

Ventilation

Technical Data

Heat Reclaim Ventilation



EEDEN13-205

VAM-FA/FB



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EEDEN13-205

VAM-FA/FB

TABLE OF CONTENTS

VAM-FA/FB

1	Features	2
2	Specifications	3
	Technical Specifications	3
	Electrical Specifications	5
3	Electrical data	6
	Electrical Data	6
4	Options	7
	Options	7
5	Exchange efficiency	8
	Exchange efficiency	8
6	Dimensional drawings	9
	Dimensional Drawings	9
7	Centre of gravity	14
	Centre of Gravity	14
8	Wiring diagrams	17
	Wiring Diagrams - Single Phase	17
9	Sound data	21
	Sound Power Spectrum	21
	Sound Pressure Spectrum	24
10	Fan characteristics	27
	Fan Characteristics	27
11	Air filter characteristics	32
	High efficiency filter / dust filter for VAM350-2000FB	32
	Air filter characteristics	34
12	Installation	37
	Installation Method	37

1 Features

- Energy saving ventilation by recovery of indoor unit heat/cold
- Ideal solution for shops, restaurants or offices requiring maximum floor space for furniture, decorations and fittings
- Free cooling when outdoor temperature is below indoor temperature (eg. during night time)
- Low energy consumption thanks to DC inverter fans
- Prevent energy losses from over-ventilation while maintaining indoor air quality with CO₂ sensor (optional)
- Can be used as stand alone unit or integrated in the VRV system
- Wide range of units: air flow rate from 150 up to 2,000 m³/h
- High efficiency filters available in F6 ,F7, F8 grades
- Specially developed heat exchange element with High Efficiency Paper (HEP)
- No drain piping needed
- Can operate in over- and under pressure

1



2 Specifications

2-1 Technical Specifications				VAM150FA	VAM250FA	VAM350FB	VAM500FB	VAM650FB	VAM800FB	VAM1000FB	VAM1500FB	VAM2000FB	
Power input - 50Hz	Heat exchange mode	Nom.	Ultra high	kW	0.116	0.141	0.132	0.178	0.196	0.373	0.375	0.828	0.852
			High	kW	0.100	0.112	0.107	0.135	0.129	0.270	0.275	0.668	0.695
			Low	kW	0.056	0.062	0.042	0.076	0.073	0.102	0.168	0.313	0.291
	Bypass mode	Nom.	Ultra high	kW	0.116	0.141	0.132	0.178	0.196	0.373	0.375	0.828	0.852
			High	kW	0.100	0.112	0.107	0.135	0.129	0.270	0.275	0.668	0.695
			Low	kW	0.056	0.062	0.042	0.076	0.073	0.102	0.168	0.313	0.291
Power input - 60Hz	Heat exchange mode	Nom.	Ultra high	kW	0.117	0.138	0.132	0.178	0.196	0.373	0.375	0.828	0.852
			High	kW	0.099	0.119	0.107	0.135	0.129	0.270	0.275	0.668	0.695
			Low	kW	0.056	0.062	0.042	0.076	0.073	0.102	0.168	0.313	0.291
	Bypass mode	Nom.	Ultra high	kW	0.117	0.138	0.132	0.178	0.196	0.373	0.375	0.828	0.852
			High	kW	0.099	0.119	0.107	0.135	0.129	0.270	0.275	0.668	0.695
			Low	kW	0.056	0.062	0.042	0.076	0.073	0.102	0.168	0.313	0.291
Temperature exchange efficiency - 50Hz	Ultra high		%	74	72	75	74			75			
	High		%	74	72	75	74			75			
	Low		%	79	77	80	77		76	76.5	78		
Temperature exchange efficiency - 60Hz	Ultra high		%	74	72	75	74			75			
	High		%	74	72	75	74			75			
	Low		%	80	77	80	77		76	76.5	78		
Enthalpy exchange efficiency - 50Hz	Cooling	Ultra high		%	58		61	58		60	61		
		High		%	58		61	58		60	61		
		Low		%	64	62	67	63		62	63	64	66
	Heating	Ultra high		%	64		65	62	63	65		66	
		High		%	64		65	62	63	65		66	
		Low		%	69	68	70	67	66	67	68		70
Enthalpy exchange efficiency - 60Hz	Cooling	Ultra high		%	58		61	58		60	61		
		High		%	58		61	58		60	61		
		Low		%	66	63	67	63		62	63	64	66
	Heating	Ultra high		%	64		65	62	63	65		66	
		High		%	64		65	62	63	65		66	
		Low		%	71	69	70	67	66	67	68		70
Operation mode				Heat exchange mode / Bypass mode / Fresh-up mode									
Heat exchange system				Air to air cross flow total heat (sensible + latent heat) exchange									
Heat exchange element				Specially processed non-flammable paper									
Connection ratio	Outdoor units	with only ventilation units connected	Minimum	%	-								
			Maximum	%	-								
	Ventilation units	when combined with VRV® indoor units	Maximum	%	-								
Casing				Material Galvanised steel plate									
Dimensions	Unit	Height	mm	285		301		364			726		
		Width	mm	776		828		1,004			1,512		
		Depth	mm	525		816		868		1,156	868	1,156	
Weight	Unit	kg	24		33		52	55	64	131	152		

2 Specifications

2-1 Technical Specifications				VAM150FA	VAM250FA	VAM350FB	VAM500FB	VAM650FB	VAM800FB	VAM1000FB	VAM1500FB	VAM2000FB		
Fan	Type			Sirocco fan										
	Air flow rate - 50Hz	Heat exchange mode	Ultra high	m³/h	150	250	350	500	650	800	1,000	1,500	2,000	
			High	m³/h	150	250	-							
			Low	m³/h	110	155	-							
		Bypass mode	Ultra high	m³/h	150	250	350	500	650	800	1,000	1,500	2,000	
			High	m³/h	150	250	-							
			Low	m³/h	110	155	-							
	Air flow rate - 60Hz	Heat exchange mode	Ultra high	m³/h	150	250	-							
			High	m³/h	150	250	-							
			Low	m³/h	110	145	-							
		Bypass mode	Ultra high	m³/h	150	250	-							
			High	m³/h	150	250	-							
			Low	m³/h	110	145	-							
	External static pressure - 50Hz	Ultra high		Pa	69	64	98		93	137	157	137		
		High		Pa	39			-						
		Low		Pa	20			-						
	External static pressure - 60Hz	Ultra high		Pa	98			-						
		High		Pa	54			-						
Low		Pa	24	20	-									
Fan motor	Quantity			2								4		
	Output	50 Hz		W	30			80		106	210			
		60 Hz		W	30			80		106	210			
Sound pressure level - 50Hz	Heat exchange mode	Ultra high	dBA	27 / 28.5	28 / 29	32	33	34.5	36		39.5	40		
		High	dBA	26 / 27.5	26 / 27	31.5		33	34.5	35	38			
		Low	dBA	20.5 / 21.5	21 / 22	23.5	24.5	27	31		34	35		
	Bypass mode	Ultra high	dBA	27 / 28.5	28 / 29	32	33.5	34.5	36		40.5	40		
		High	dBA	26.5 / 27.5	27 / 28	31	32.5	34	34.5	35.5	38			
		Low	dBA	20.5 / 21.5	21 / 22	24.5	25.5	27	31		33.5	35		
Sound pressure level - 60Hz	Heat exchange mode	Ultra high	dBA	28.5	29.5	34	34.5	35.5	37		41.5	42.5		
		High	dBA	26.5	26	33		34	36		39	41		
		Low	dBA	19	19.5	26	26.5	28	32		36	37		
	Bypass mode	Ultra high	dBA	28	29	34	34.5	35.5	37		41.5	42.5		
		High	dBA	27		32.5	33.5	35	36		39	41		
		Low	dBA	20	20.5	26.5	27.5	28.5	33	32	36	37		
Operation range	Min.		°CDB	-15										
	Max.		°CDB	50										
	Relative humidity		%	80% or less										
	On coil temperature	Cooling	Max.	°CDB	-									
Heating		Min.	°CDB	-										
Connection duct diameter			mm	100	150	200		250		350				
Insulation material				Self-extinguishable urethane foam										

Standard Accessories : Installation and operation manual;

2 Specifications

2-2 Electrical Specifications			VAM150FA	VAM250FA	VAM350FB	VAM500FB	VAM650FB	VAM800FB	VAM1000FB	VAM1500FB	VAM2000FB		
Power supply	Name		VE										
	Phase		1~										
	Frequency	Hz	50/60										
	Voltage		V	220-240/220									
Voltage range	Min.	%	-10										
	Max.	%	10										
Current	Minimum circuit amps (MCA)		A	0.9		1.3	1.6	2.5	3.0	5.0			
	Maximum fuse amps (MFA)		A	15		16							
	Fan motor rated output		kW	0.03x2		0.08x2		0.106x2	0.210x2		0.210x4		
	Full load amps (FLA)	Fan motor	A	0.4		0.6	0.7	1.1	1.3	2.2			
		Fan motor 2	A	0.4		0.6	0.7	1.1	1.3	2.2			
		Fan motor 3	A	-									
		Fan motor 4	A	-									
	Normal amps - 50Hz	Heat exchange mode	Ultra high	A	0.67	0.72	0.60	0.81	0.93	1.69	1.71	3.76	3.87
			High	A	0.57		0.49	0.62		1.23	1.25	3.04	3.16
			Low	A	0.33	0.32	0.19	0.34	0.35	0.46	0.76	1.42	1.32
		Bypass mode	Ultra high	A	0.67	0.72	0.60	0.81	0.93	1.69	1.71	3.76	3.87
			High	A	0.57		0.49	0.62		1.23	1.25	3.04	3.16
			Low	A	0.33	0.32	0.19	0.34	0.35	0.46	0.76	1.42	1.32
	Normal amps - 60Hz	Heat exchange mode	Ultra high	A	0.66	0.64	0.60	0.81	0.93	1.69	1.71	3.76	3.87
			High	A	0.59	0.56	0.49	0.62		1.23	1.25	3.04	3.16
			Low	A	0.33	0.29	0.19	0.34	0.35	0.46	0.76	1.42	1.32
Bypass mode		Ultra high	A	0.66	0.64	0.60	0.81	0.93	1.69	1.71	3.76	3.87	
		High	A	0.59	0.56	0.49	0.62		1.23	1.25	3.04	3.16	
		Low	A	0.33	0.29	0.19	0.34	0.35	0.46	0.76	1.42	1.32	

Notes

- (1) Operation sound is measured at 1.5m below the center of the body.
- (2) Air flow rate can be changed to Low mode or High mode.
- (3) Normal amplitude, input and efficiency depend on the mentioned conditions.
- (4) Sound values are measured in an anechoic chamber. Operating sound level generally becomes higher than this value depending on the operating conditions, reflected sound, and peripheral noise.
- (5) The noise level at the air discharge port is about 8dB higher than the operating sound of the unit.
- (6) The specifications, designs and information here are subject to change without notice.
- (7) Voltage range: units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.
- (8) Maximum allowable voltage range variation between phases is 2%.
- (9) MCA/MFA: $MCA = 1.25 \times FLA(FM1) + FLA(FM2)$; $MFA \leq 4 \times FLA$; (VAM2000 is regarded as 2x VAM1000)
- (10) Select wire size based on the value of MCA
- (11) Instead of a fuse, use a circuit breaker
- (12) $MCA = 1.25 \times FLA (FM1) + FLA (FM2)$
- (13) MCA represents maximum input current. MFA represents capacity which may accept MCA.
- (14) Next lower standard fuse rating minimum 16A

3 Electrical data

3 - 1 Electrical Data

3

VAM350-2000FB						
Unit model name	Power supply				FM	
	50Hz	60Hz	MCA	MFA	kW	FLA
VAM350FB	Power supply Max.: 264V Min.: 198V	Power supply Max.: 242V Min.: 198V	0.9	16	0.08 x 2	0.4 x 2
VAM500FB			1.3	16	0.08 x 2	0.6 x 2
VAM650FB			1.6	16	0.106 x 2	0.7 x 2
VAM800FB			2.5	16	0.210 x 2	1.1 x 2
VAM1000FB			3.0	16	0.210 x 2	1.3 x 2
VAM1500FB			5.0	16	0.210 x 2	2.2 x 4
VAM2000FB			5.0	16	0.210 x 2	2.2 x 4

LEGEND

MCA : minimum circuit Amps. (A)
MFA : maximum fuse Amps. (A) (see note 5)
kW : fan motor rated output (kW)
FLA : full load Amps. (A)
FM : Fan motor

NOTES

- Voltage range:
The units are suitable for use on electrical systems where the voltage, supplied to unit terminals, is not below or above listed range limits.
- The maximum allowable voltage variation between phases is 2%.
- MCA = 1.25 x FLA (FM1) + FLA (FM2)
MCA represents maximum unit input current.
MFA represents acceptable capacity for MCA.
(Next lower standard fuse rating minimum 16A).
- Select a wire size based on the MCA value.
- Instead of a fuse, use a circuit breaker.

4D082062

4 Options

4 - 1 Options

VAM150-250FA, VAM350-2000FB

Item		Model	VAM150FA	VAM250FA	VAM350FB	VAM500FB	VAM650FB	VAM800FB	VAM1000FB	VAM1500FB	VAM2000FB	
Controlling device	Remote control		BRC301B61									
	Wired remote control		BRC1D52									
			BRC1E52A / BRC1E52B ⁽¹⁾									
	Centralized controlling device	Central remote control		DCS302C51 (For General) ⁽²⁾								
		Unified on/off controller		DCS301B51 (For EC Market) ⁽²⁾								
		Schedule timer		DST301B51 (For EC Market) ⁽²⁾								
	PC board adapter ⁽⁴⁾	For humidifier or heater kit ⁽³⁾		BRP4A50A (incl. installation box)								
		For humidifier ⁽³⁾		KRP50-2								
For heater kit ⁽³⁾			+ installation box KRP50-2A90									
Fixing plate to install a PCB on double VAM			BRP4A50								EKMPVAM	

Model type: ceiling mounted duct connection

Item		Model	VAM150FA	VAM250FA	VAM350FB	VAM500FB	VAM650FB	VAM800FB	VAM1000FB	VAM1500FB	VAM2000FB
Additional function	Silencer	Model name	-	-	-	KDDM24B50	KDDM24B100	KDDM24B100	KDDM24B100	KDDM24B100 x 2	KDDM24B100 x 2
		Nominal pipe diameter (mm)	-	-	-	ø200	ø200	ø250	ø250	ø250	ø250
	Air filter EN779:2012 ⁽⁵⁾	Medium - M6	-	-	EKAFV50F6	EKAFV50F6	EKAFV80F6	EKAFV80F6	EKAFV100F6	EKAFV100F6 x 2	EKAFV100F6 x 2
		Fine - F7	-	-	EKAFV50F7	EKAFV50F7	EKAFV80F7	EKAFV80F7	EKAFV100F7	EKAFV100F7 x 2	EKAFV100F7 x 2
		Fine - F8	-	-	EKAFV50F8	EKAFV50F8	EKAFV80F8	EKAFV80F8	EKAFV100F8	EKAFV100F8 x 2	EKAFV100F8 x 2
	CO ₂ sensor		-	-	BRYMA65	BRYMA65	BRYMA65	BRYMA100	BRYMA100	BRYMA200	BRYMA200

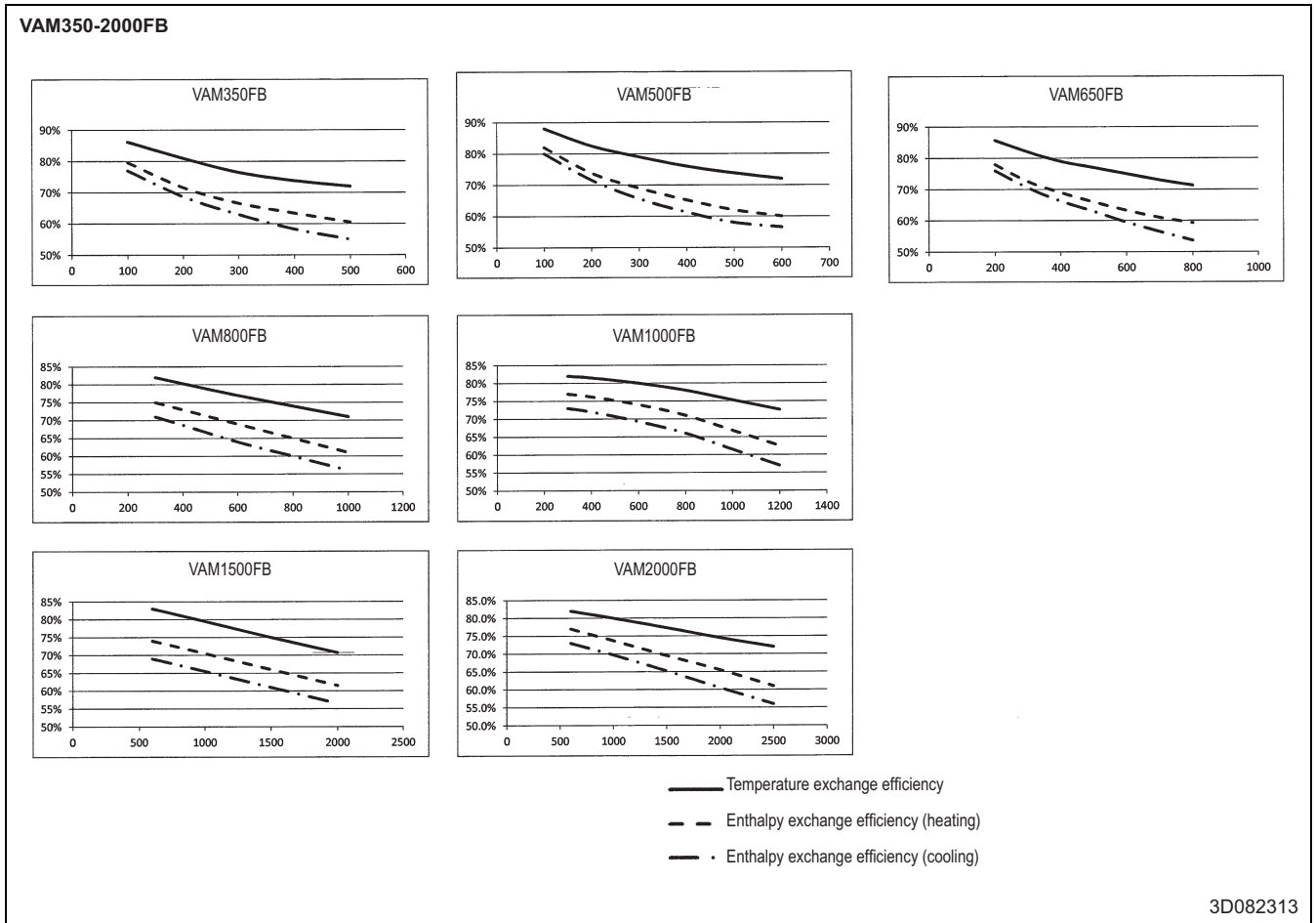
NOTES

1. BRC1E52A contains languages english, german, french, dutch, spanish, italian, greek, portuguese, russian, turkish and polish.
2. BRC1E52B contains languages english, german, albanian, bulgarian, croatian, czech, hungarian, romanian, serbian, slovak and slovenian.
3. 'For General' = documents in japanese and english / 'For EC Market' = documents translated in european languages - identical content.
4. PCB Humidifier and Heater control kit cannot be combined.
5. Need for PCB 'Wiring adapter for electrical appendices' to be confirmed.
6. Air filters are packed for 1 side (supply air or exhaust air) of the heat exchanger element.

