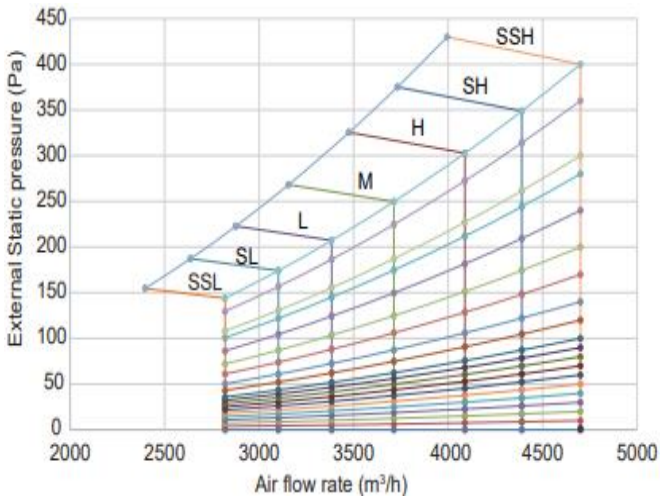


Figure 9.8: VEHA076T0A-DCV224

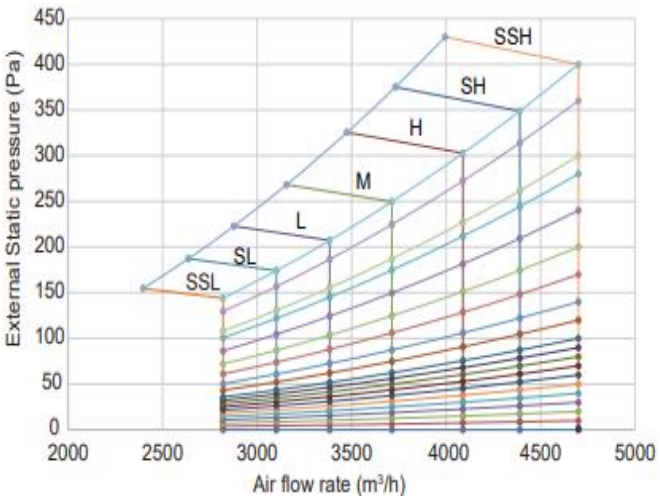


Figure 9.9: VEHA086T0A-DCV252

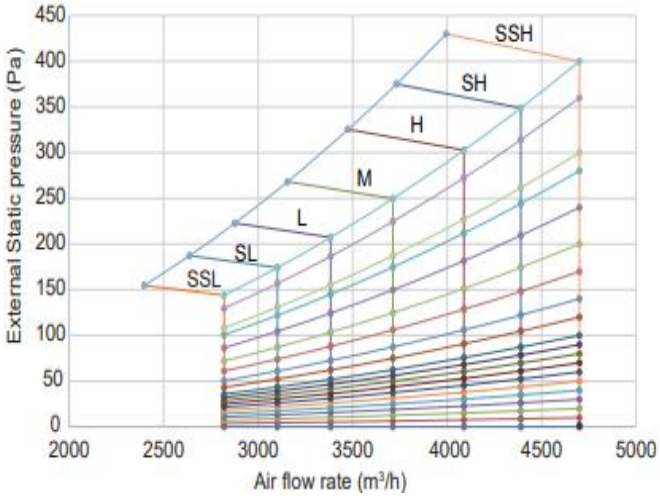


Figure 9.10: VEHA096T0A-DCV280

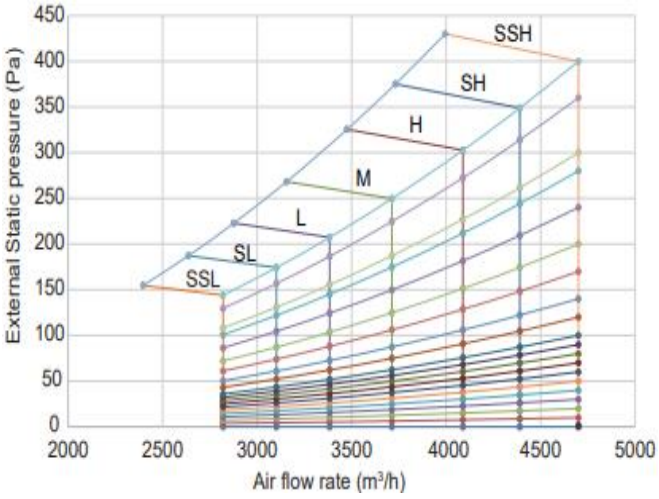