5 Exchange efficiency

5 - 1 Exchange efficiency

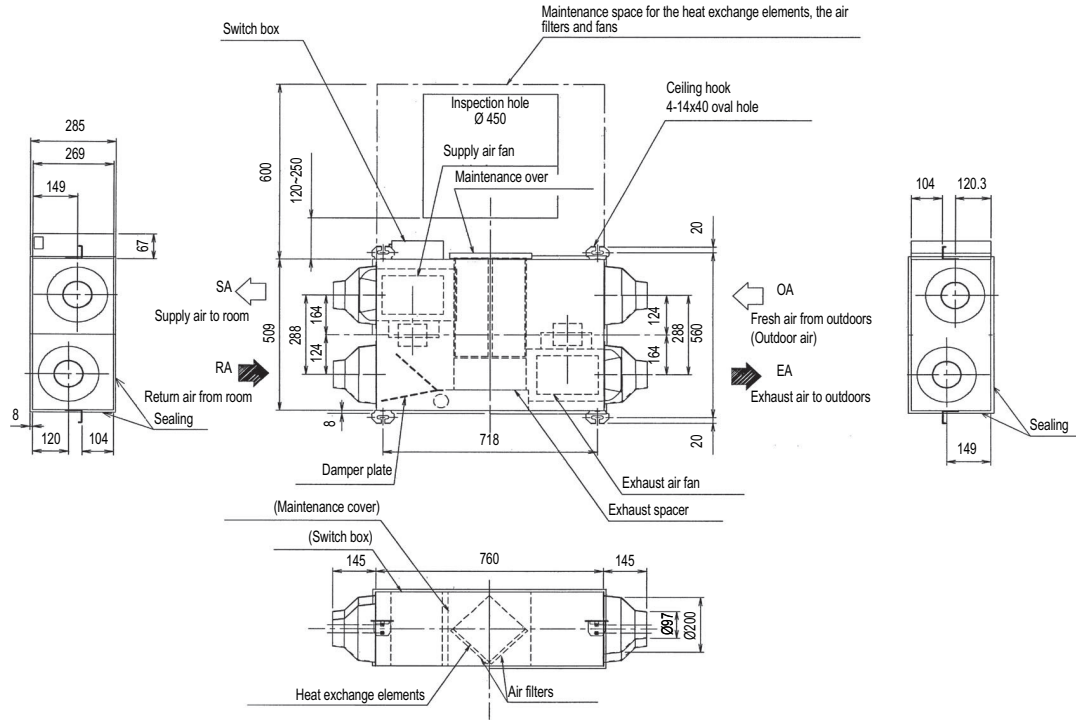
5



6 Dimensional drawings

6 - 1 Dimensional Drawings

VAM150FA

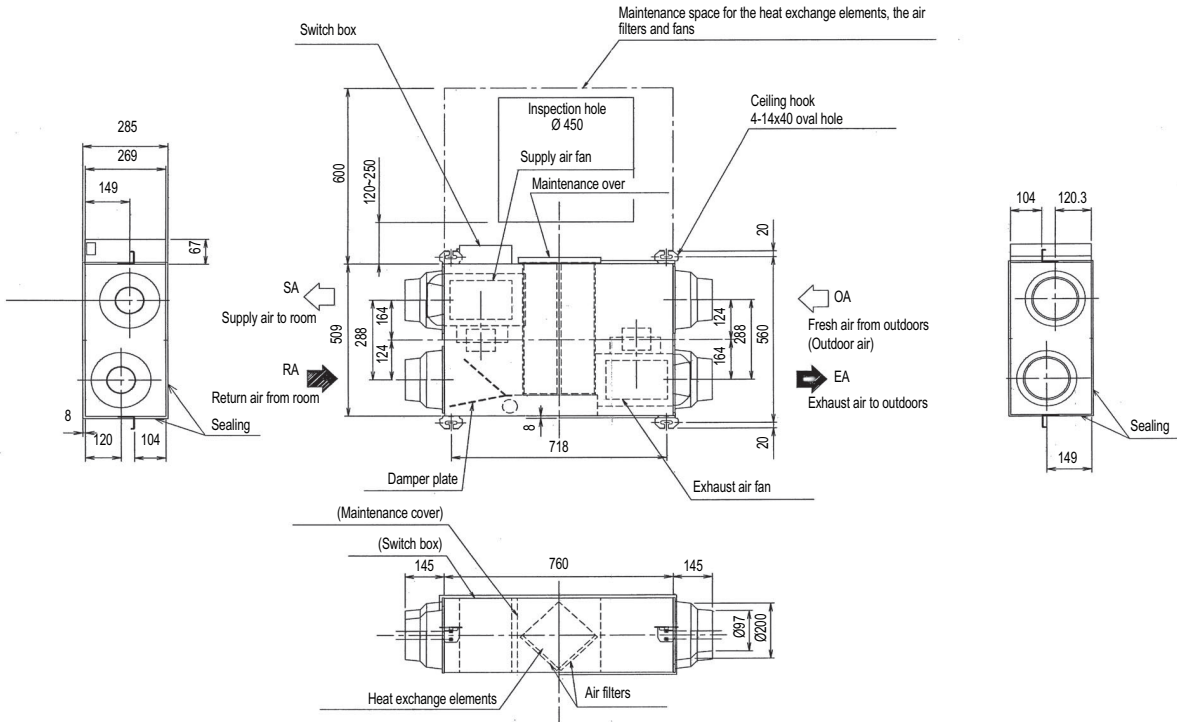


NOTE

1 Be sure to provide the inspection hole (450x450 mm) to inspect the air filters, the exchange elements and fans.

3TW27874-1

VAM250FA



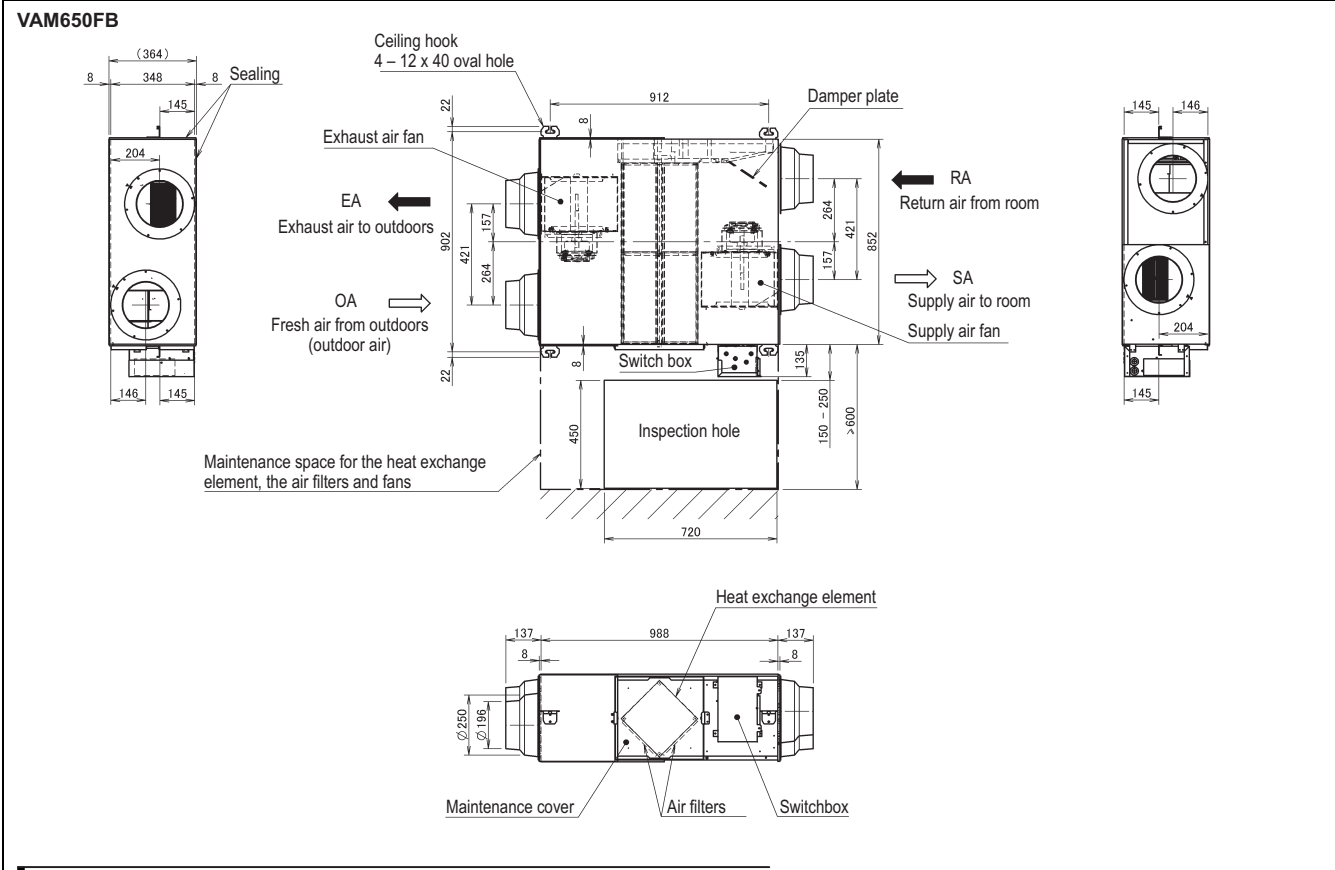
NOTE

1 Be sure to provide the inspection hole (450x450 mm) to inspect the air filters, the exchange elements and fans.

3TW27884-1

6 Dimensional drawings

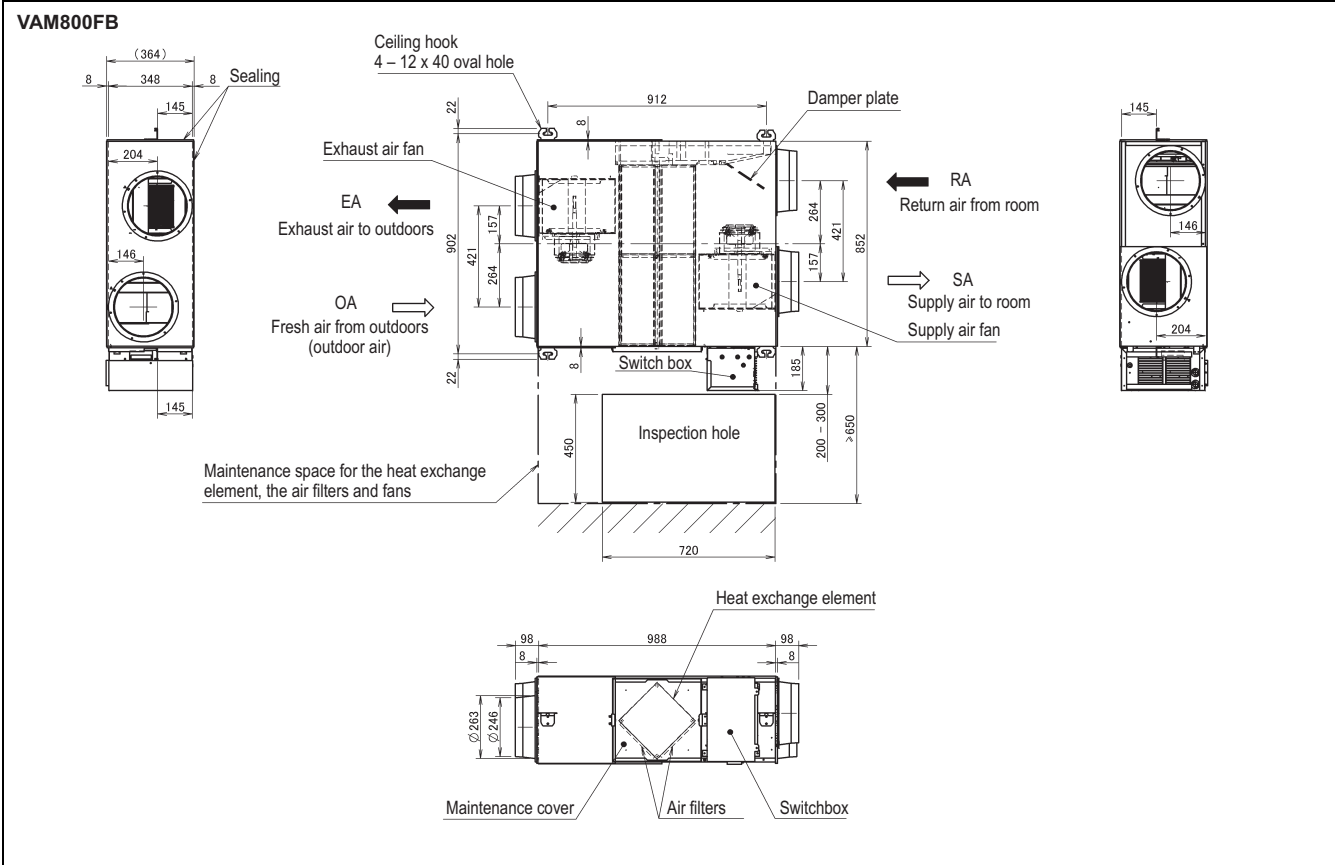
6 - 1 Dimensional Drawings



6

NOTES

1. Be sure to provide the inspection hole to inspect the air filters, the exchange elements and fans. 3D081164

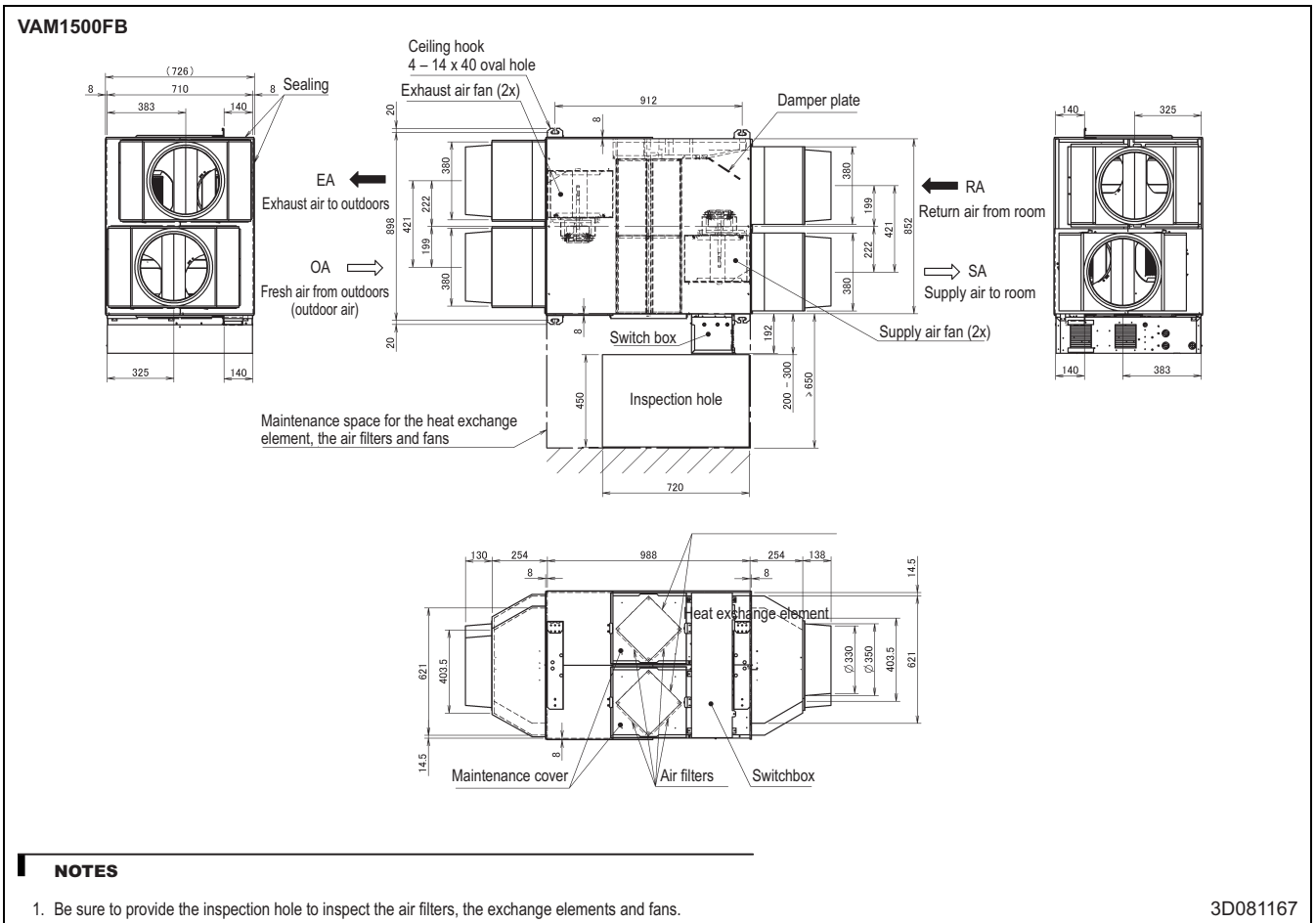
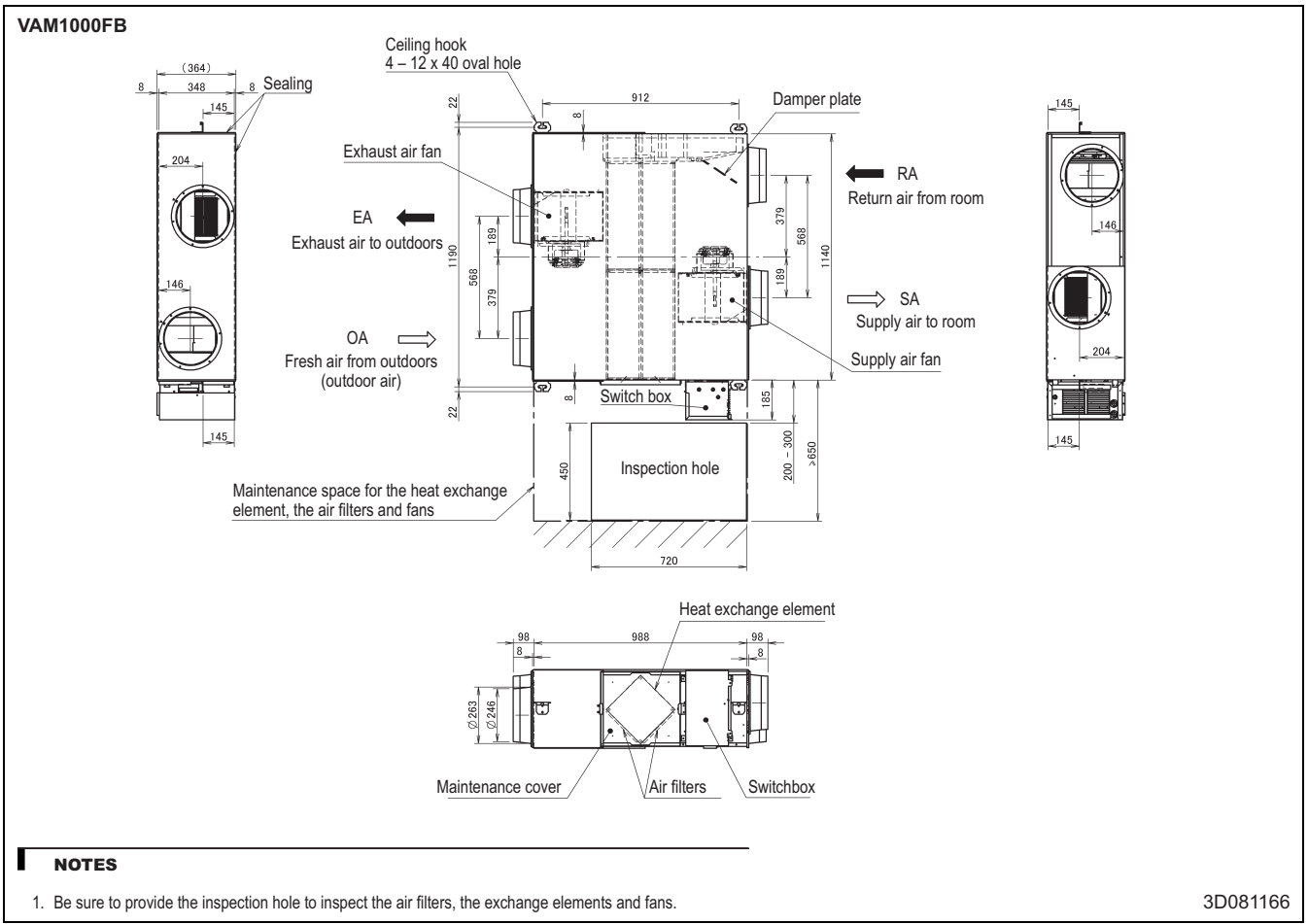


NOTES

1. Be sure to provide the inspection hole to inspect the air filters, the exchange elements and fans. 3D081165

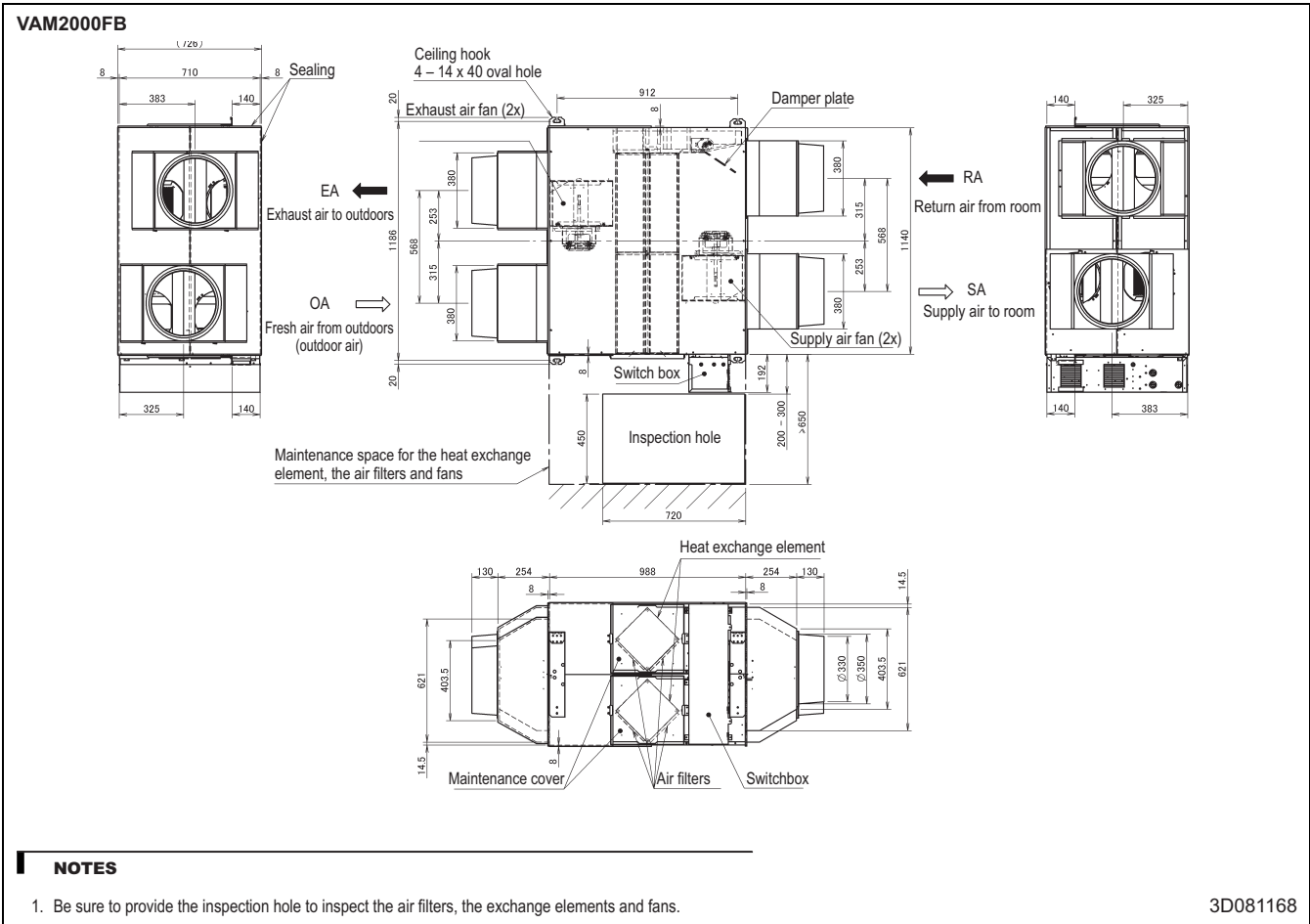
6 Dimensional drawings

6 - 1 Dimensional Drawings



6 Dimensional drawings

6 - 1 Dimensional Drawings

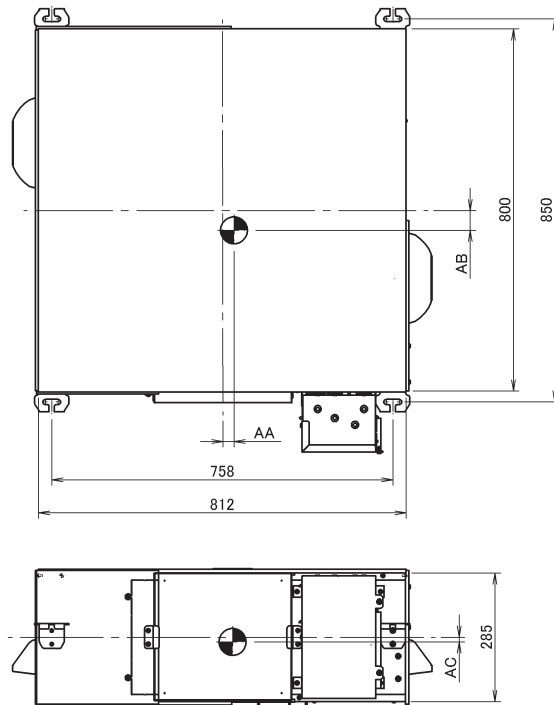


7 Centre of gravity

7 - 1 Centre of Gravity

7

VAM350-500FB



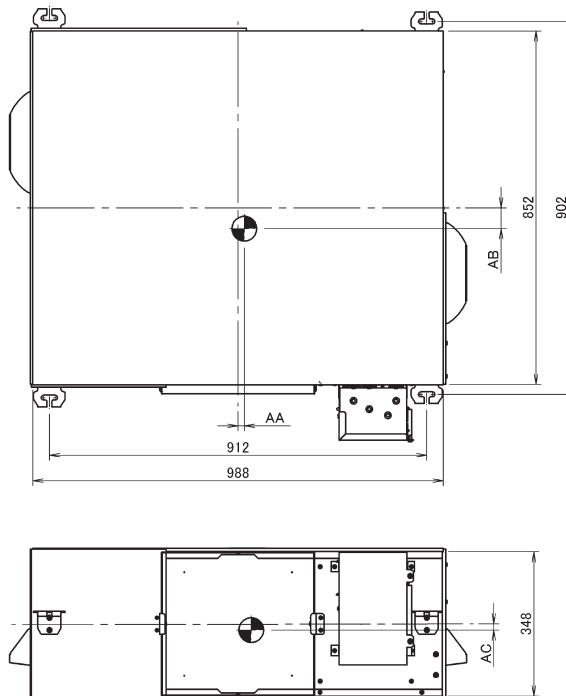
Design ref.	AA	AB	AC
VAM350FB	24	51	10
VAM500FB	23	36	9

NOTES

1. The shown unit is VAM350FB

4D081262

VAM650-800FB



Design ref.	AA	AB	AC
VAM650FB	20	42	6
VAM800FB	32	58	5

NOTES

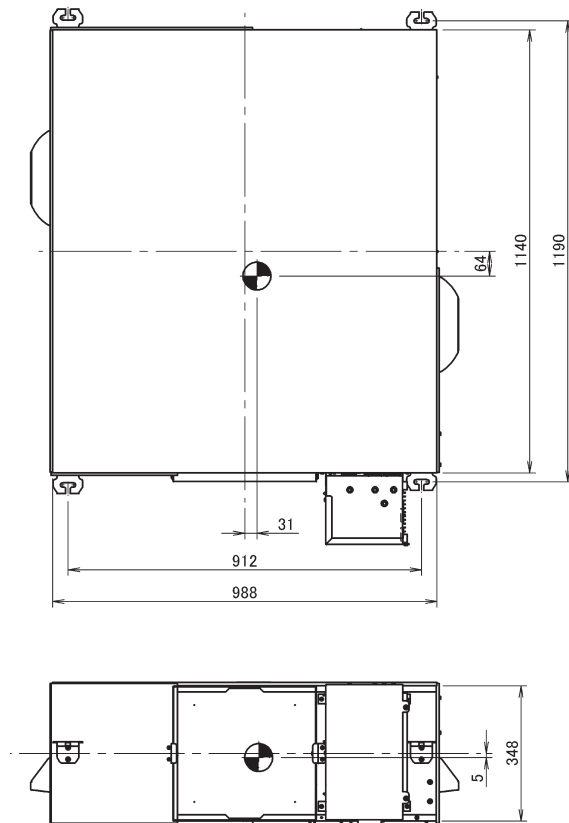
1. The shown unit is VAM650FB

4D081263

7 Centre of gravity

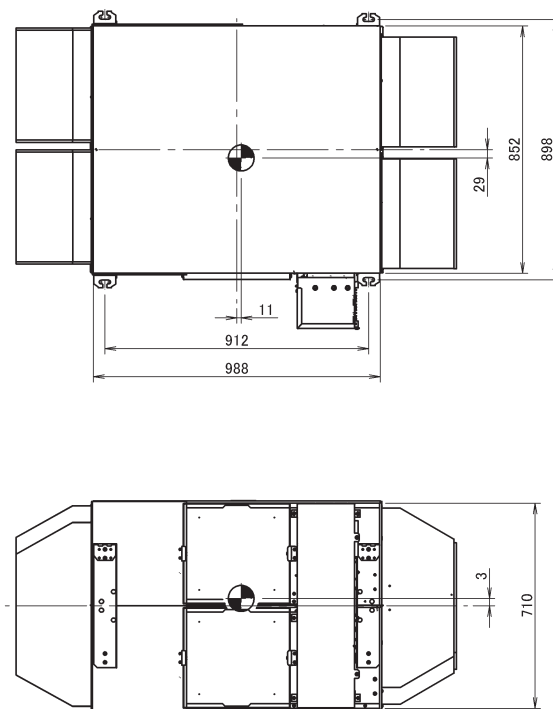
7 - 1 Centre of Gravity

VAM1000FB



4D081264

VAM1500FB

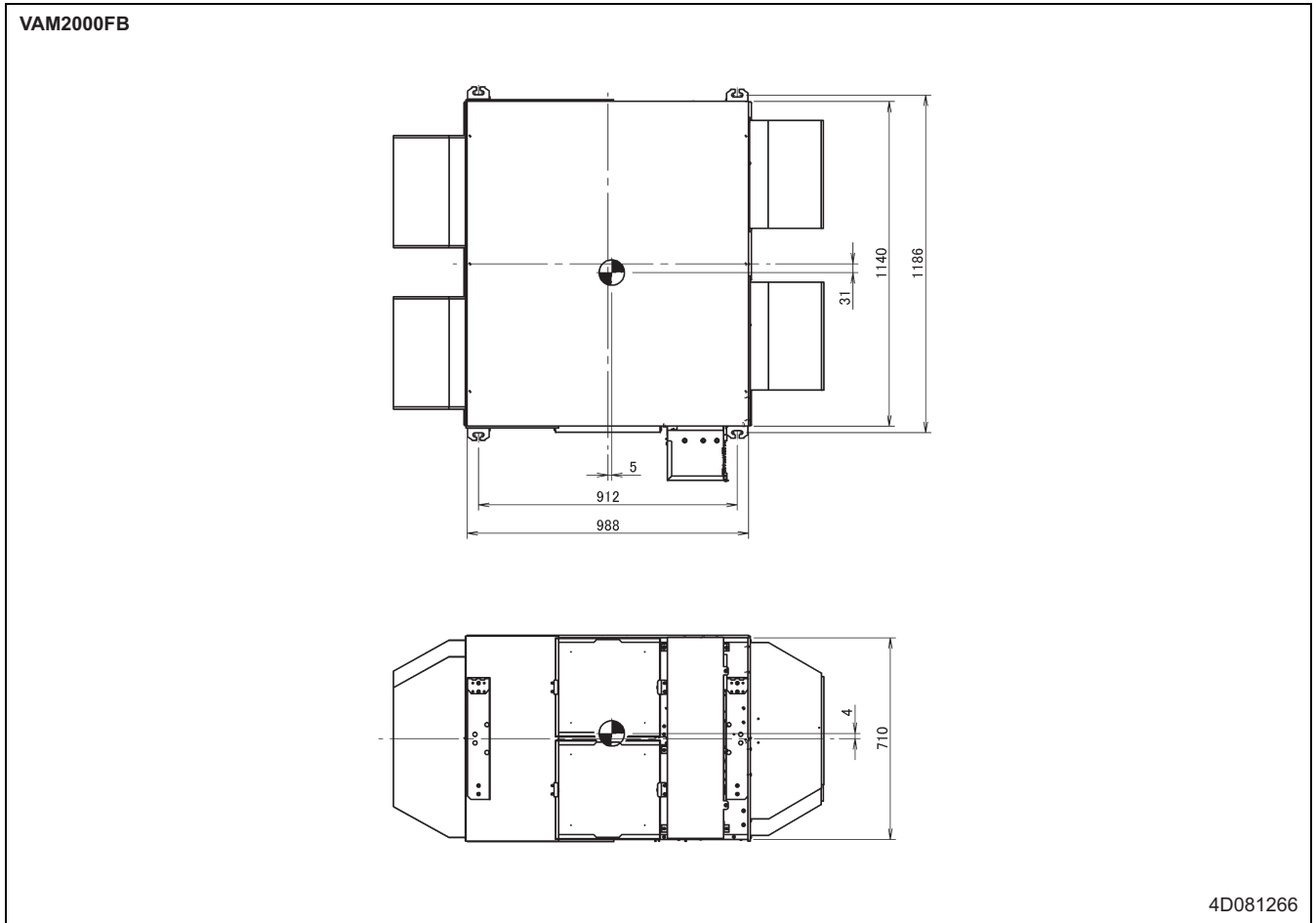


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7 Centre of gravity

7 - 1 Centre of Gravity

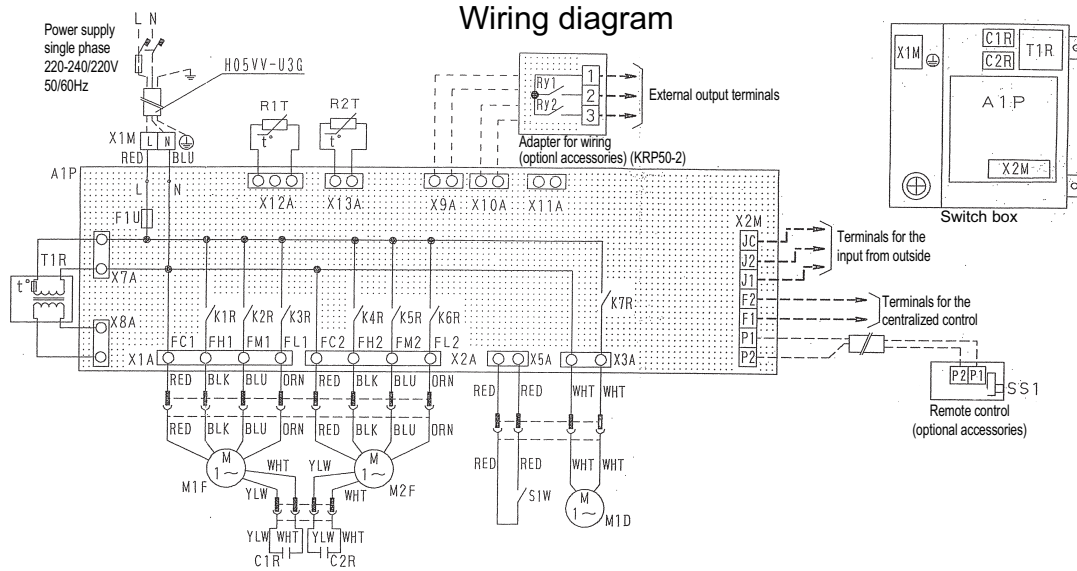
7



8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

VAM150-250FA



L - RED	N - BLU	M2F	Motor (exhaust fan motor)	Optional accessories	
A1P	Printed circuit board	Q1L • Q2L	Thermo switch (MF1 • 2 built-in)	Adapter for wiring (KRP50-2)	
C1R • C2R	Capacitor (M1F • M2F)	R1T	Thermistor (indoor air)	Ry1	Magnetic relay (On/Off)
F1U	Fuse (250V, 10A)	R2T	Thermistor (outdoor air)	Ry2	Magnetic relay (humidifier operation)
K1R ~ K3R	Magnetic relay (M1F)	S1W	Limit switch	X9A • 10A	Connector (KRP50-2)
K4R ~ K6R	Magnetic relay (M2F)	T1R	Transformer (supply 220-240V/22V)	Remote control	
K7R	Magnetic relay (M1D)	X1M	Terminal (power supply)	SS1	Selector switch (main/sub)
M1D	Motor (damper motor)	X2M	Terminal (control)	Optional connector	
M1F	Motor (air supply fan motor)			X11A	Connector (adapter power supply)

□ □ □ □ : Terminals

□ □ □ □ : Connector

—○— : Wire clamp

- - - - : Field wiring

⊕ : Protective earth

Colors: BLK: Black

BLU: Blue

BRN: Brown

ORN: Orange

GRN: Green

RED: Red

WHT: White

YLW: Yellow

2TW24836-1C

⚠ Before obtaining access to terminal devices, all power supply circuits must be interrupted.

⚠ Clean the heat exchange elements once every two years or more often and the air filter once a year or more often. (Before cleaning, make sure that the unit is not operating.)

⚠ To prevent electric shock hazards, provide grounding work according to the installation manual.

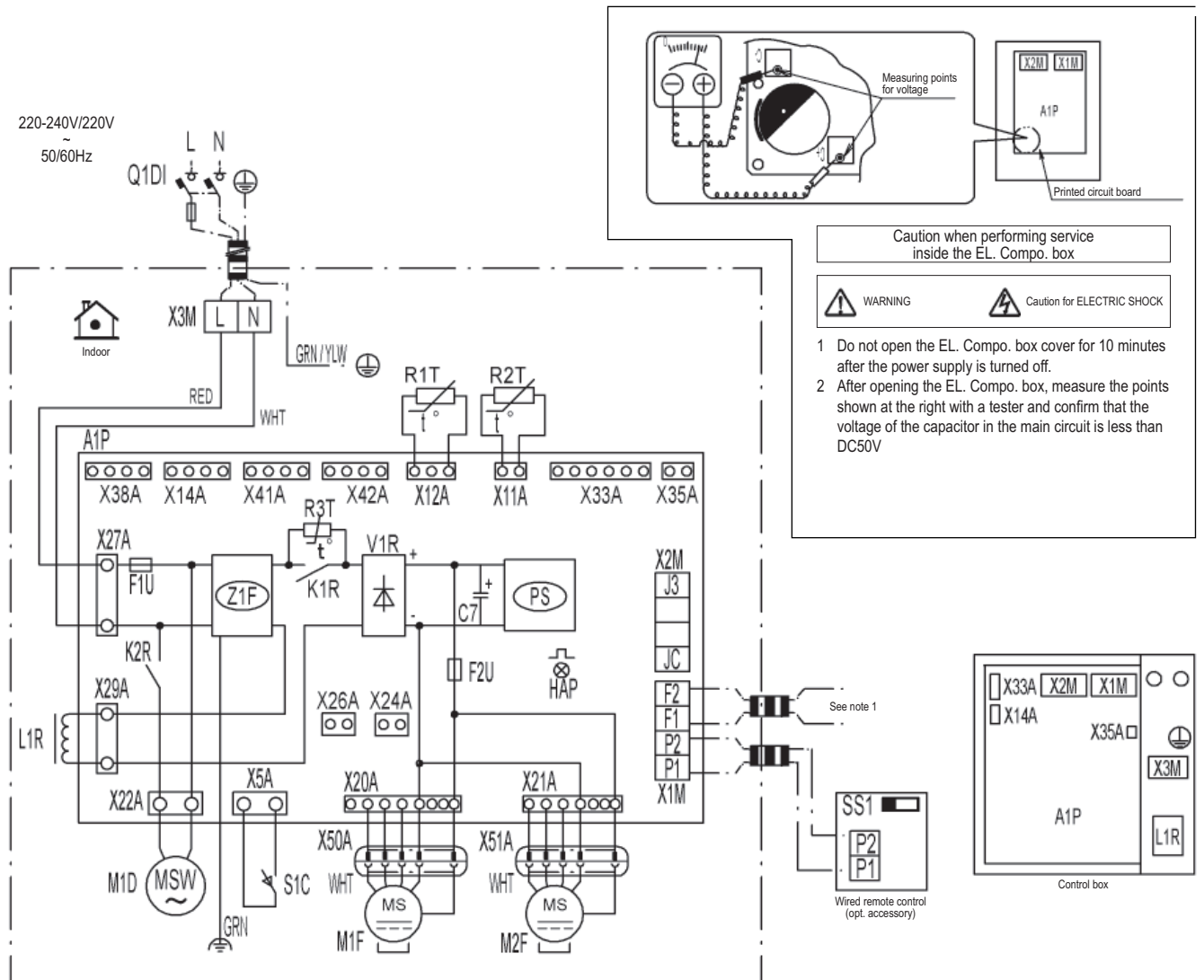
8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

8

VAM350-650FB

220-240V/220V
50/60Hz



Caution when performing service inside the EL. Compo. box

⚠ WARNING ⚠ Caution for ELECTRIC SHOCK

- 1 Do not open the EL. Compo. box cover for 10 minutes after the power supply is turned off.
- 2 After opening the EL. Compo. box, measure the points shown at the right with a tester and confirm that the voltage of the capacitor in the main circuit is less than DC50V

A1P	Printed circuit board	Q1DI	Field earth leak detector (Max. 300 mA)	REMOTE CONTROL	
C1	Capacitor (M1F)	R1T	Thermistor (Indoor air)	SS1	Selector switch
F1U	Fuse T, 6.3A, 250V (A1P)	R2T	Thermistor (Outdoor air)	CONNECTOR FOR OPTION (See note 3)	
F1U	Fuse T, 5A, 250V (A1P)	R3T	Thermistor (PTC)	X14A	Connector (CO ₂ sensor)
HAP	Pilot lamp (Service monitor - green)	S1C	Limit switch damper motor	X24A	Connector (Outside damper)
K1R	Magnetic relay	X1M	Terminal (A1P)	X26A	Connector (Filter sign)
K2R	Magnetic relay	X2M	Terminal (Outside input) (A1P)	X33A	Connector (Contact PCB)
L1R	Reactor	X3M	Terminal (Power supply)	X35A	Connector (Appendices PCB)
M1F	Motor (Supply air fan)	X38A	Connector (Multi tenant)	X41A	Connector (Humidity sensor 1)
M2F	Motor (Exhaust air fan)	X41A	Connector (Humidity sensor 1)	X42A	Connector (Humidity sensor 2)
M1D	Motor (Dampener)	X42A	Connector (Humidity sensor 2)		
PS	Switching power supply (A1P)				

- L : Live
- N : Neutral
- ⚡ : Field wiring
- : Terminal strip
- ⊞ : Connector
- : Connection
- : Relay connector
- ⊞ : Protective earth (screw)
- ⊞ : Noiseless earth
- Colors: BLK: Black
- BLU: Blue
- ORG: Orange
- RED: Red
- WHT: White
- YLW: Yellow
- GRN: Green

3D080682A

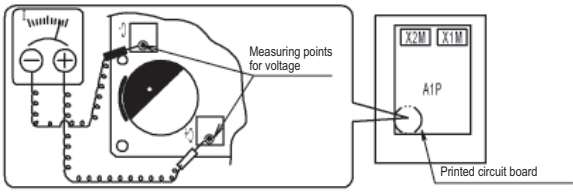
NOTES

- 1 In case you use the central remote control, connect it to the unit in accordance with the attached manual.
- 2 When connecting the input wires from outside, fresh-up or on/off control operation can be selected. (Contact with a minimum applicable load of 12V DC, 1mA)
- 3 For details of connection see the attached manual of the option kit.
- 4 SS1 (A1P) has already been set to "nor." at factory set. The unit will not run if the setting is changed.


8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase


VAM800-1000FB



Caution when performing service inside the EL. Compo. box

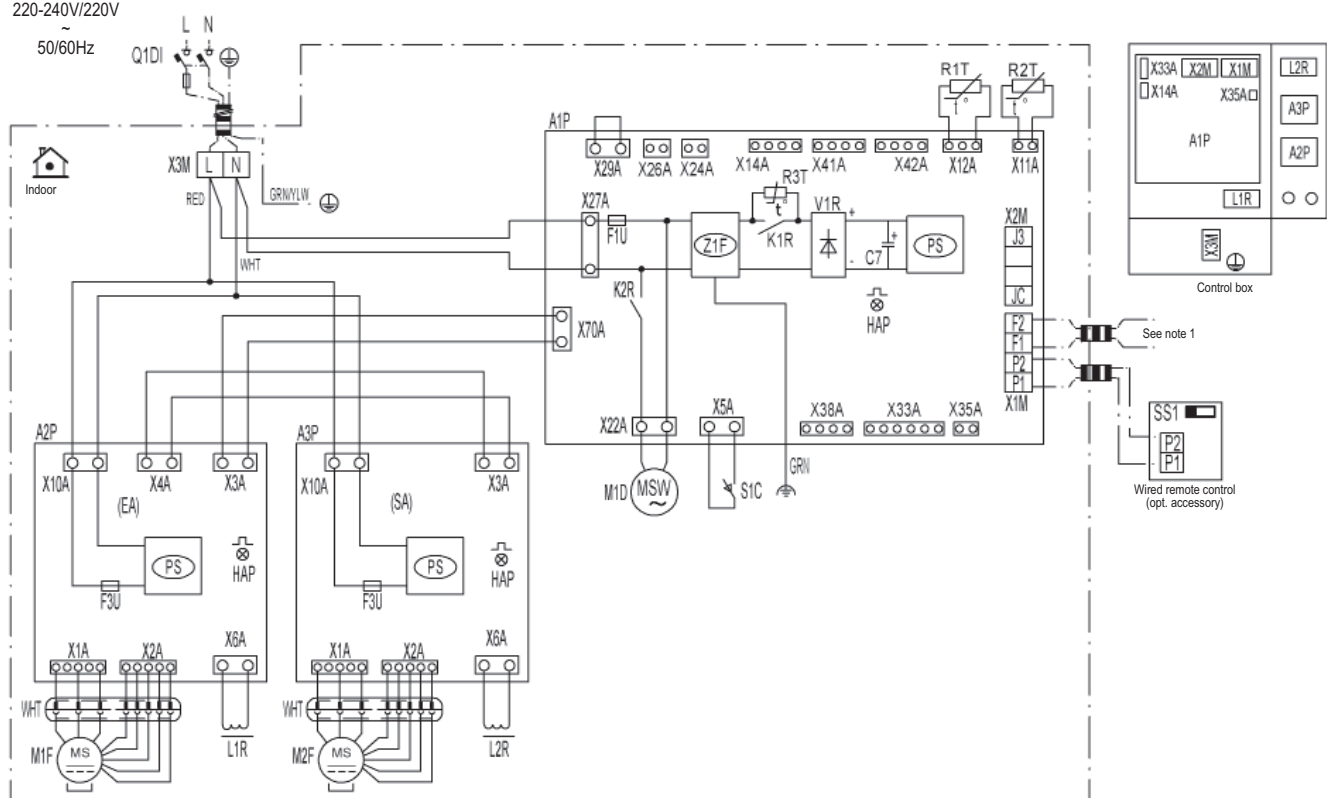


WARNING








Caution for ELECTRIC SHOCK

- 1 Do not open the EL. Compo. box cover for 10 minutes after the power supply is turned off.
- 2 After opening the EL. Compo. box, measure the points shown at the right with a tester and confirm that the voltage of the capacitor in the main circuit is less than DC50V



A1P	Printed circuit board	M1D	Motor (Damper)	REMOTE CONTROL	
A2P	Printed circuit board Assy (Fan)	PS	Switching power supply (A1P)	SS1	Selector switch
A3P	Printed circuit board Assy (Fan)	Q1DI	Field earth leak detector (Max. 300 mA)	CONNECTOR FOR OPTION (See note 3)	
C1	Capacitor (M1F)	R1T	Thermistor (Indoor air)	X14A	Connector (CO ₂ sensor)
F1U	Fuse T, 6.3A 250V (A1P)	R2T	Thermistor (Outdoor air)	X24A	Connector (Outside damper)
F3U	Fuse T, 5A, 250V (A1P)	R3T	Thermistor (PTC)	X26A	Connector (Filter sign)
HAP	Pilot lamp (Service monitor - green)	S1C	Limit switch damper motor	X33A	Connector (Contact PCB)
K1R	Magnetic relay	X1M	Terminal (A1P)	X35A	Connector (Appendices PCB)
K2R	Magnetic relay	X2M	Terminal (Outside input) (A1P)	X38A	Connector (Multi tenant)
L1R	Reactor	X3M	Terminal (Power supply)	X41A	Connector (Humidity sensor 1)
L2R	Reactor	V1R	Diode bridge	X42A	Connector (Humidity sensor 2)
M1F	Motor (Supply air fan)	Z1F	Noise filter		
M2F	Motor (Exhaust air fan)				

- | | | | |
|---|--|--------------------|-------------|
| L : Live | : Connection | Colors: BLK: Black | WHT: White |
| N : Neutral | : Relay connector | BLU: Blue | YLU: Yellow |
|  : Field wiring |  : Protective earth (screw) | ORG: Orange | GRN: Green |
|  : Terminal strip |  : Noiseless earth | RED: Red | |
|  : Connector | | | |

3D080683A

NOTES

- 1 In case you use the central remote control, connect it to the unit in accordance with the attached manual.
- 2 When connecting the input wires from outside, fresh-up or on/off control operation can be selected. (Contact with a minimum applicable load of 12V DC, 1mA)
- 3 For details of connection see the attached manual of the option kit.
- 4 SS1 (A1P) has already been set to "nor." at factory set. The unit will not run if the setting is changed.