Figure 9.11:VEHA114T0A-DCV335

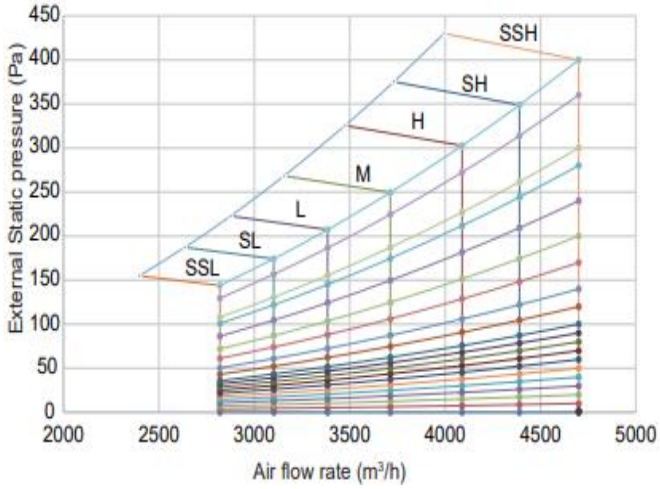


Figure 9.12: VEHA136T0A-DCV400

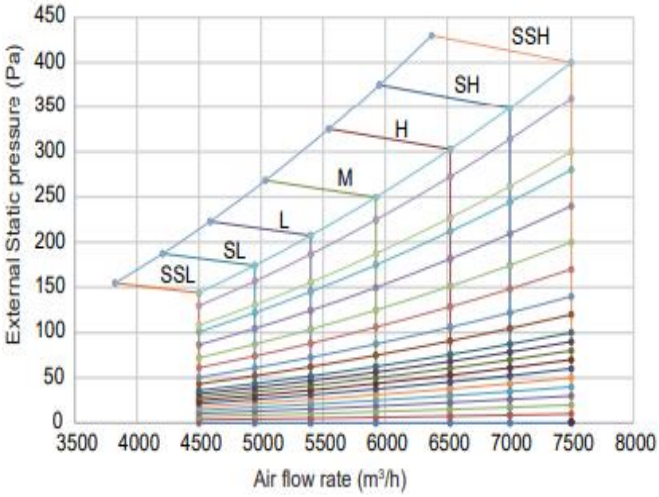


Figure 9.13: VEHA153T0A-DCV450

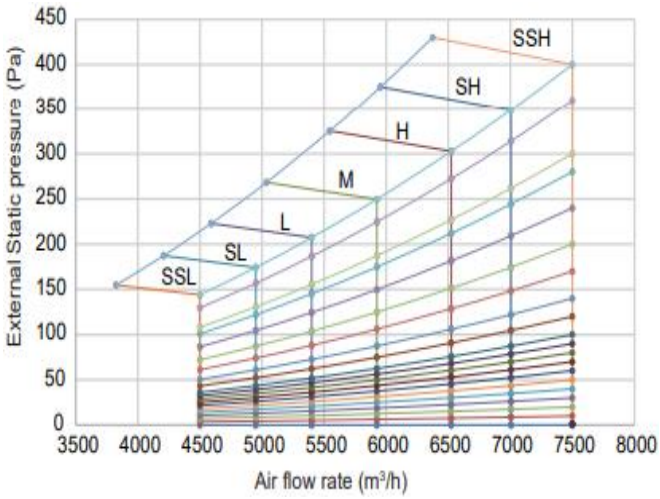
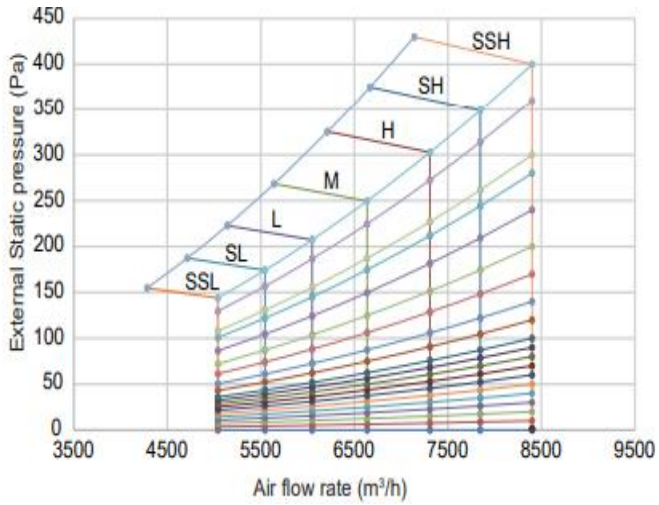