8 Wiring diagrams

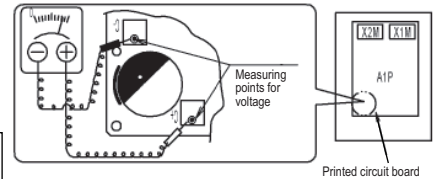
8 - 1 Wiring Diagrams - Single Phase

8

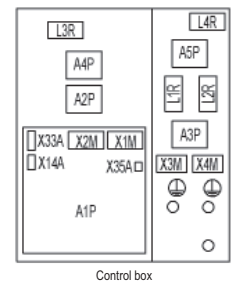
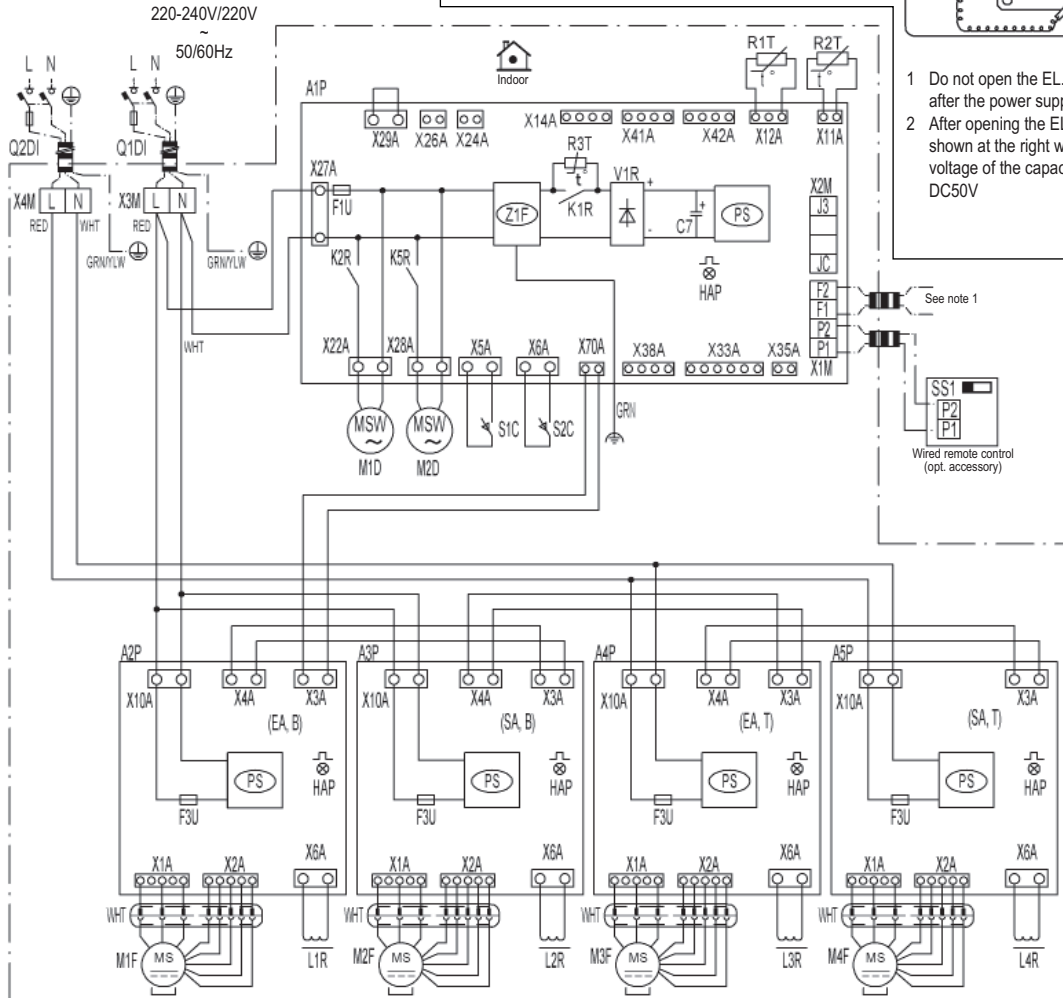
VAM1500-2000FB

Caution when performing service inside the EL. Compo. box

WARNING Caution for ELECTRIC SHOCK



- 1 Do not open the EL. Compo. box cover for 10 minutes after the power supply is turned off.
- 2 After opening the EL. Compo. box, measure the points shown at the right with a tester and confirm that the voltage of the capacitor in the main circuit is less than DC50V



A1P	Printed circuit board	M4F	Motor (Supply air fan) (Top)	V1R	Diode bridge
A2P - A4P	Printed circuit board Assy (Fan)	M1D, M2D	Motor (Damper)	Z1F	Noise filter
A5P	Printed circuit board Assy (Fan)	PS	Switching power supply (A1P)	REMOTE CONTROL	
C1	Capacitor (M1F)	SS1	Selector switch	CONNECTOR FOR OPTION (See note 3)	
F1U	Fuse T, 6.3A 250V (A1P)	Q1DI, Q2DI	Field earth leak detector (Max. 300 mA)	X14A	Connector (CO ₂ sensor)
F3U	Fuse T, 5A, 250V (A1P)	R1T	Thermistor (Indoor air)	X24A	Connector (Outside damper)
HAP	Pilot lamp (Service monitor - green)	R2T	Thermistor (Outdoor air)	X26A	Connector (Filter sign)
K1R	Magnetic relay	R3T	Thermistor (PTC)	X33A	Connector (Contact PCB)
K2R, K5R	Magnetic relay	S1C, S2C	Limit switch damper motor	X35A	Connector (Appendices PCB)
L1R - L4R	Reactor	X1M	Terminal (A1P)	X41A	Connector (Humidity sensor 1)
M1F	Motor (Exhaust air fan) (Bottom)	X2M	Terminal (Outside input) (A1P)	X42A	Connector (Humidity sensor 2)
M2F	Motor (Supply air fan) (Bottom)	X3M	Terminal (Power supply)		
M3F	Motor (Exhaust air fan) (Top)				

- L : Live
- N : Neutral
- : Field wiring
- : Terminal strip
- : Connector
- : Connection
- : Relay connector
- : Protective earth (screw)
- : Noiseless earth

- Colors: BLK: Black
- BLU: Blue
- ORG: Orange
- RED: Red
- WHT: White
- YLW: Yellow
- GRN: Green

2D080684A

NOTES

- 1 In case you use the central remote control, connect it to the unit in accordance with the attached manual.
- 2 When connecting the input wires from outside, fresh-up or on/off control operation can be selected. (Contact with a minimum applicable load of 12V DC, 1mA)
- 3 For details of connection see the attached manual of the option kit.
- 4 SS1 (A1P) has already been set to "nor." at factory set. The unit will not run if the setting is changed.

9 Sound data

9 - 1 Sound Power Spectrum

VAM150FA

Power level data (in case of Total Heat Exchange mode) (dB)

Model	Power supply	Hz		63	125	250	500	1000	2000	4000	8000
		NOTCH									
VAM150FA	220V	50Hz	U-H	50	48	46	40.5	38.5	34	25.5	27
			H	47	47	42	40	37.5	27.5	25	26.5
			L	44	42	38.5	35.5	29.5	21.5	22.5	23.5
	230V	50Hz	U-H	51	49	47	41.5	39.5	35	27	28.5
			H	47.5	47.5	42.5	39.5	37	28.5	26	27.5
			L	44	42	38.5	36	29.5	21.5	22.5	23.5
	240V	50Hz	U-H	53	50.5	46.5	42	40	36.5	30	31.5
			H	49.5	49.5	45	42	39.5	31.5	29.5	31.5
			L	44.5	42.5	39.5	36	30	22.5	23.5	25
	220V	60Hz	U-H	52	51	46	42.5	39.5	33.5	24.5	27
			H	49	49	44.5	40.5	37	29.5	26	27.5
			L	41	42	39	35.5	29	21	21.5	23.5

NOTES

1. Operation sound is measured in an anechoic chamber.
2. The operating sound level may become greater than this value depending on the operating conditions, reflected sound and peripheral noise.
3. Operation sound differs with operation and ambient conditions.
4. The power levels have been calculated on the assumption that the measuring point were right under the source of operating sound.

4D036765

VAM250FA

Power level data (in case of Total Heat Exchange mode) (dB)

Model	Power supply	Hz		63	125	250	500	1000	2000	4000	8000
		NOTCH									
VAM250FA	220V	50Hz	U-H	51.5	51	48	42	38.5	33.5	25.5	25.5
			H	49.5	48.5	46	40	36.5	29	22	23.5
			L	44.5	44	42	34	28	19.5	21	22
	230V	50Hz	U-H	52	51.5	47	43	39.5	34	27	27
			H	50.5	49.5	47	41	37.5	30	24.5	26
			L	44.5	44.5	42	35	28	19.5	21	22
	240V	50Hz	U-H	51.5	52.5	48	44.5	41	36	29	29.5
			H	52	52	48.8	40.5	37	32.5	28	30
			L	45	44.5	43	34.5	28.5	21	22.5	23.5
	220V	60Hz	U-H	51.5	52	49	43.5	39.5	34	25.5	25.5
			H	49	50	45.5	40	38	30	24.5	26
			L	44.5	41	39	34.5	30.5	20	20	22

NOTES

1. Operation sound is measured in an anechoic chamber.
2. The operating sound level may become greater than this value depending on the operating conditions, reflected sound and peripheral noise.
3. Operation sound differs with operation and ambient conditions.
4. The power levels have been calculated on the assumption that the measuring point were right under the source of operating sound.

4D036766

VAM350FB

Power level data (in case of Total Heat Exchange mode) (dB) (dBA)

Unit model name	Fan speed	Hz									
		63	125	250	500	1000	2000	4000	8000	Total	
VAM350FB	U-H	57.5	53.0	49.5	45.0	42.5	39.5	31.5	25.5	48	
	H	58.5	51.0	46.5	43.5	40.5	35.0	26.0	26.5	46	
	L	58.5	45.5	41.5	38.0	33.5	24.0	25.0	27.0	41	

NOTES

1. dBA = A-weighted sound power level (A-scale according to IEC).
2. Reference acoustic intensity 0dB = 10E-6μW/m²
3. Measured according to ISO 3744.
4. The operating sound level may become higher than this value depending on the operating conditions, reflected sound and peripheral noise.
5. The power levels have been calculated in the assumption that the measuring point is immediately under the source of operating sound.

4D082464

VAM500FB

Power level data (in case of Total Heat Exchange mode) (dB) (dBA)

Unit model name	Fan speed	Hz									
		63	125	250	500	1000	2000	4000	8000	Total	
VAM500FB	U-H	57.0	54.0	51.0	48.0	45.0	37.5	27.5	25.5	50	
	H	54.0	51.5	49.0	46.0	42.5	36.0	26.5	26.0	48	
	L	50.5	47.5	44.0	39.0	33.5	25.0	23.0	24.5	41	

NOTES

1. dBA = A-weighted sound power level (A-scale according to IEC).
2. Reference acoustic intensity 0dB = 10E-6μW/m²
3. Measured according to ISO 3744.
4. The operating sound level may become higher than this value depending on the operating conditions, reflected sound and peripheral noise.
5. The power levels have been calculated in the assumption that the measuring point is immediately under the source of operating sound.

4D082465

9 Sound data

9 - 1 Sound Power Spectrum

9

VAM650FB

Power level data (in case of Total Heat Exchange mode)

(dB) (dBA)

Unit model name	Fan speed	Hz								
		63	125	250	500	1000	2000	4000	8000	Total
VAM650FB	U-H	62.0	58.0	52.5	48.5	45.5	41.5	34.0	26.0	51
	H	61.0	56.5	51.0	47.0	44.5	39.0	30.0	26.0	50
	L	53.5	50.5	46.0	42.0	37.5	32.0	24.0	25.5	44

NOTES

1. dBA = A-weighted sound power level (A-scale according to IEC).
2. Reference acoustic intensity 0dB = 10E-6μW/m²
3. Measured according to ISO 3744.
4. The operating sound level may become higher than this value depending on the operating conditions, reflected sound and peripheral noise.
5. The power levels have been calculated in the assumption that the measuring point is immediately under the source of operating sound.

4D082466

VAM800FB

Power level data (in case of Total Heat Exchange mode)

(dB) (dBA)

Unit model name	Fan speed	Hz								
		63	125	250	500	1000	2000	4000	8000	Total
VAM800FB	U-H	58.0	58.0	52.5	49.5	48.5	41.5	33.5	26.0	53
	H	58.5	57.0	51.5	49.5	47.0	40.5	31.0	27.5	52
	L	54.5	54.5	47.5	44.5	43.0	35.5	24.5	23.5	47

NOTES

1. dBA = A-weighted sound power level (A-scale according to IEC).
2. Reference acoustic intensity 0dB = 10E-6μW/m²
3. Measured according to ISO 3744.
4. The operating sound level may become higher than this value depending on the operating conditions, reflected sound and peripheral noise.
5. The power levels have been calculated in the assumption that the measuring point is immediately under the source of operating sound.

4D082467

VAM1000FB

Power level data (in case of Total Heat Exchange mode)

(dB) (dBA)

Unit model name	Fan speed	Hz								
		63	125	250	500	1000	2000	4000	8000	Total
VAM1000FB	U-H	62.0	58.5	54.0	50.5	49.0	42.0	36.5	28.0	53
	H	61.0	57.0	52.0	50.0	48.0	38.5	31.0	25.5	52
	L	58.0	55.0	49.0	45.5	43.5	36.5	27.5	24.0	48

NOTES

1. dBA = A-weighted sound power level (A-scale according to IEC).
2. Reference acoustic intensity 0dB = 10E-6μW/m²
3. Measured according to ISO 3744.
4. The operating sound level may become higher than this value depending on the operating conditions, reflected sound and peripheral noise.
5. The power levels have been calculated in the assumption that the measuring point is immediately under the source of operating sound.

4D082468

VAM1500FB

Power level data (in case of Total Heat Exchange mode)

(dB) (dBA)

Unit model name	Fan speed	Hz								
		63	125	250	500	1000	2000	4000	8000	Total
VAM1500FB	U-H	60.5	61.0	55.5	52.5	50.5	46.0	39.5	29.5	55
	H	60.5	60.0	53.5	51.5	49.5	44.5	37.0	31.0	54
	L	58.5	58.0	51.0	49.0	47.0	39.5	30.5	31.0	51

NOTES

1. dBA = A-weighted sound power level (A-scale according to IEC).
2. Reference acoustic intensity 0dB = 10E-6μW/m²
3. Measured according to ISO 3744.
4. The operating sound level may become higher than this value depending on the operating conditions, reflected sound and peripheral noise.
5. The power levels have been calculated in the assumption that the measuring point is immediately under the source of operating sound.

4D082469

9 Sound data

9 - 1 Sound Power Spectrum

VAM2000FB

Power level data (in case of Total Heat Exchange mode)

(dB) (dBA)

Unit model name	Fan speed	Hz								
		63	125	250	500	1000	2000	4000	8000	Total
VAM2000FB	U-H	65.0	61.5	57.0	54.0	53.0	45.0	39.5	32.5	57
	H	64.0	60.0	55.0	53.0	51.0	41.5	34.5	30.5	55
	L	62.0	58.0	51.5	50.0	48.5	40.5	32.5	30.5	53

NOTES

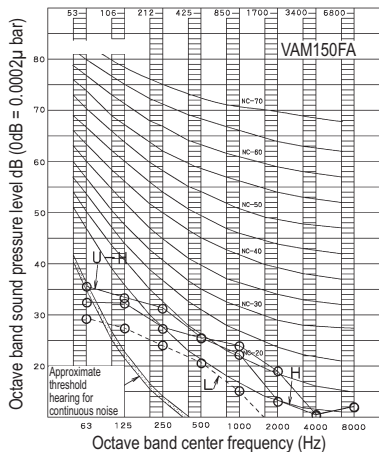
1. dBA = A-weighted sound power level (A-scale according to IEC).
2. Reference acoustic intensity 0dB = 10E-6μW/m²
3. Measured according to ISO 3744.
4. The operating sound level may become higher than this value depending on the operating conditions, reflected sound and peripheral noise.
5. The power levels have been calculated in the assumption that the measuring point is immediately under the source of operating sound.

4D082470

9 Sound data

9 - 2 Sound Pressure Spectrum

VAM150FA

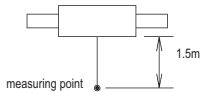


4D036868

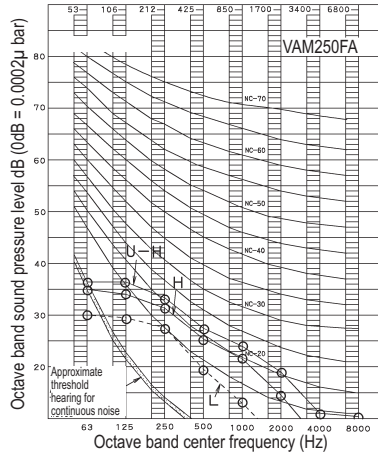
NOTES

- Over All (dB): (B,G,N is already rectified)
- Operating conditions:
 - Power source: Model: VAM150FA
 - Ventilation mode: Total heat exchange
- Measuring place:
 - Operation noise is measured in an anechoic chamber.
 - The operation noise level becomes greater than this value depending on the operation conditions, reflected sound and peripheral noise.
 - Operation noise differs with operation and ambient conditions.
 - U-H: ultra-high, H: high, L: low
- Operation noise differs with operation and ambient conditions
- Location of microphone.

Scale	Air flow rate		
	U-H	H	I
A	27	26	20.5
C			



VAM250FA

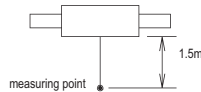


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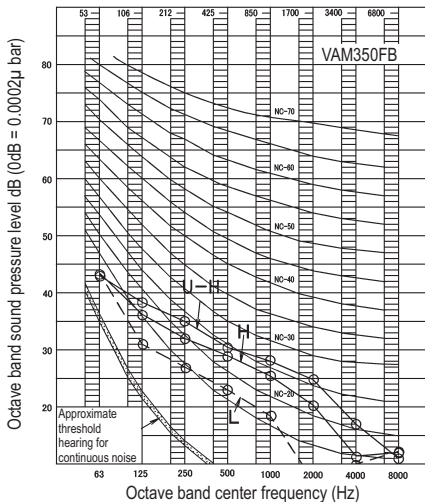
NOTES

- Over All (dB): (B,G,N is already rectified)
- Operating conditions:
 - Power source: Model: VAM250FA
 - Ventilation mode: Total heat exchange
- Measuring place:
 - Operation noise is measured in an anechoic chamber.
 - The operation noise level becomes greater than this value depending on the operation conditions, reflected sound and peripheral noise.
 - Operation noise differs with operation and ambient conditions.
 - U-H: ultra-high, H: high, L: low
- Operation noise differs with operation and ambient conditions
- Location of microphone.

Scale	Air flow rate		
	U-H	H	I
A	28	26	21
C			



VAM350FB

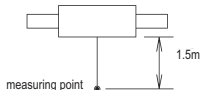


4D082471

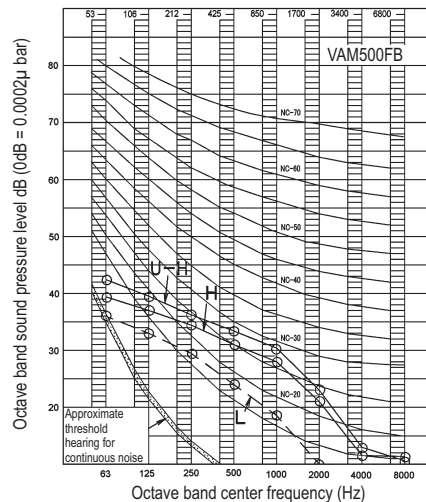
Air flow rate (dB)		
U-H	H	L
32	31.5	23.5

NOTES

- Ventilation mode: total heat exchange.
- Operation noise is measured in an anechoic chamber.
- The operation noise level may become higher than this value depending on the operation conditions, reflected sound and peripheral noise.
- Operation noise differs with operation and ambient conditions.
- U-H: ultra-high, H: high, L: low
- Location of microphone.



VAM500FB

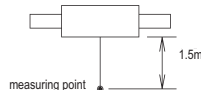


4D082472

Air flow rate (dB)		
U-H	H	L
33	31.5	24.5

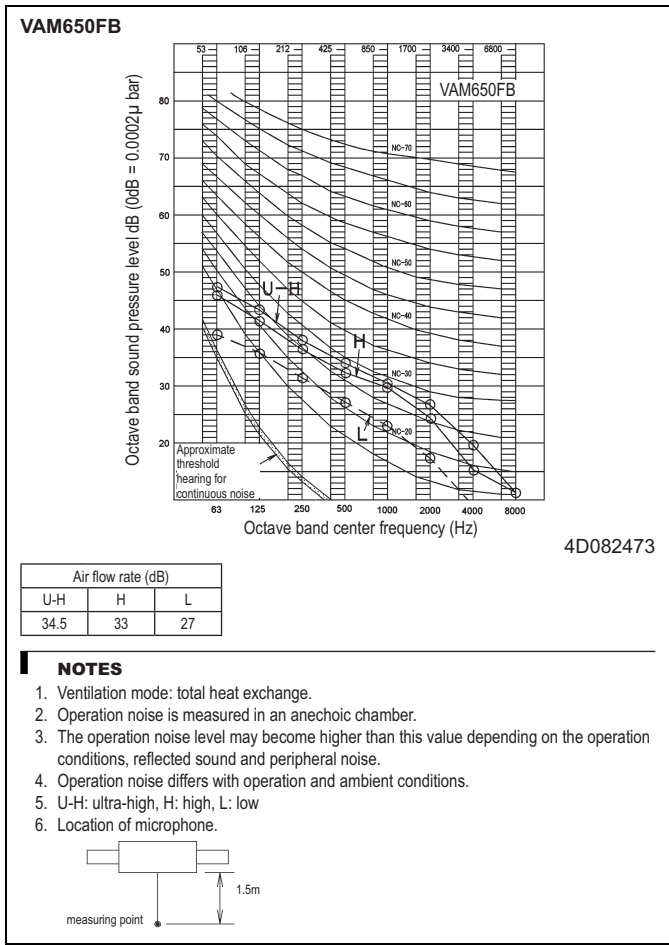
NOTES

- Ventilation mode: total heat exchange.
- Operation noise is measured in an anechoic chamber.
- The operation noise level may become higher than this value depending on the operation conditions, reflected sound and peripheral noise.
- Operation noise differs with operation and ambient conditions.
- U-H: ultra-high, H: high, L: low
- Location of microphone.

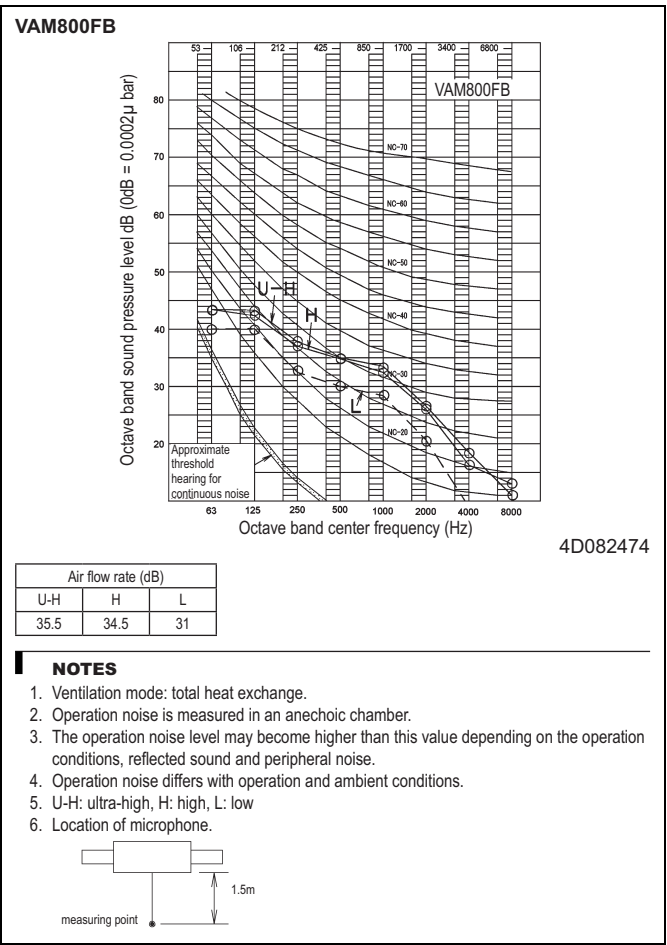


9 Sound data

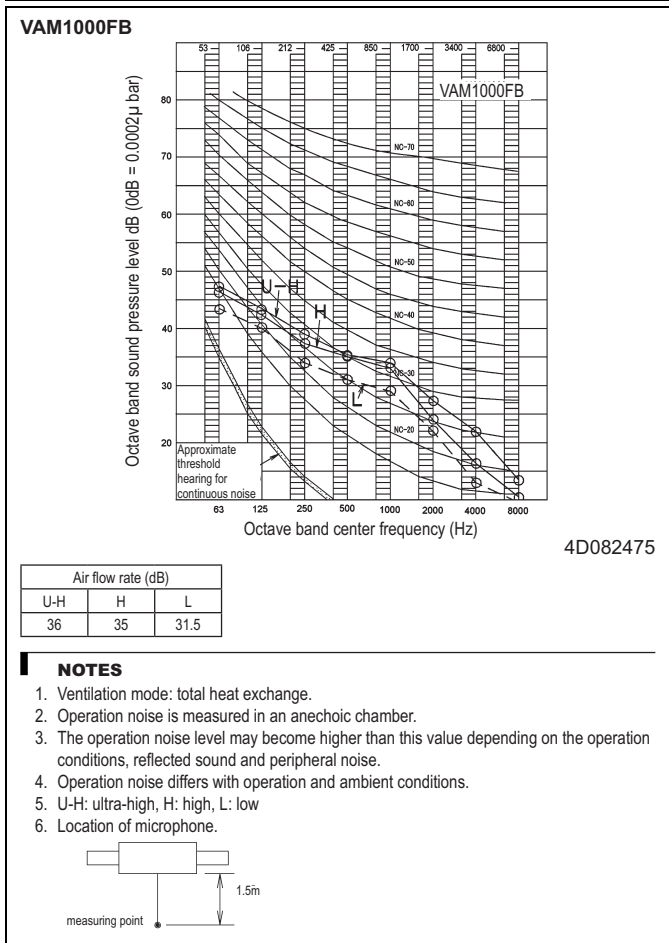
9 - 2 Sound Pressure Spectrum



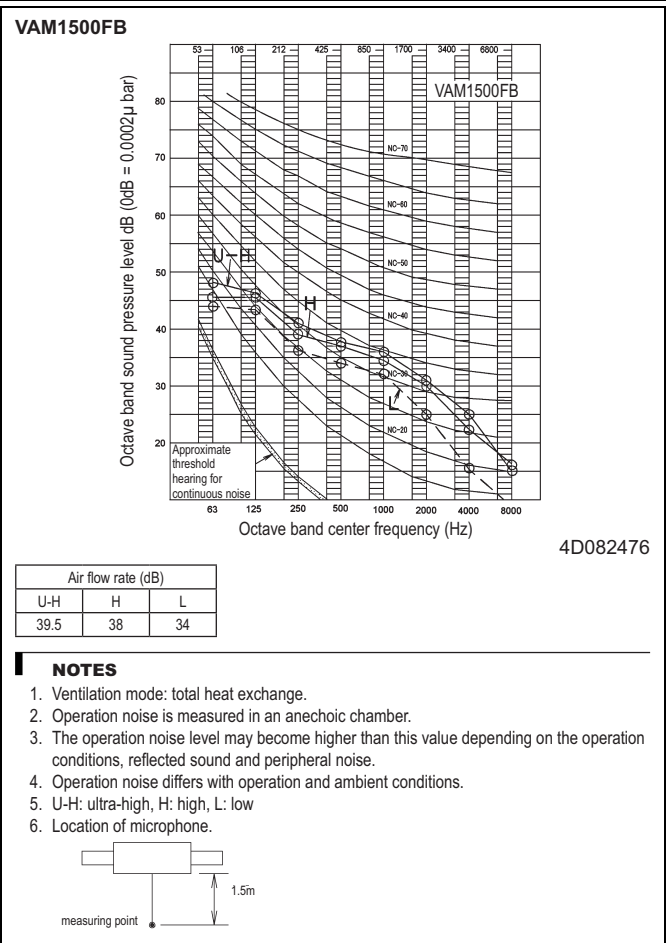
4D082473



4D082474



4D082475



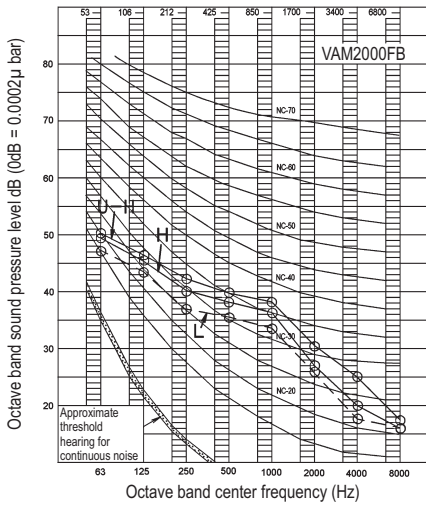
4D082476

9 Sound data

9 - 2 Sound Pressure Spectrum

9

VAM2000FB

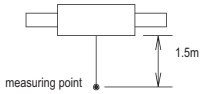


4D082477

Air flow rate (dB)		
U-H	H	L
40	38	35

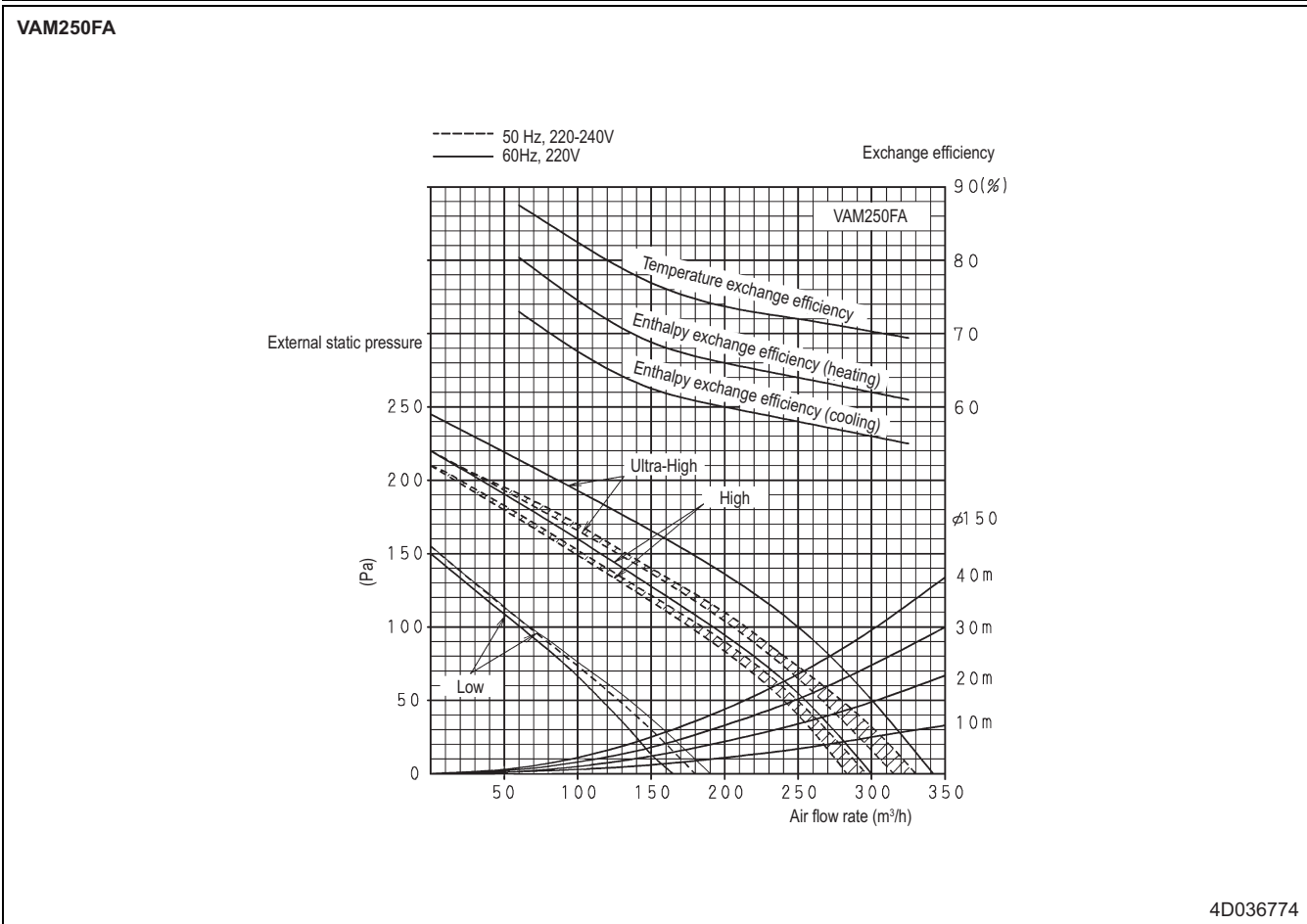
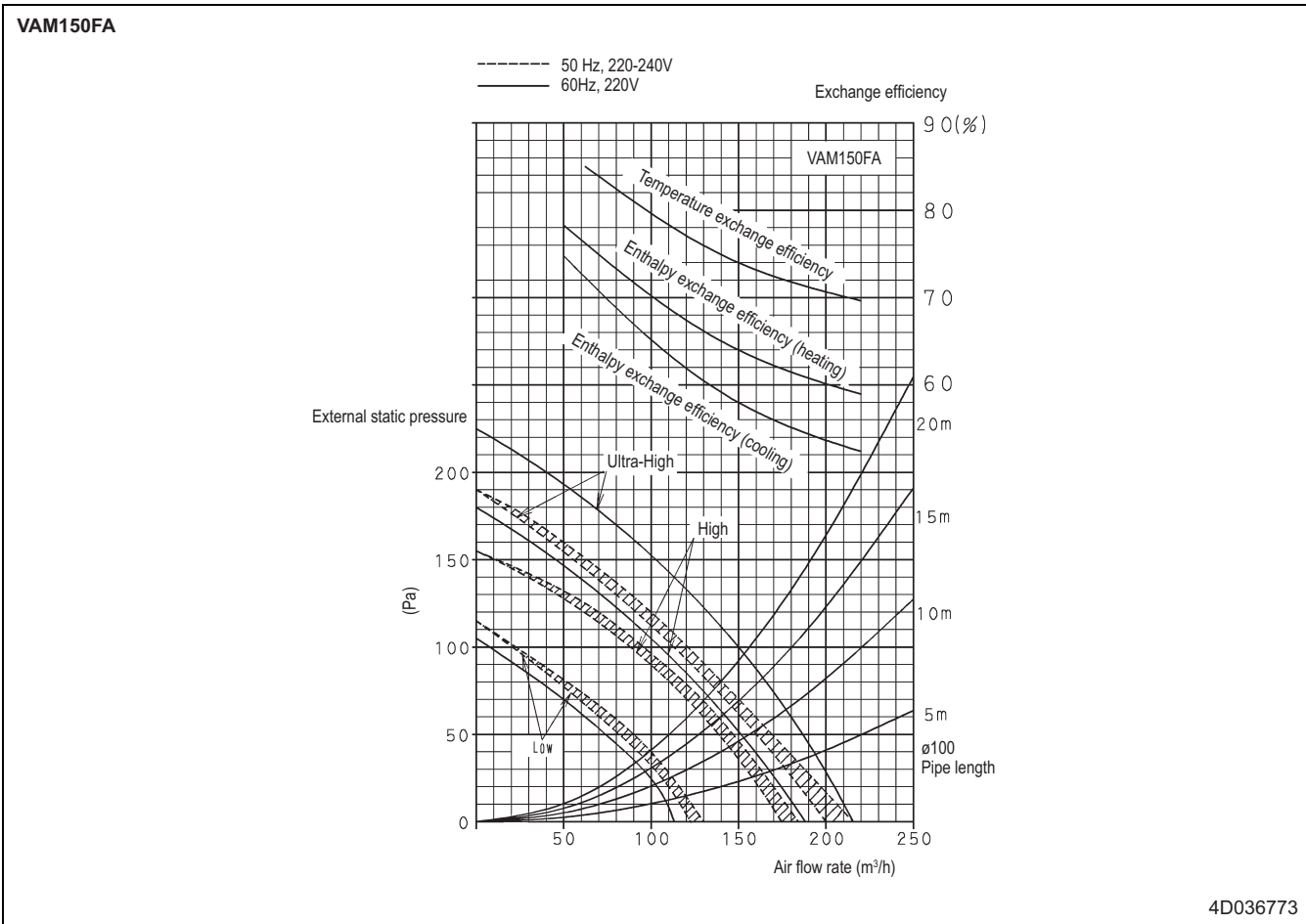
NOTES

1. Ventilation mode: total heat exchange.
2. Operation noise is measured in an anechoic chamber.
3. The operation noise level may become higher than this value depending on the operation conditions, reflected sound and peripheral noise.
4. Operation noise differs with operation and ambient conditions.
5. U-H: ultra-high, H: high, L: low
6. Location of microphone.



10 Fan characteristics

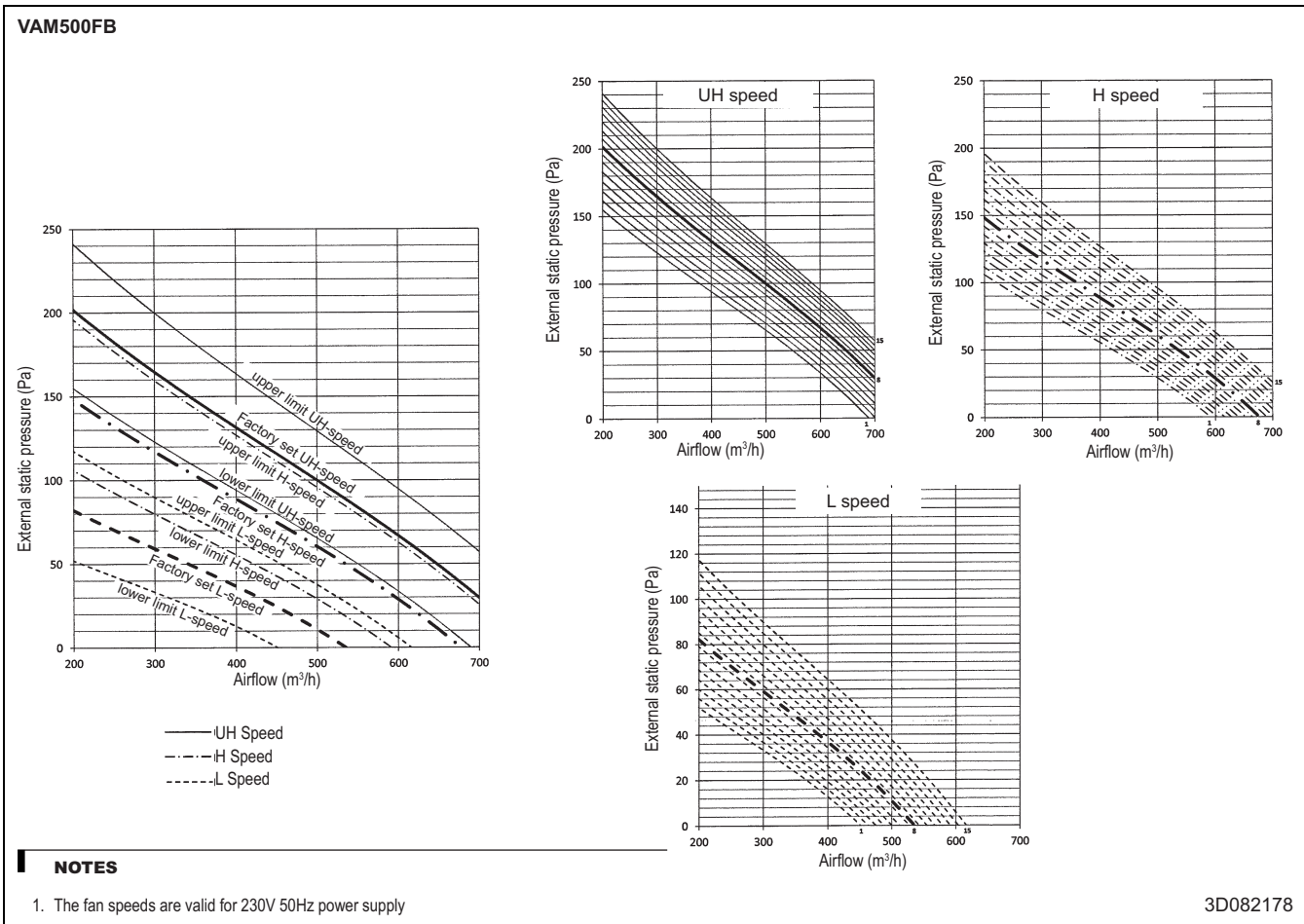
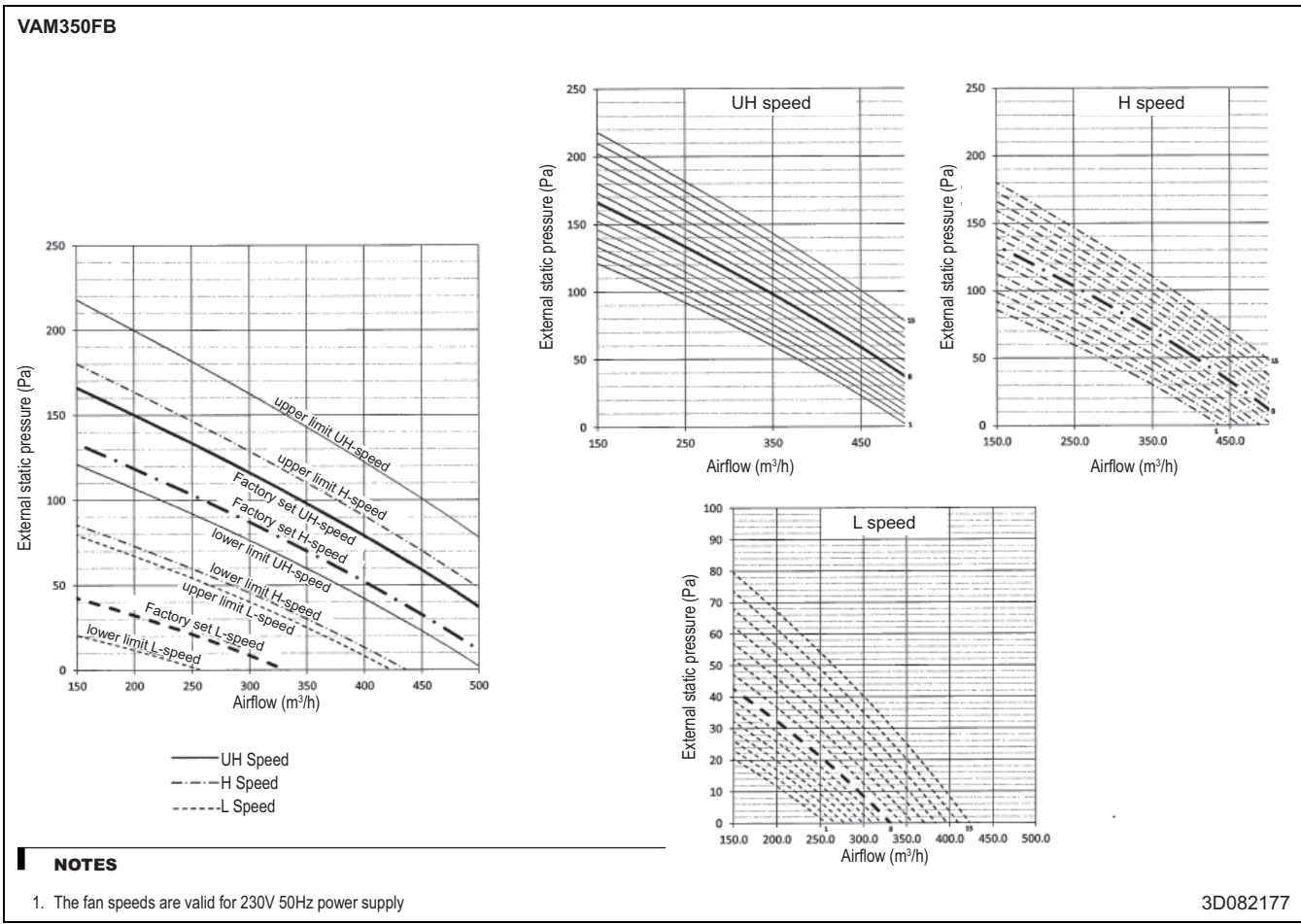
10 - 1 Fan Characteristics