Figure 9.14: VEHA191T0A-DCV560



9.2.2 How to Read the Diagram (Constant Airflow mode)

The vertical axis is the External Static Pressure (Pa) while the horizontal axis represents the Air Flow (m^3/h). The characteristic curve for the “SSH”,“SH”, “H”, “M”, “L”,”SL” and “SSL” fan speed control.

For MIH140T1HN18, in “H” windshield, when the external static pressure is less than 195 Pa, the air flow keeps 2120 m3/h, but when the externa static pressure is greater than 195 Pa, the air flow begins to decline, and the allowable maximum external static pressure is 204 Pa.

9.3 Constant Speed mode

9.3.1 Set external static pressure parameters

①In the main interface, press "☰" +"⧄" for 3 seconds at the same time, and the main interface will display "CC". Press the "▲" and "▼" to select the indoor unit ("n00-n63" is displayed, and the last two digits are the indoor unit addresses). Press the "⧄" to enter the parameter setting interface, and "n00" will be displayed.

②When "n00" is displayed, press the "⧄" to enter the static pressure setting. Use the "▲" and "▼" keys to adjust to the demand parameter values, and press the "⧄" to confirm.

③Press the "🕒" button to return to the previous menu and exit the parameter setting. Parameter setting will also exit after 60 s of no operation

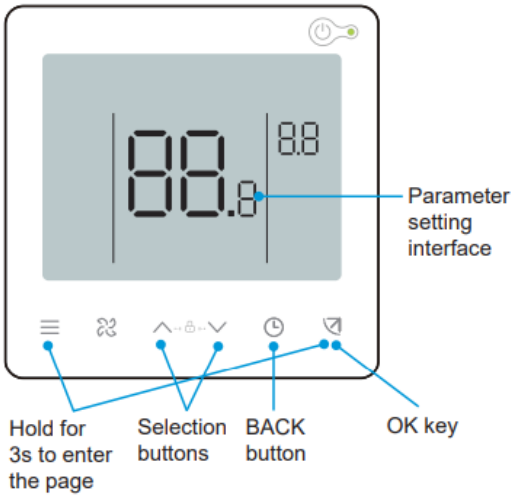


Table 9.1: External static pressure setting (5.6-16kW)

First level menu	Second level menu	Description	Default
N00	00/01/02/03/04/05/~/19	Static pressure level	08(5.6-11.2kW) 10(12.5-16.0kW)

Level	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
Static pressure(Pa)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	160	180	200	220	250

Table 9.2: External static pressure setting (20-56kW)

First level menu	Second level menu	Description	Default
N00	00/01/02/03/04/05/~/19	Static pressure level	14(20-33.5kW) 17(40-56kW)

Level	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19
Static pressure(Pa)	0	10	20	30	40	50	60	70	80	90	100	120	140	170	200	240	280	300	360	400

Notes:

1. The above is only an example of 86S wired controller. If you choose other controllers, please refer to their manuals for setting.