10 Fan characteristics

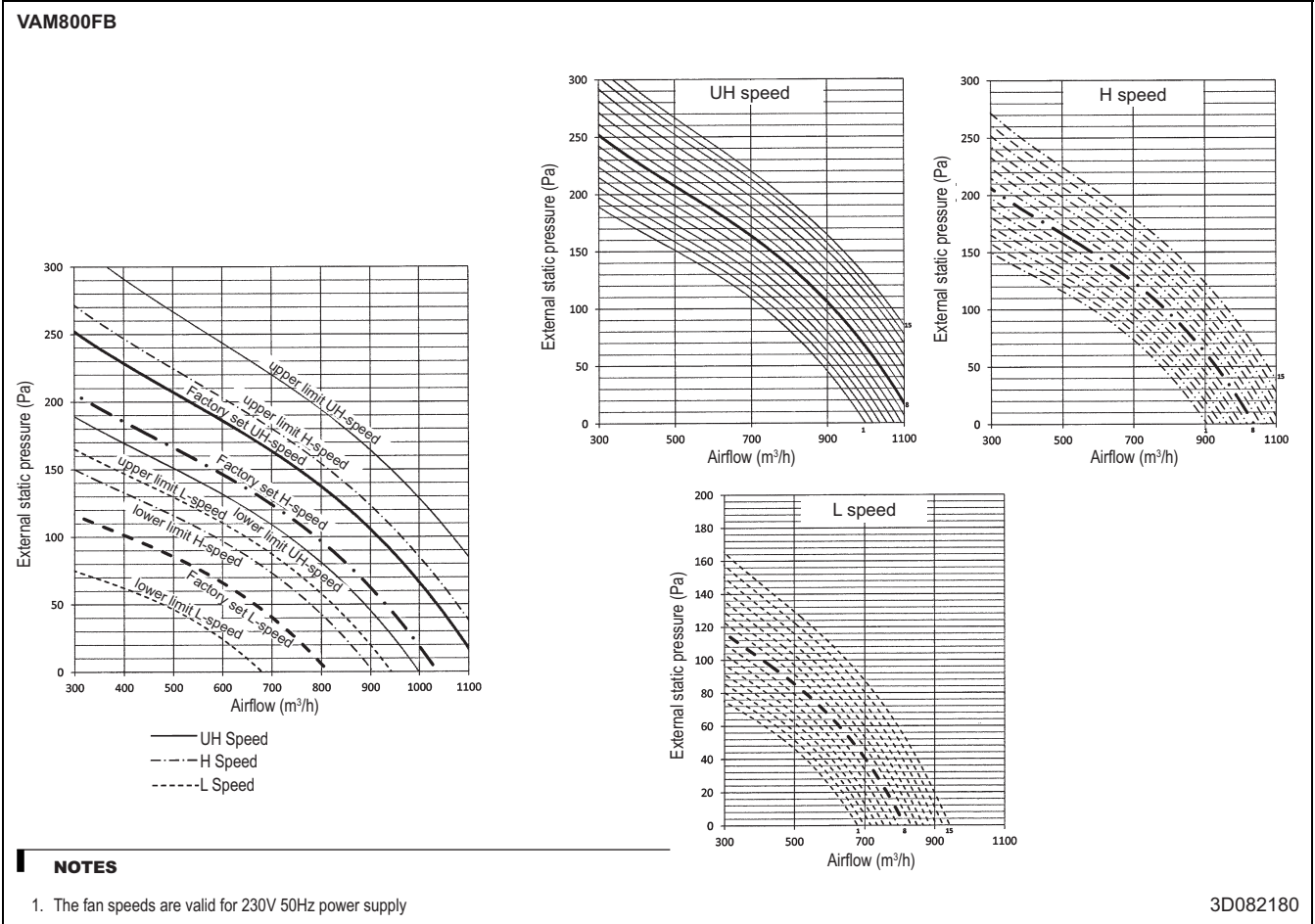
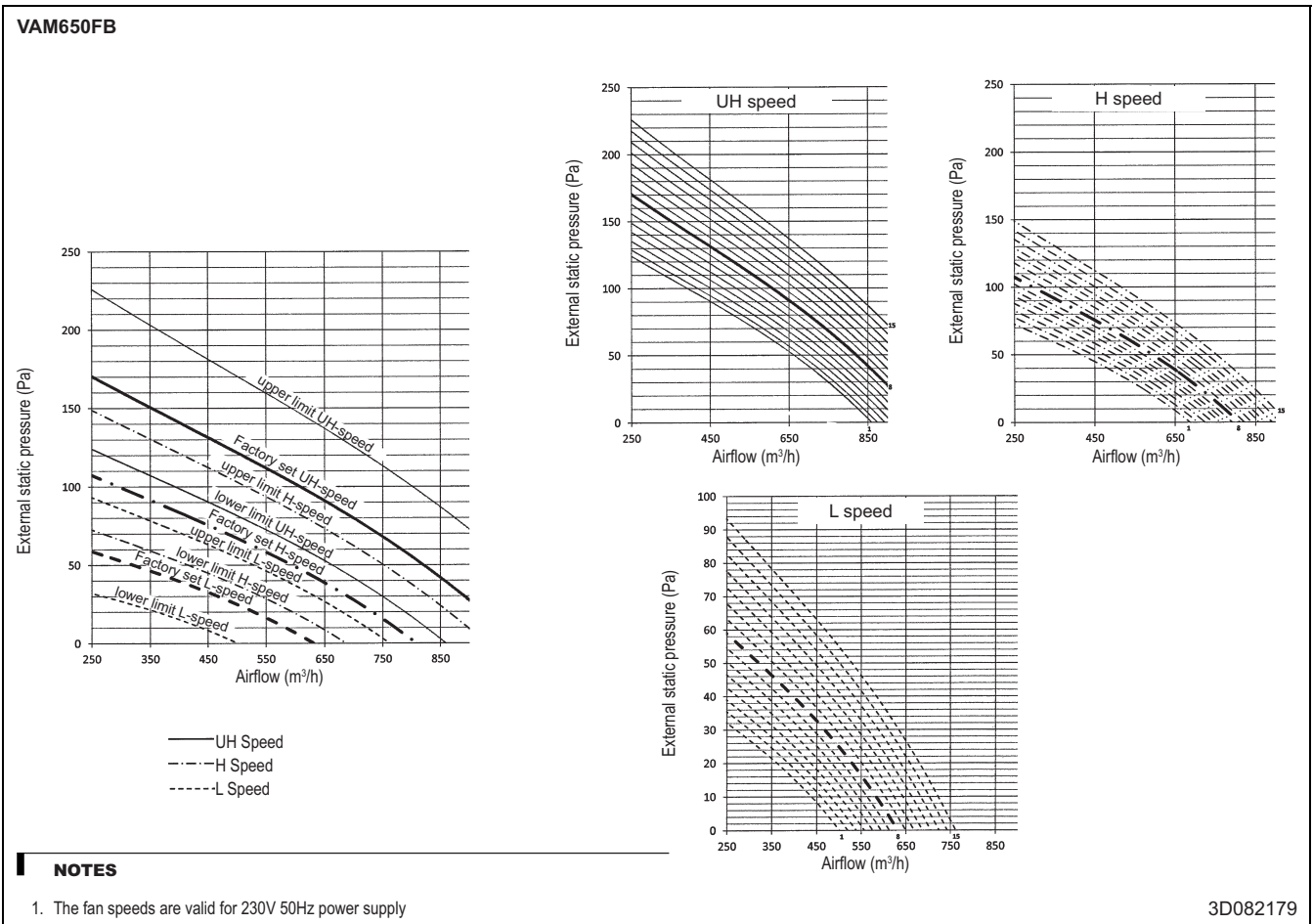
10 - 1 Fan Characteristics

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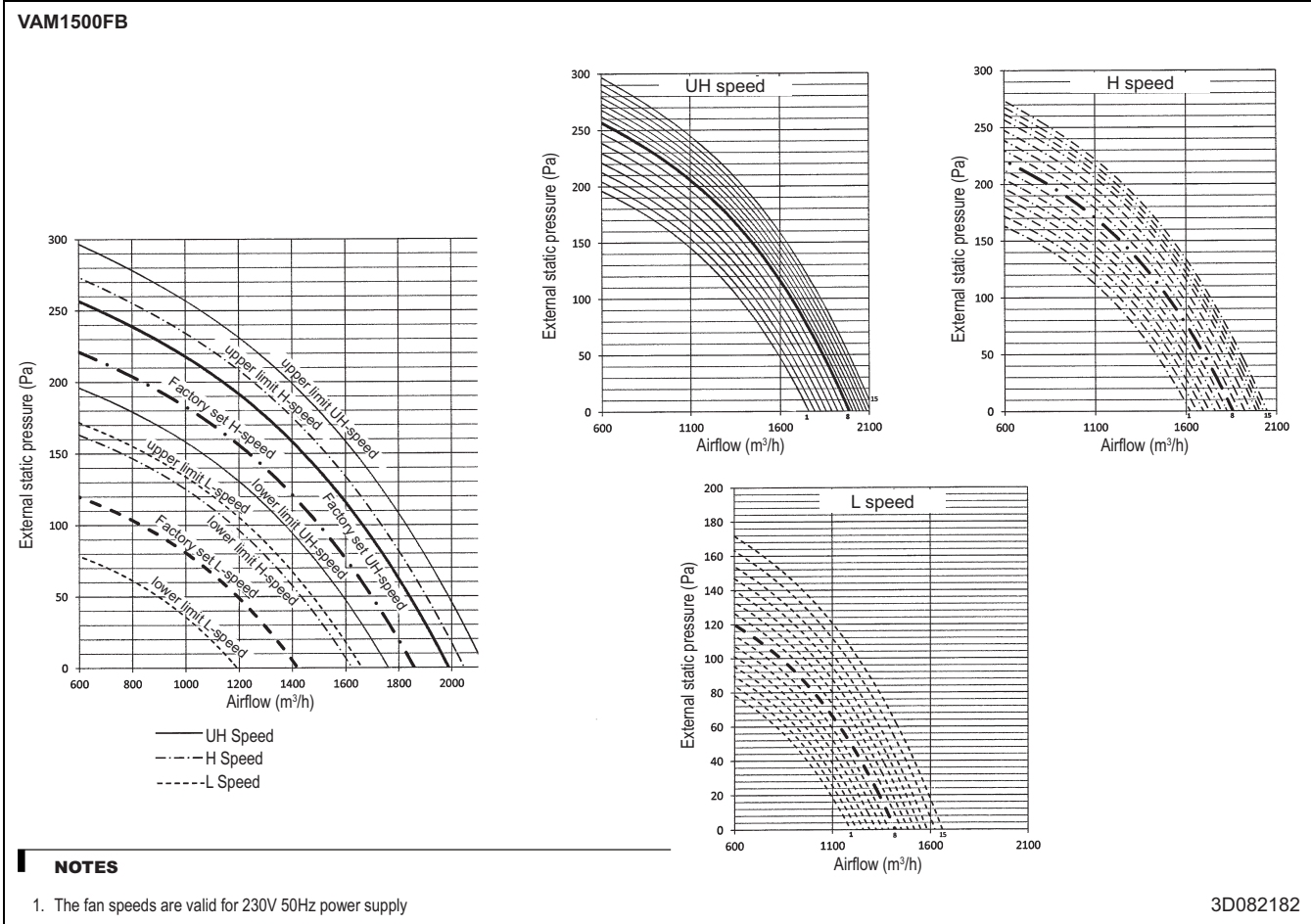
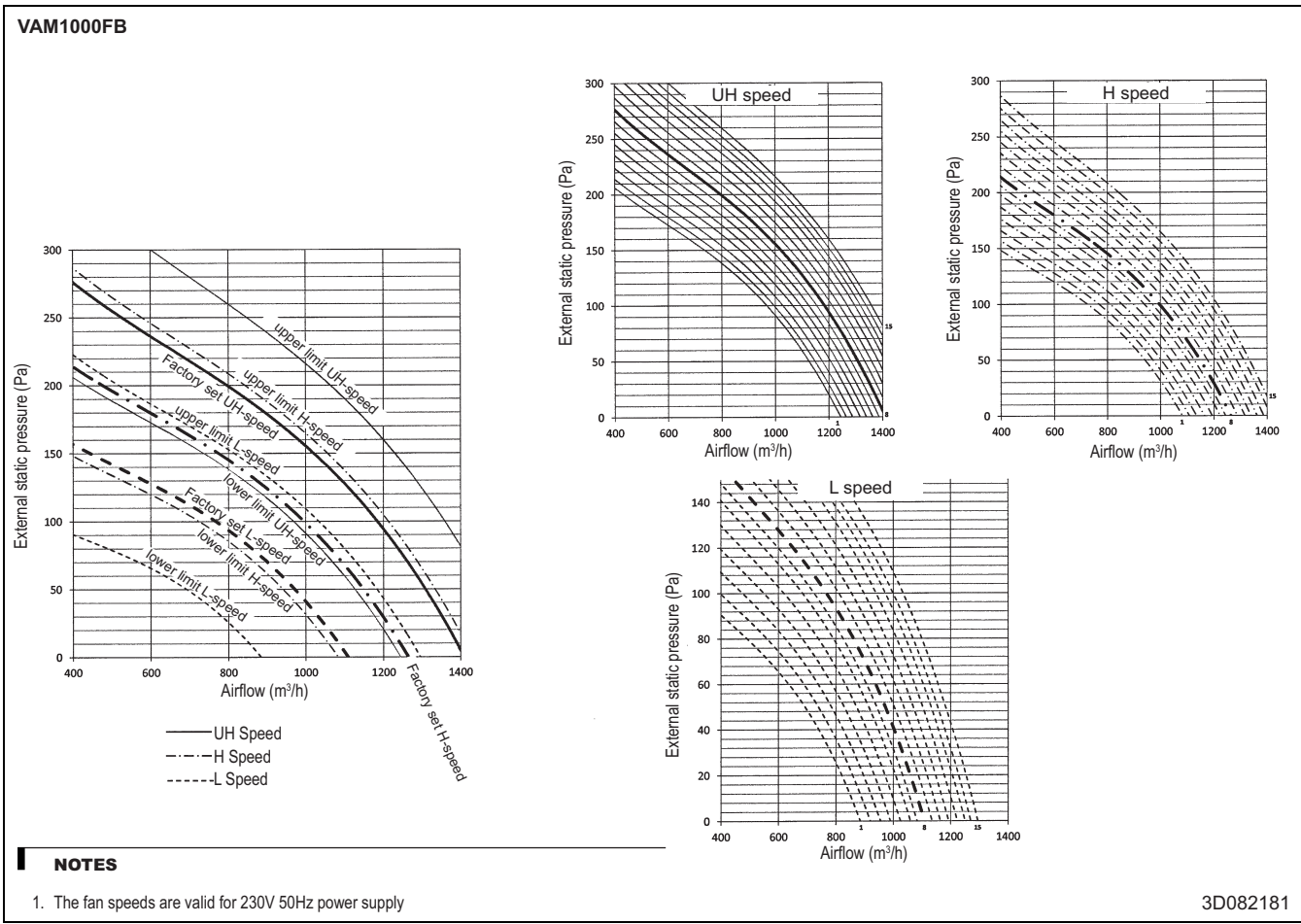
10 Fan characteristics

10 - 1 Fan Characteristics



10 Fan characteristics

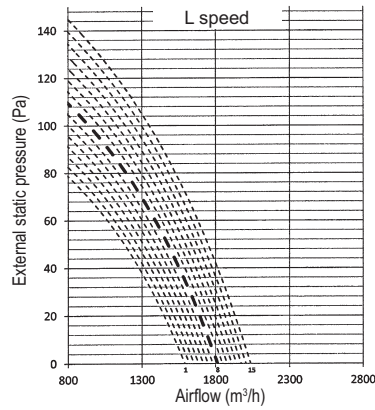
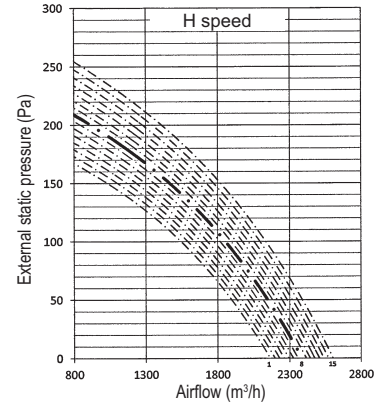
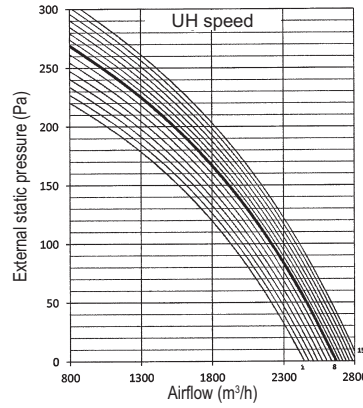
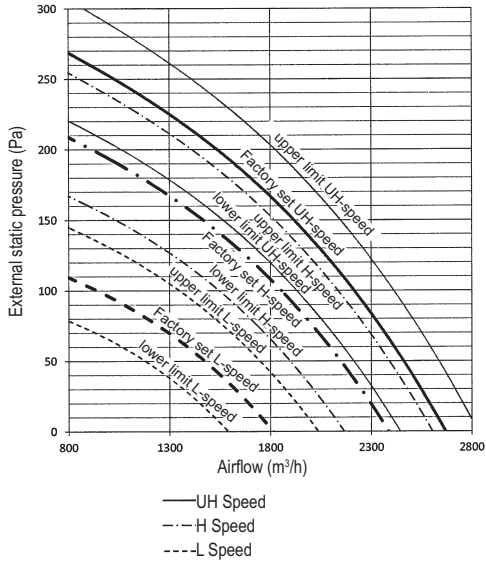
10 - 1 Fan Characteristics



10 Fan characteristics

10 - 1 Fan Characteristics

VAM2000FB



NOTES

1. The fan speeds are valid for 230V 50Hz power supply

3D082183

11 Air filter characteristics

11 - 1 High efficiency filter / dust filter for VAM350-2000FB

11 - 1 - 1 Information for filter selection

- 1 choose required airflow
- 2 choose the filters
- 3 add up all the pressure drops of the duct system on the installation site and the filters
[For filter characteristics, refer to D-drawings]
- 4 compare this with the unit performance characteristics to see resulting airflow & ESP

Download the VAM selection software on the Daikin extranet for easy selection

11 - 1 - 1 - 1 Choose required airflow

Choose the required airflow based upon the application/information

11 - 1 - 1 - 2 Choose the filters

Depending on the application prefilters and/or dust filters will be needed.

Filter requirements according to EN779:

Table: Recommended dust filter classes per filter section (definition of filter classes according to EN 779)

Outdoor Air Quality	Indoor Air Quality			
	IDA 1 (High)	IDA 2 (Medium)	IDA 3 (Moderate)	IDA 4 (Low)
ODA 1 (pure air)	F9	F8	F7	F5
ODA 2 (dust)	F7+F9	F6+F8	F5+F7	F5+F6
ODA 3 (very high concentrations of dust of gases)	F7+GF+F9 ^{*)}	4R+GF+F9 ^{*)}	F5+F7	F5+F6

^{*)} GF = Gas filter (carbon filter) and/or chemical filter

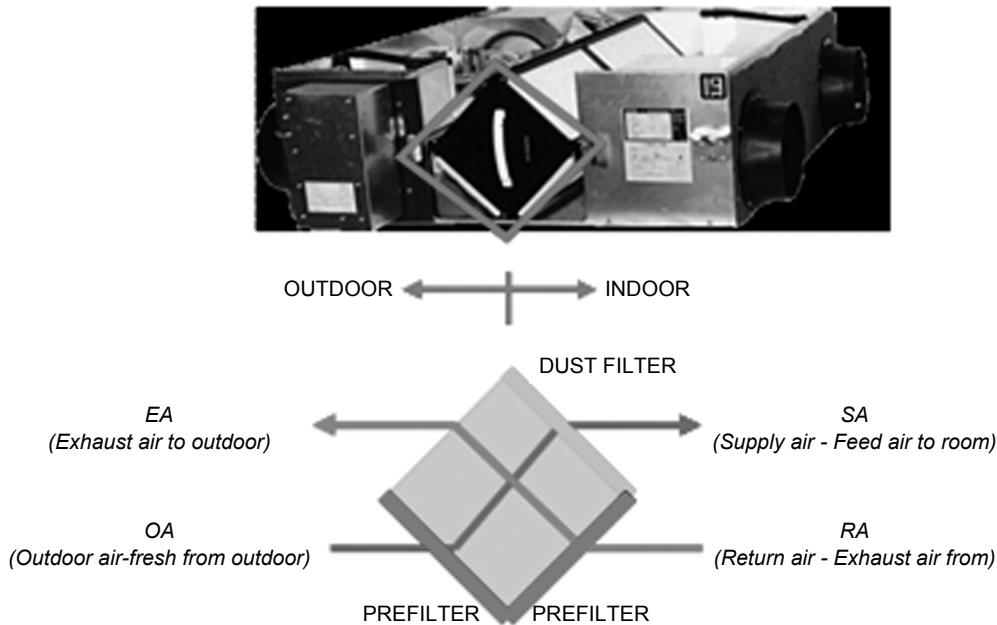
Outdoor air Quality:

- ODA 1 - Pure air
- ODA 2 - High concentration particles air
- ODA 3 - High concentration gas pollution
- ODA 4 - High concentration gas pollution and particles
- ODA 5 - Very high concentration gas pollution and particles

Indoor air Quality:

- IDA 1 - Optimum quality air (hospitals, laboratories, nursery)
- IDA 2 - Good quality air (offices, residences, museum,...)
- IDA 3 - Medium quality air (commercial buildings, cinema, theatre, room hotels, restaurants, bars, gym, computer room)

On the image below it is indicated where the standard prefilters and optional dust filters are installed:



NOTE

- 1 Pre filters are factory mounted, M6, F7 and F8 dust filters are options

11 Air filter characteristics

11 - 1 High efficiency filter / dust filter for VAM350-2000FB

11 - 1 - 1 - 3 Add up all the pressure drops of the duct system on the installation site and the filters

[For filter characteristics, refer to D-drawings]

unit	airflow (m ³ /h)	filter pressure drop		
		M6	F7	F8
VAM350F	350	39	52	88
VAM500F	500	65	87	148
VAM650F	650	61	83	140
VAM800F	800	89	121	206
VAM1000F	1000	80	109	185
VAM1500F	1500	79	106	181
VAM2000F	2000	80	109	185

NOTES

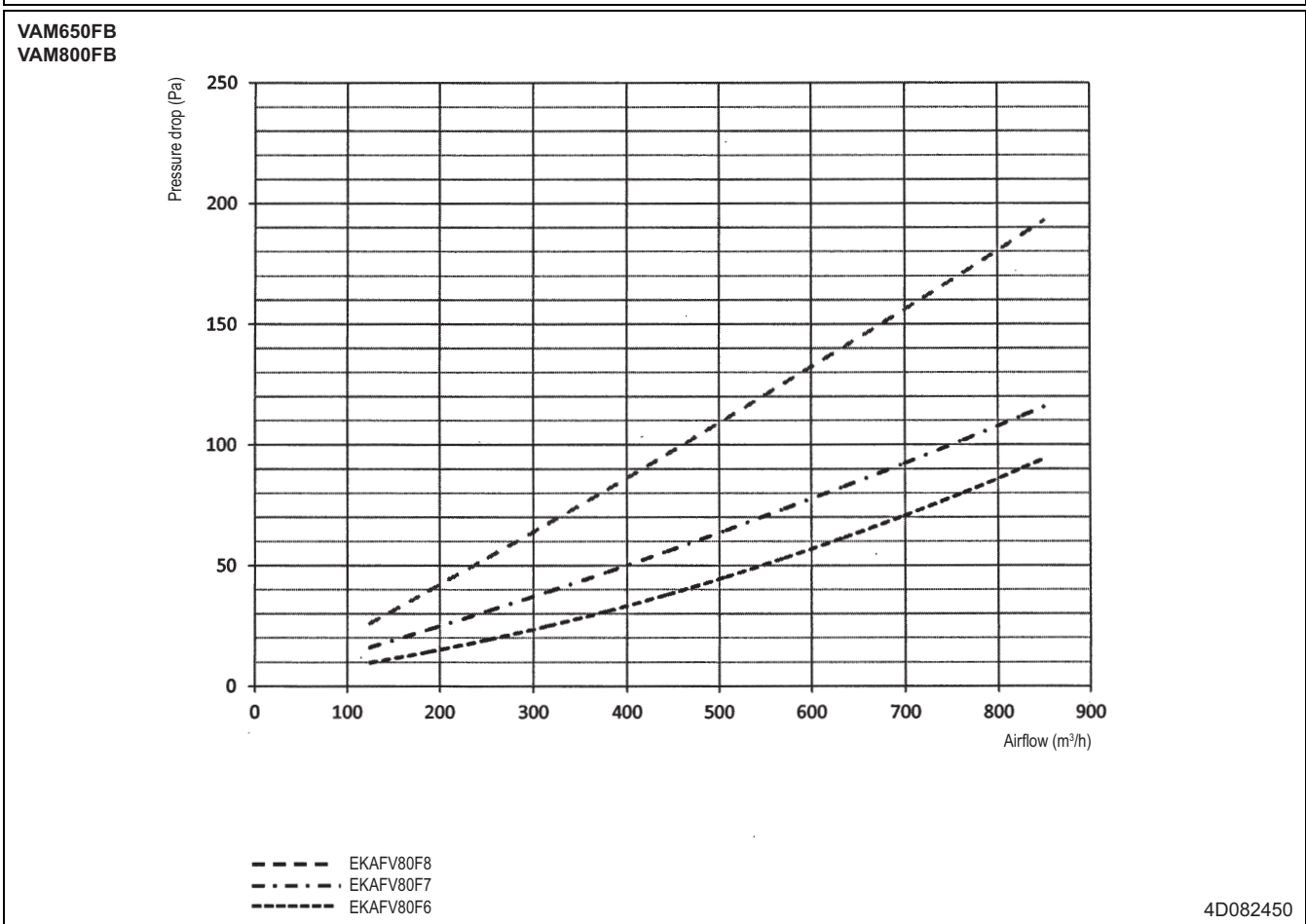
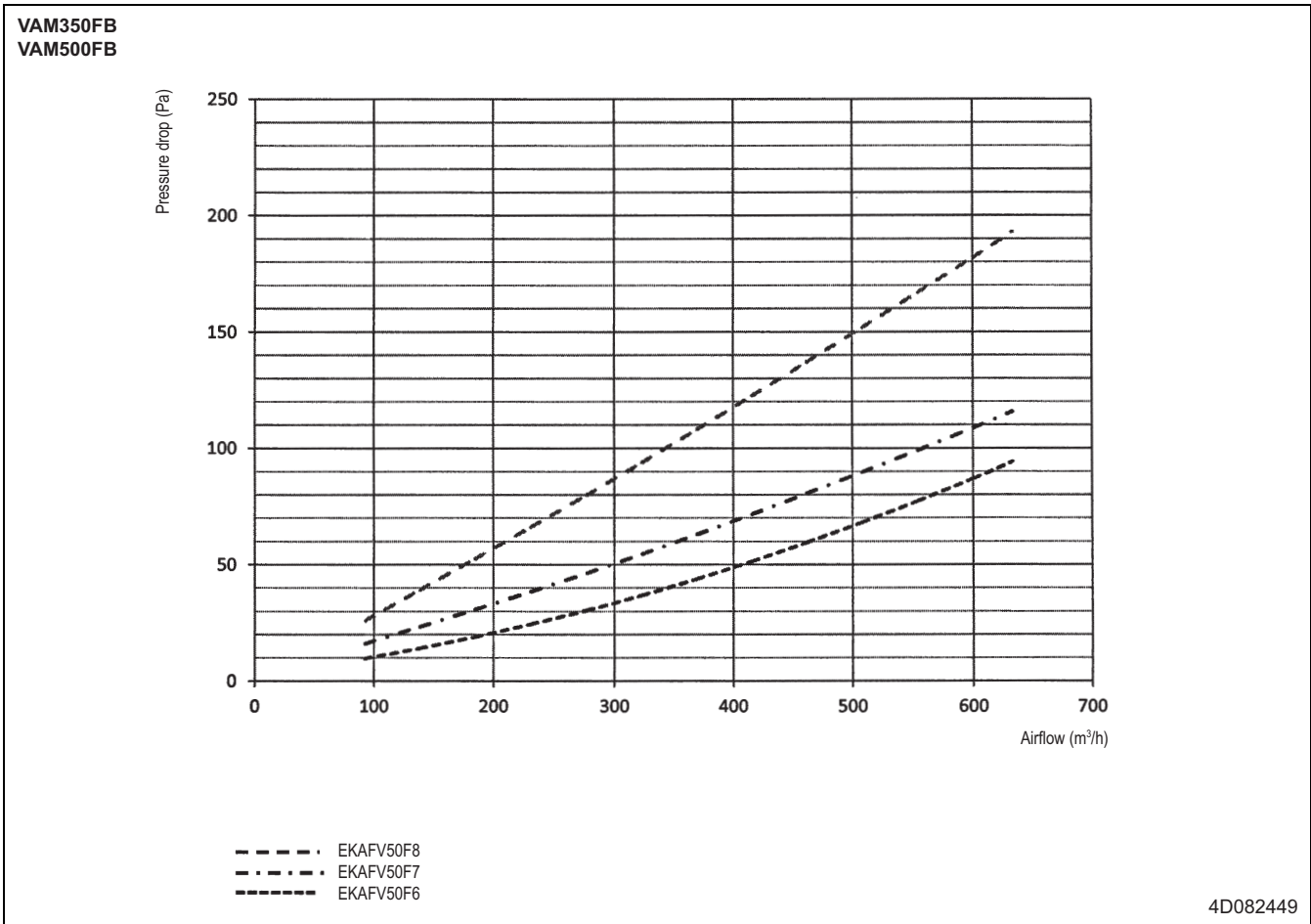
- 1 Table shows values at nominal level, refer to drawings for detailed information
- 2 Filters according to
- 3 For more information refer to VAM installation, operation manual or filter manual

To adjust static pressure after filter placement:

Setting mode	Setting switch No.	Description of setting
17 (27)	0	Filter cleaning time setting
19 (29)	2	SA fan speed setting
	3	EA fan speed setting

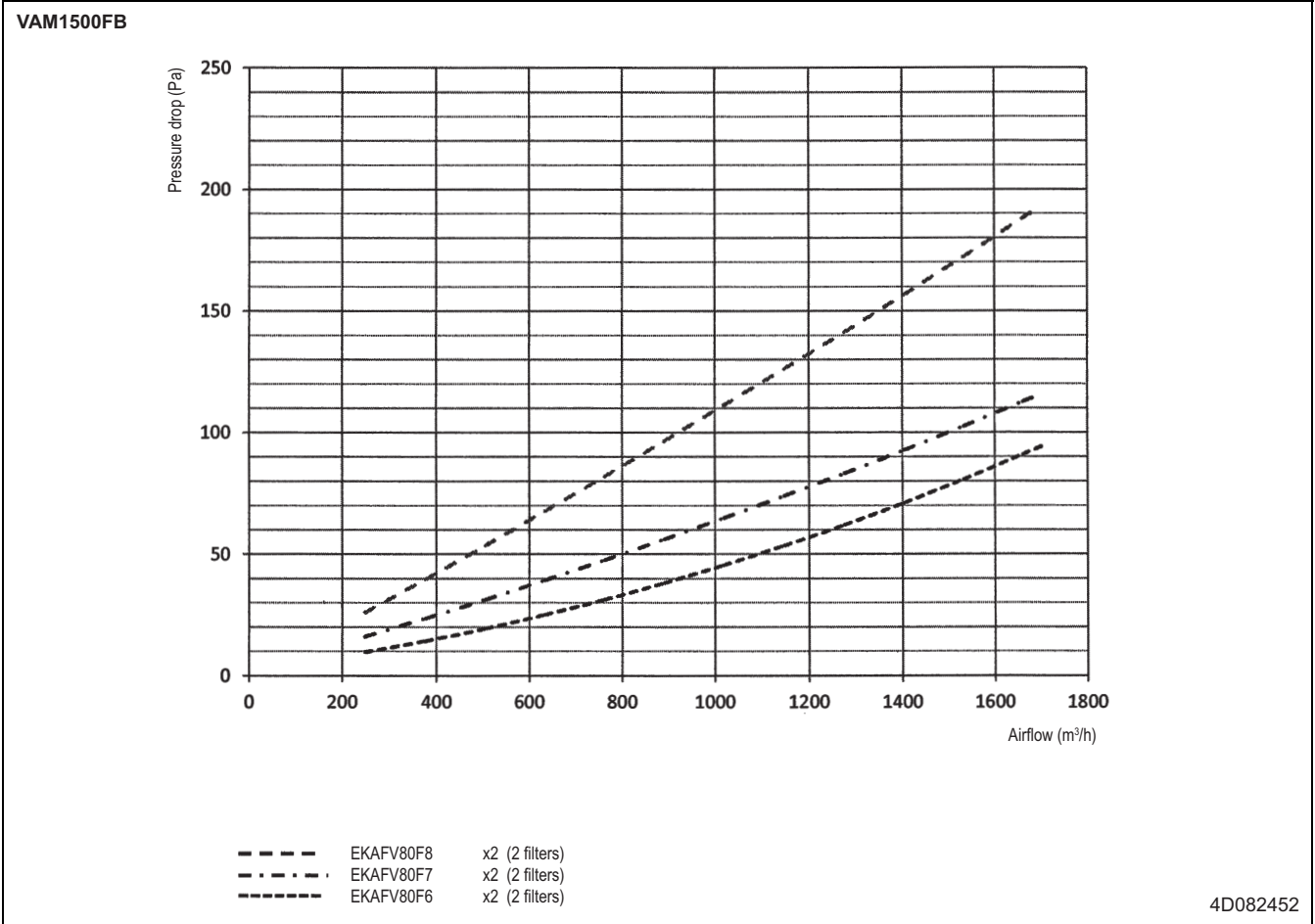
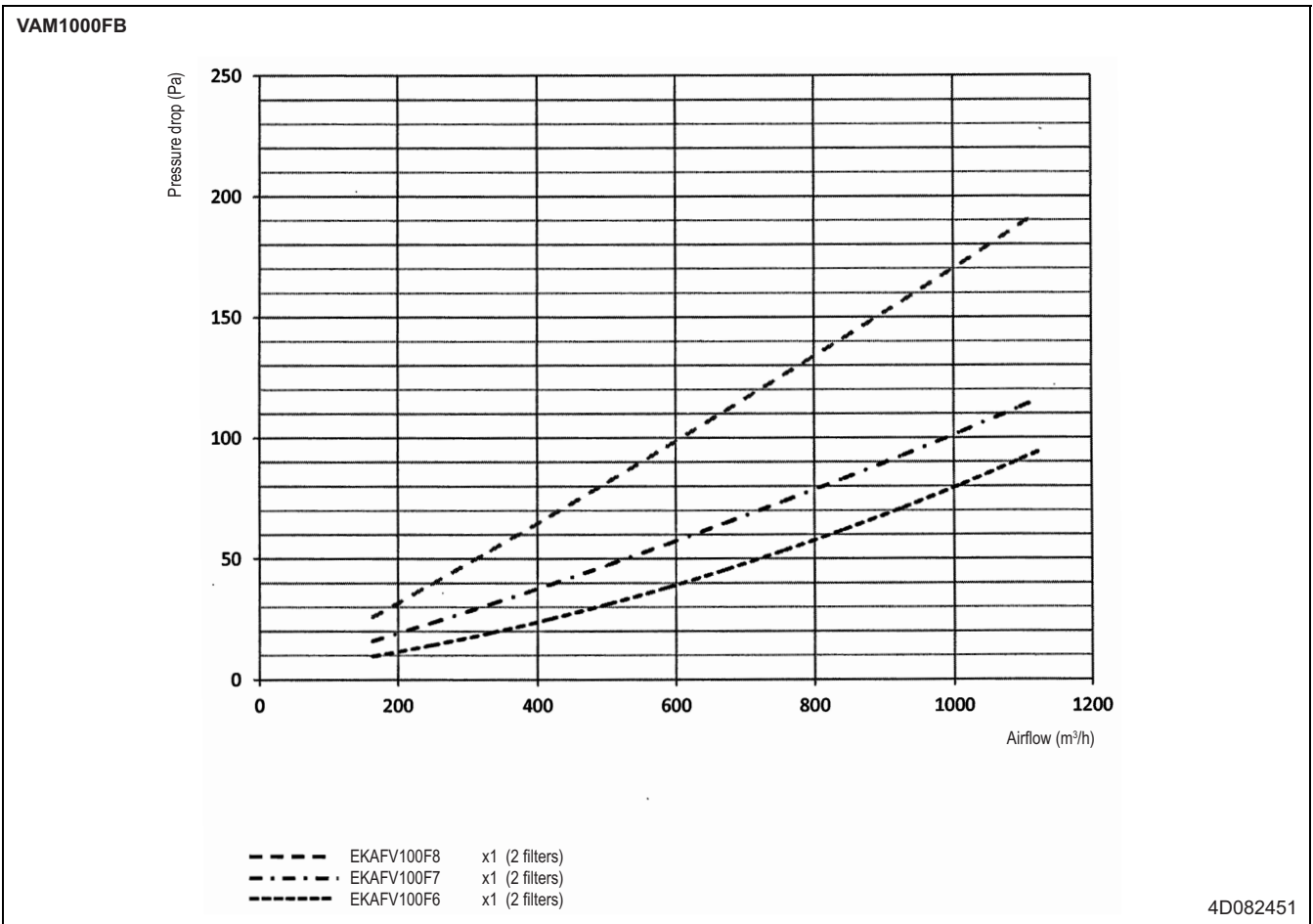
11 Air filter characteristics