9.3.2 Fan performance diagram

Figure 9.15: VEHP019(024,027)T0A

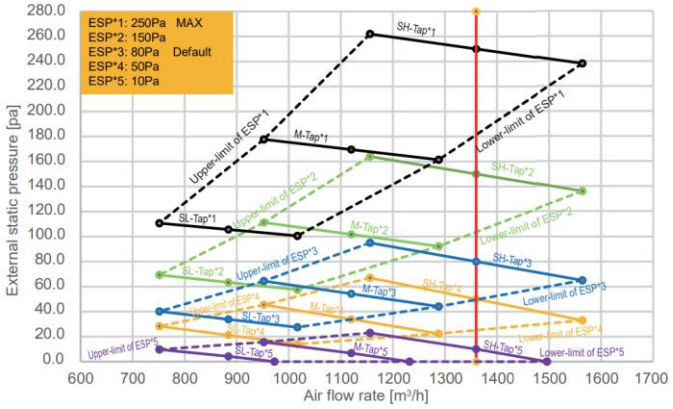


Figure 9.16:VEHP031T0A-DCV090

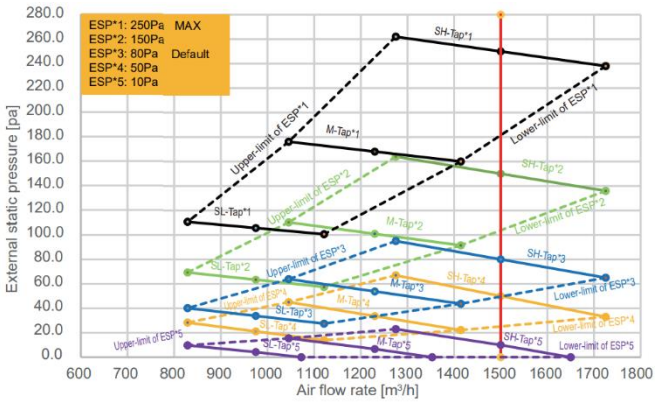


Figure 9.17: VEHP038T0A-DCV112

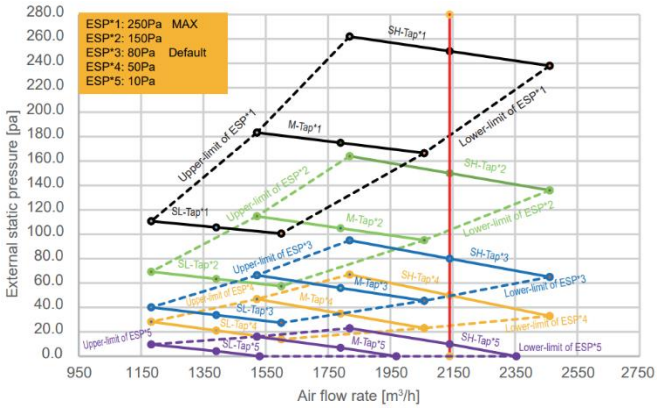


Figure 9.18: VEHP042T0A-DCV125

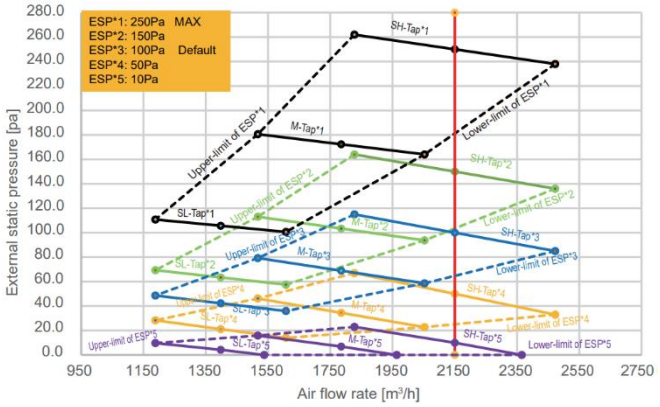


Figure 9.19: VEHP048T0A-DCV140

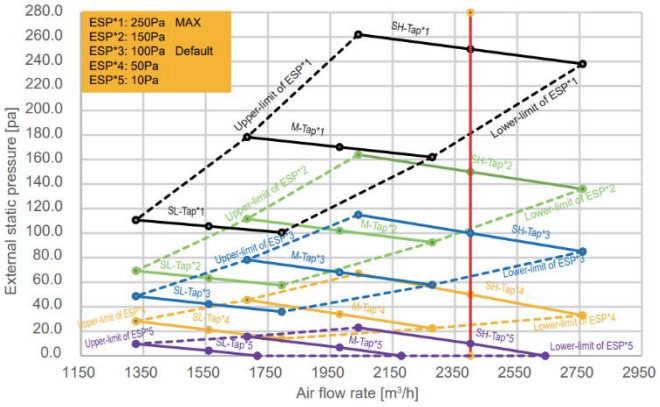


Figure 9.20: VEHP060T0A-DCV160

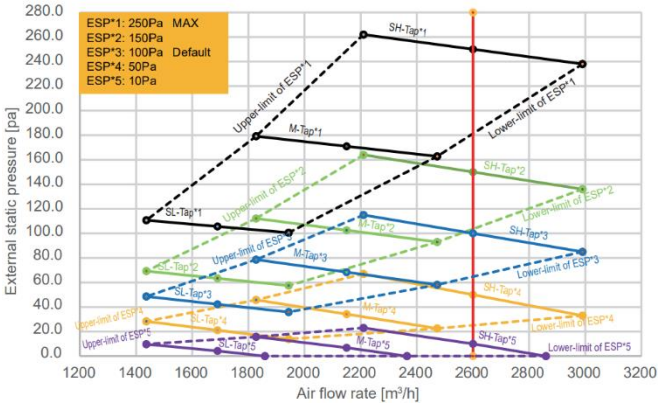


Figure 9.21: VEHA070T0A-DCV200

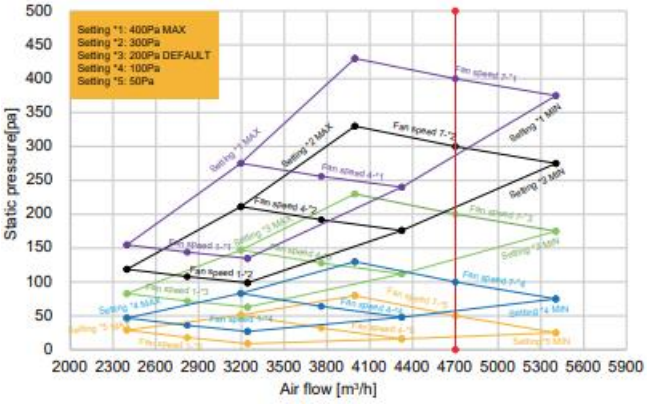


Figure 9.22: VEHA076T0A-DCV224

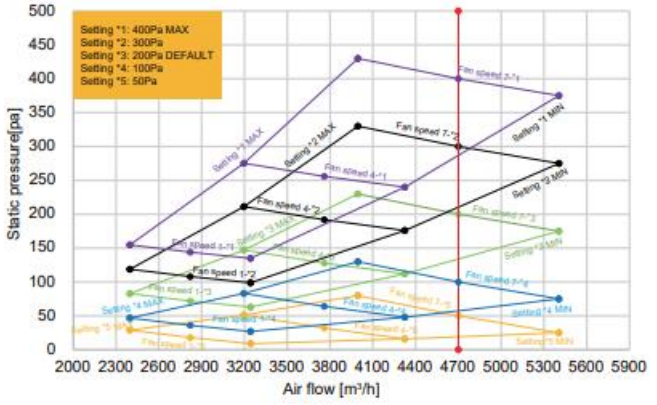


Figure 9.23: VEHA086T0A-DCV252

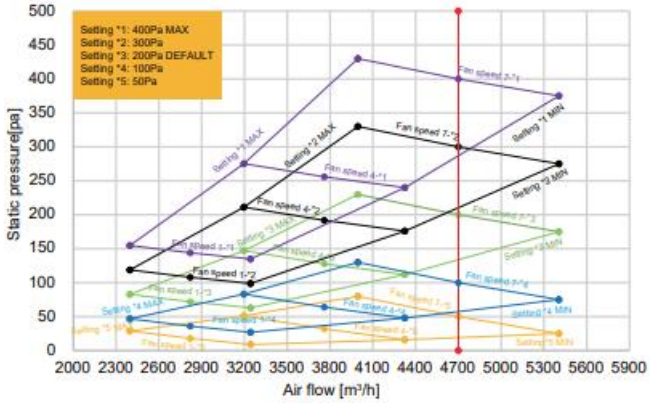


Figure 9.24: VEHA096T0A-DCV280

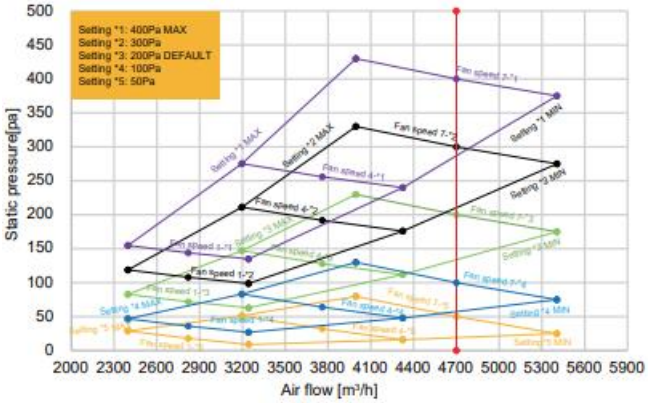


Figure 9.25: VEHA114T0A-DCV335

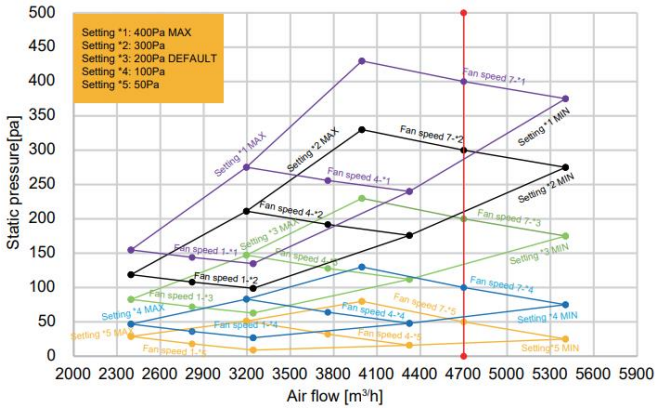


Figure 9.26: VEHA136T0A-DCV400

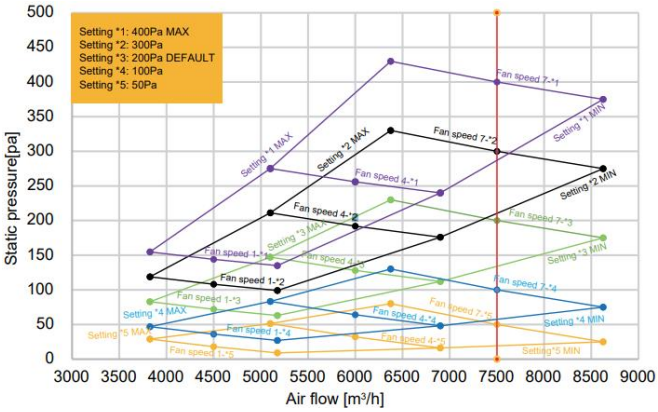


Figure 9.27:VEHA153T0A-DCV450

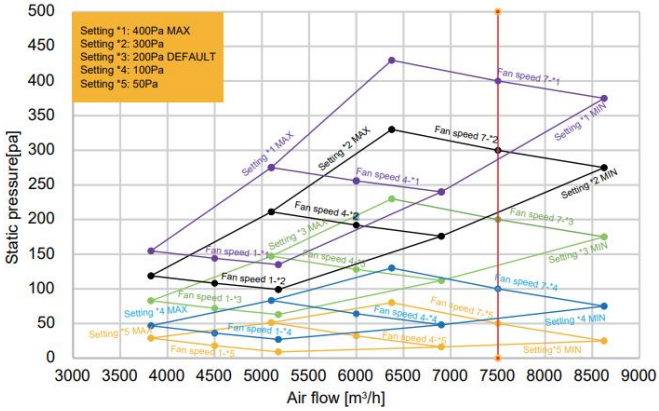
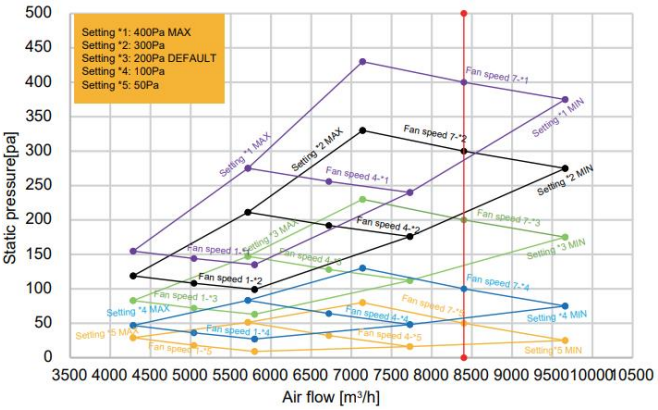


Figure 9.28: VEHA191T0A-DCV560



9.3.3 How to Read the Diagram (Constant Speed mode)

The vertical axis is the External Static Pressure (Pa) while the horizontal axis represents the Air Flow (m^3/h). The characteristic curve for the “SH”, “M” and “SL” fan speed control.

The Air Flow decreases with the increase of the external static pressure. For MIH140T1HN18, in “SH” windshield and “100Pa” setting static pressure, when the externa static pressure is 100Pa, the air flow is 2400 m3/h, and the allowable externa static pressure range is 85Pa to 115Pa.

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