11 - 2 Air filter characteristics



11 Air filter characteristics

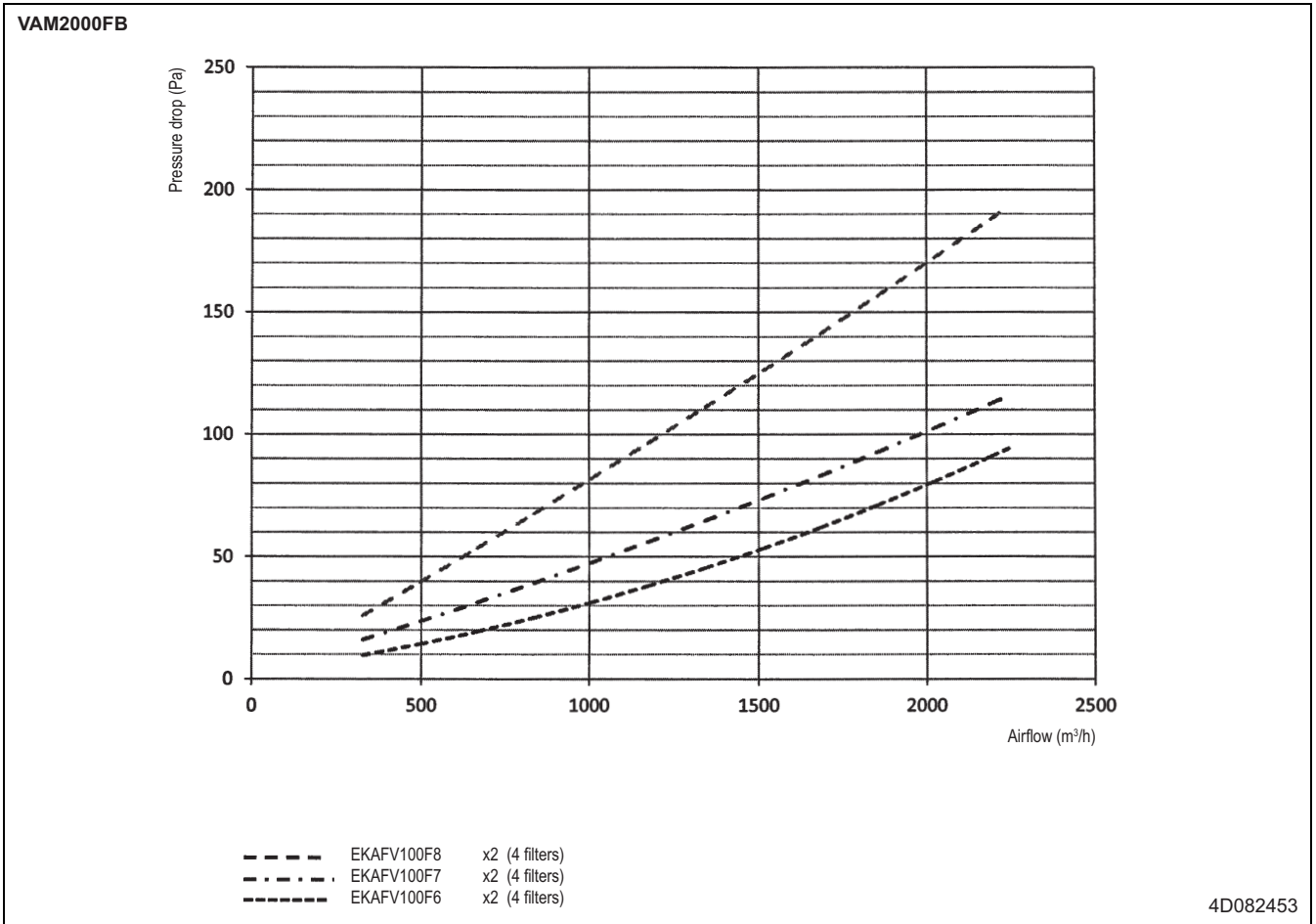
11 - 2 Air filter characteristics



11 Air filter characteristics

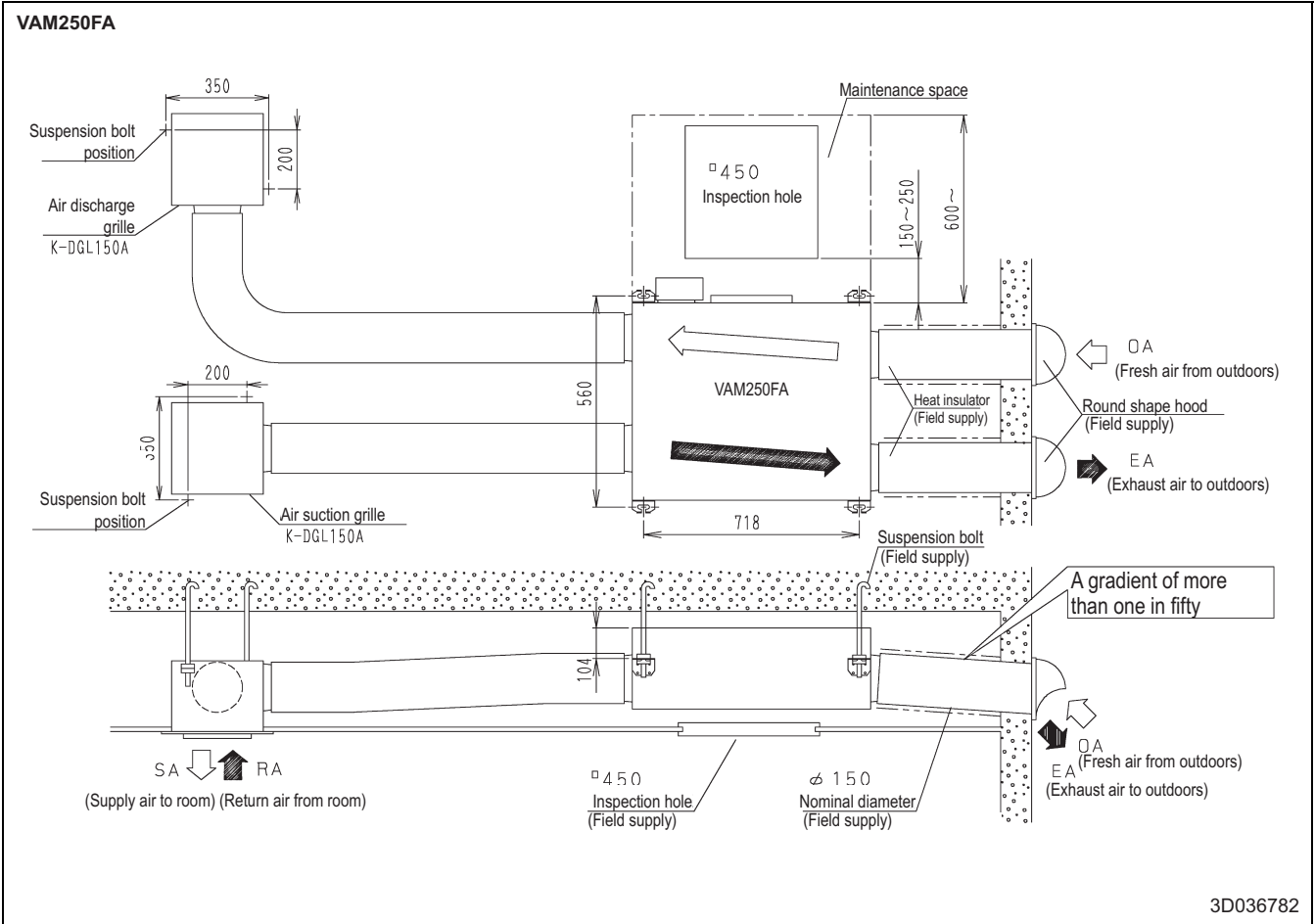
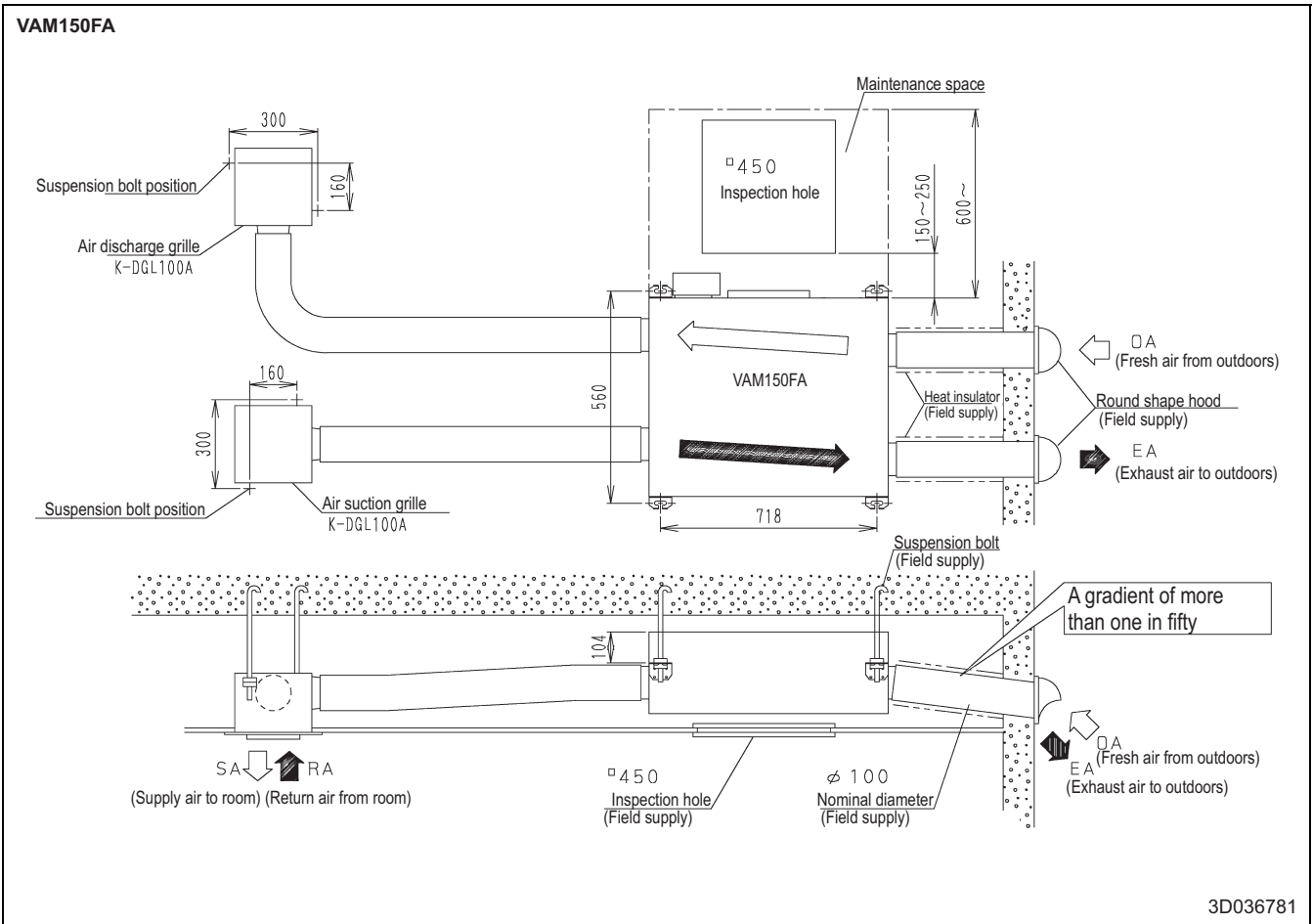
11 - 2 Air filter characteristics

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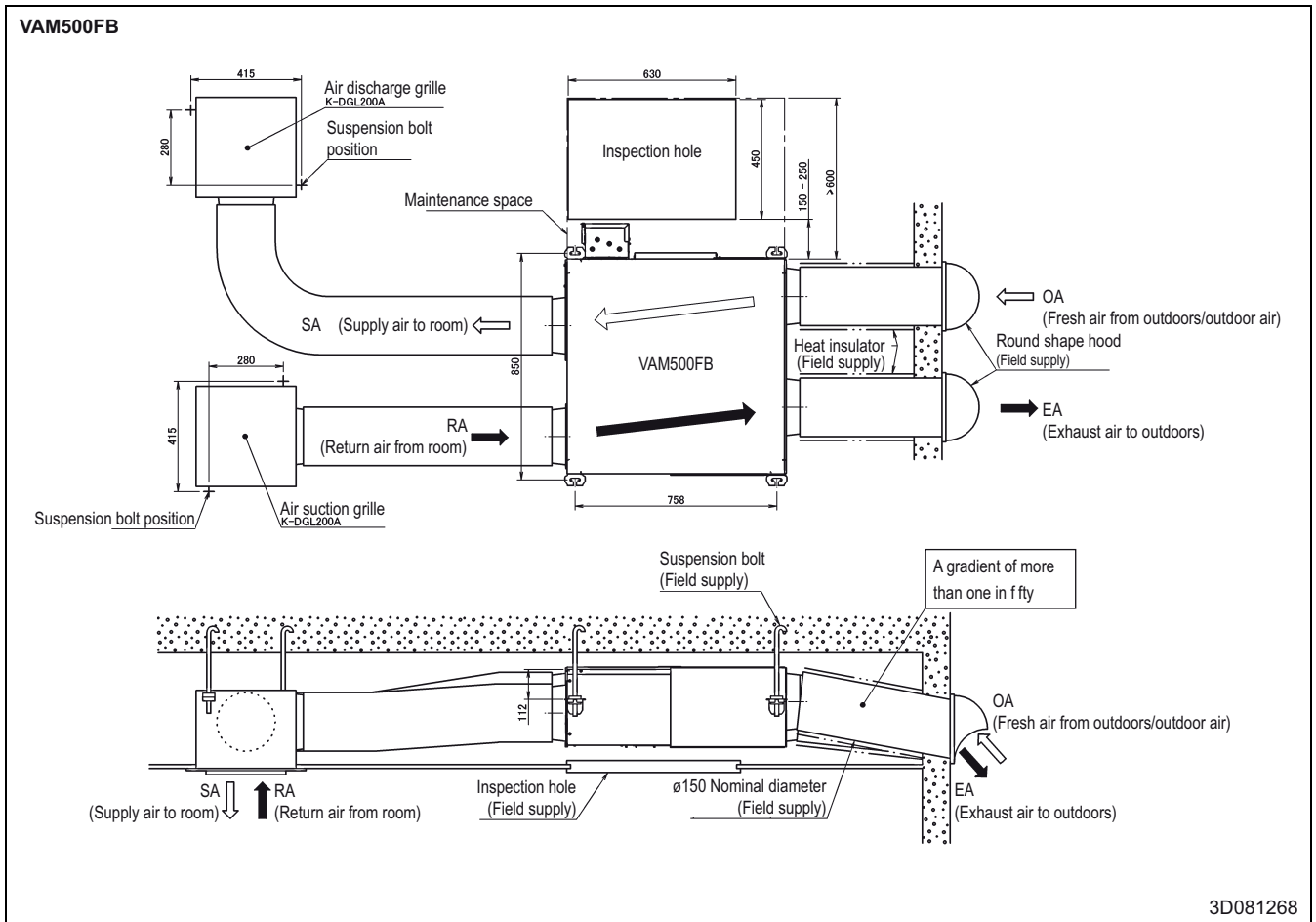
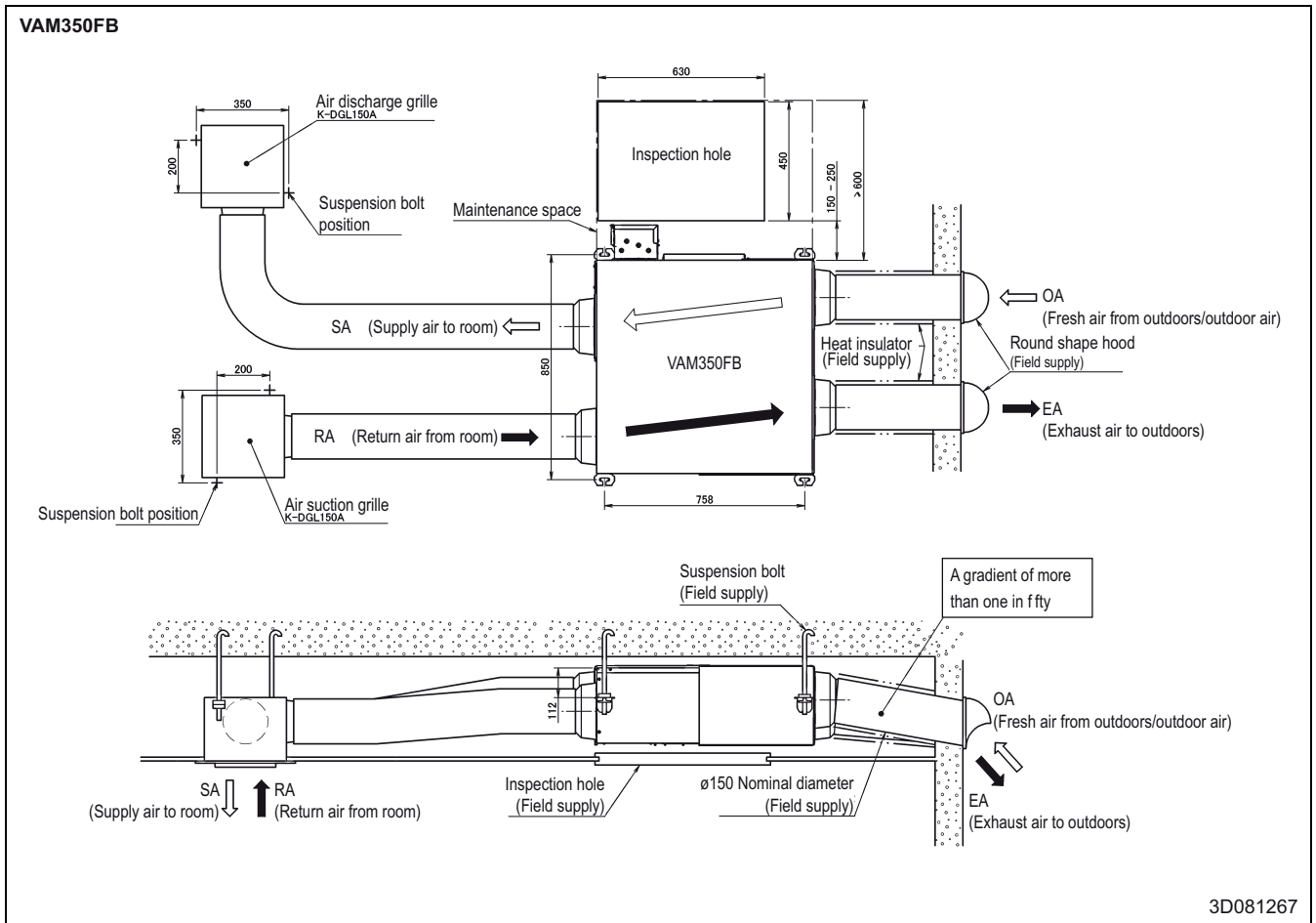
12 Installation

12 - 1 Installation Method



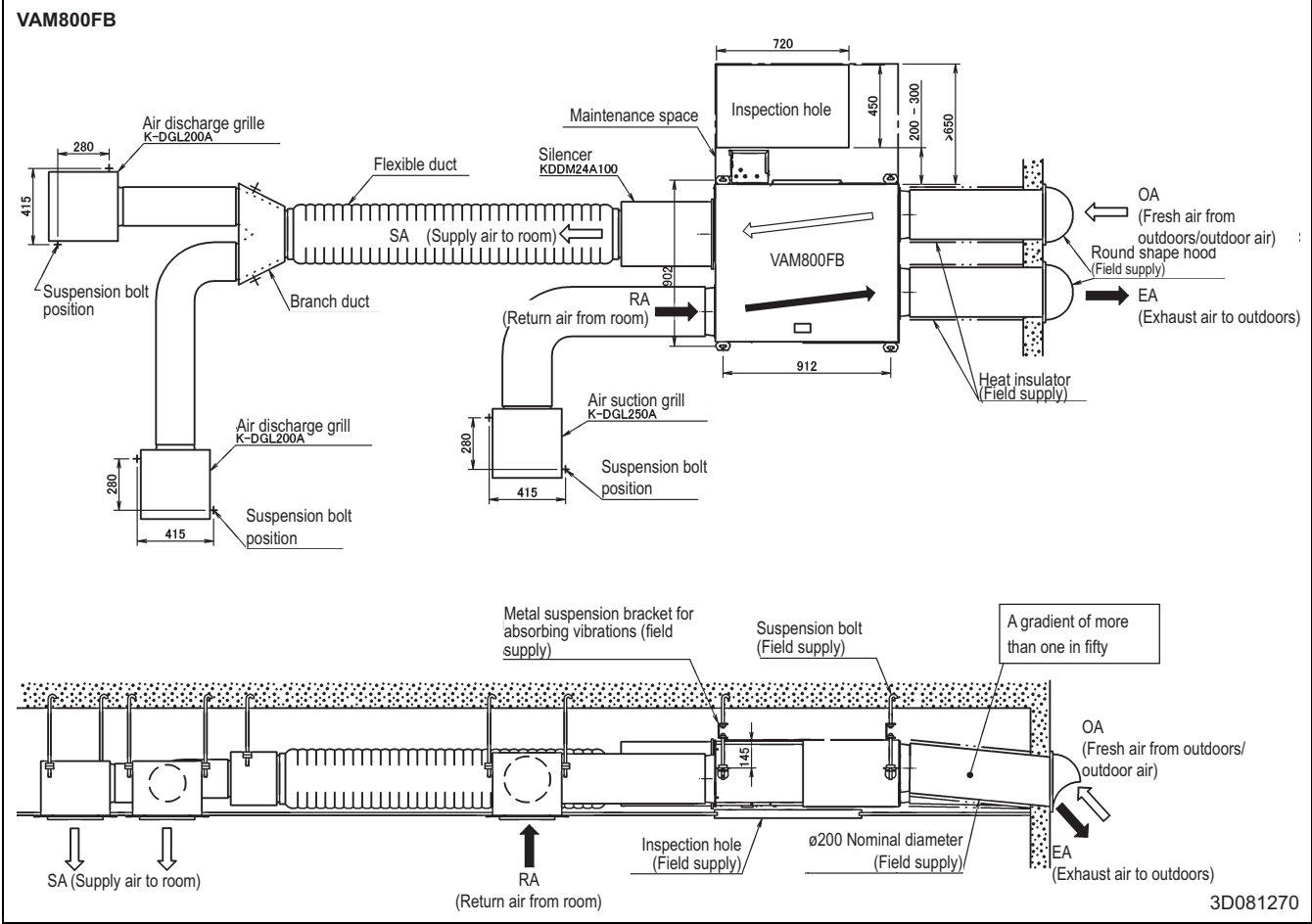
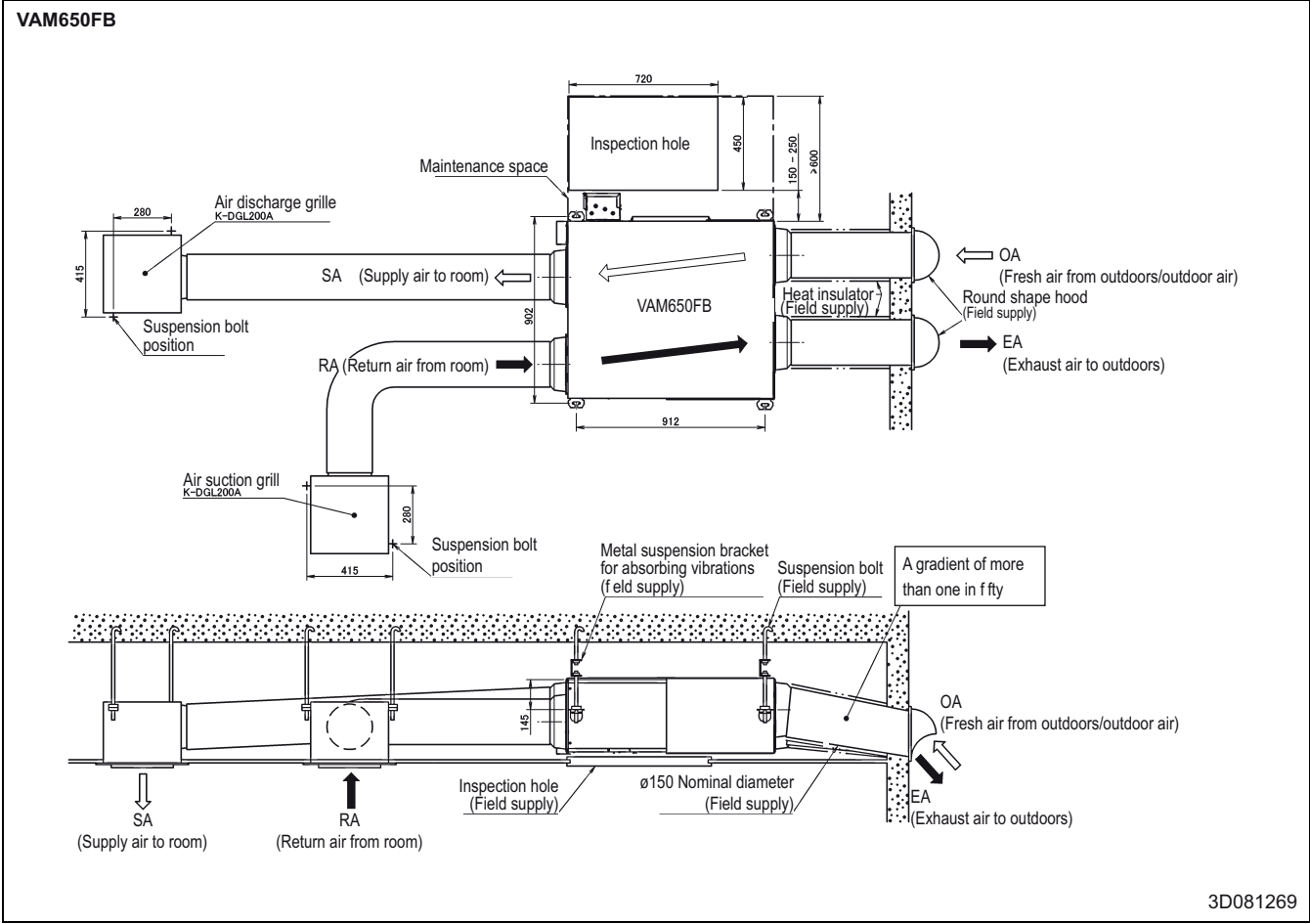
12 Installation

12 - 1 Installation Method



12 Installation

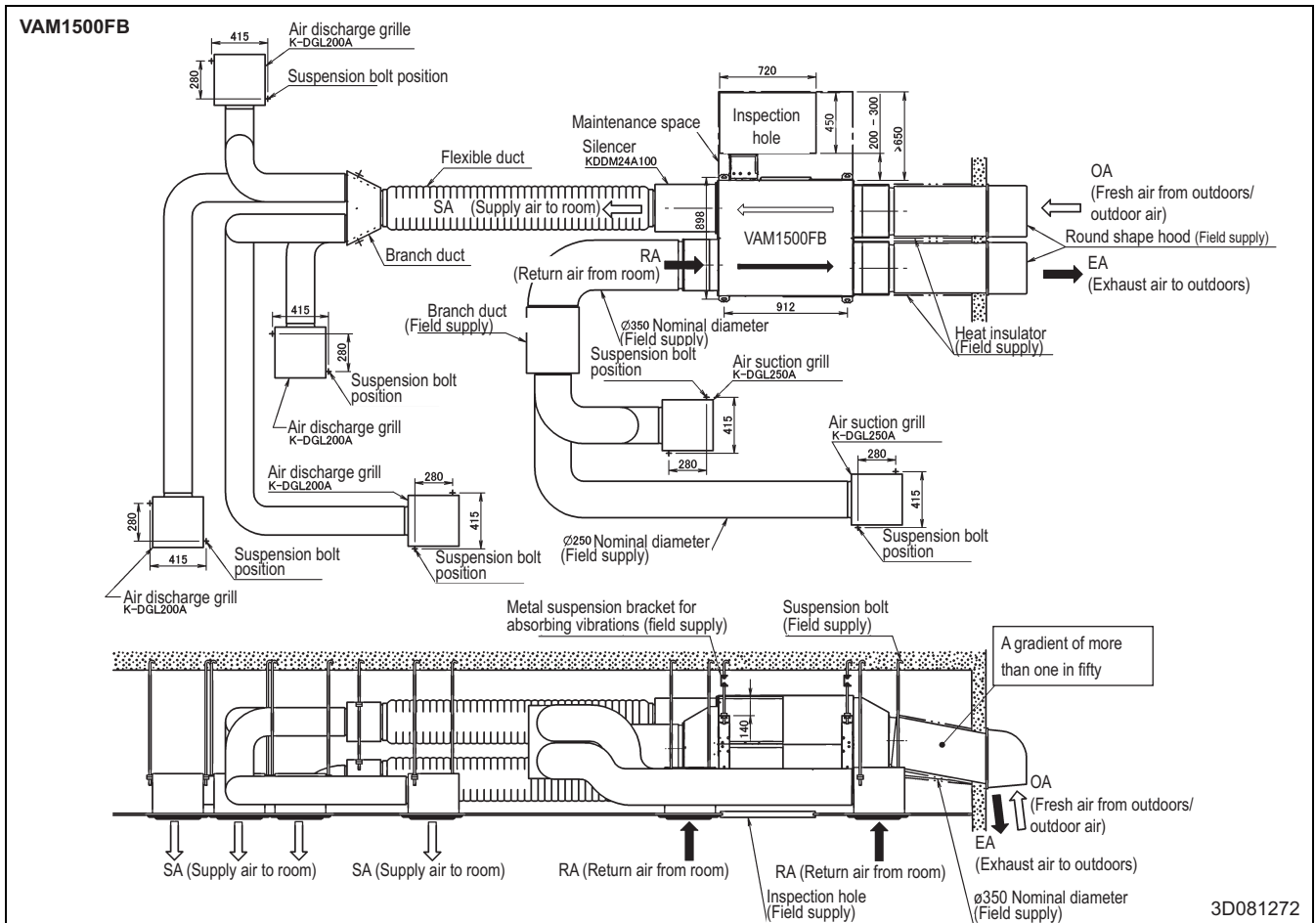
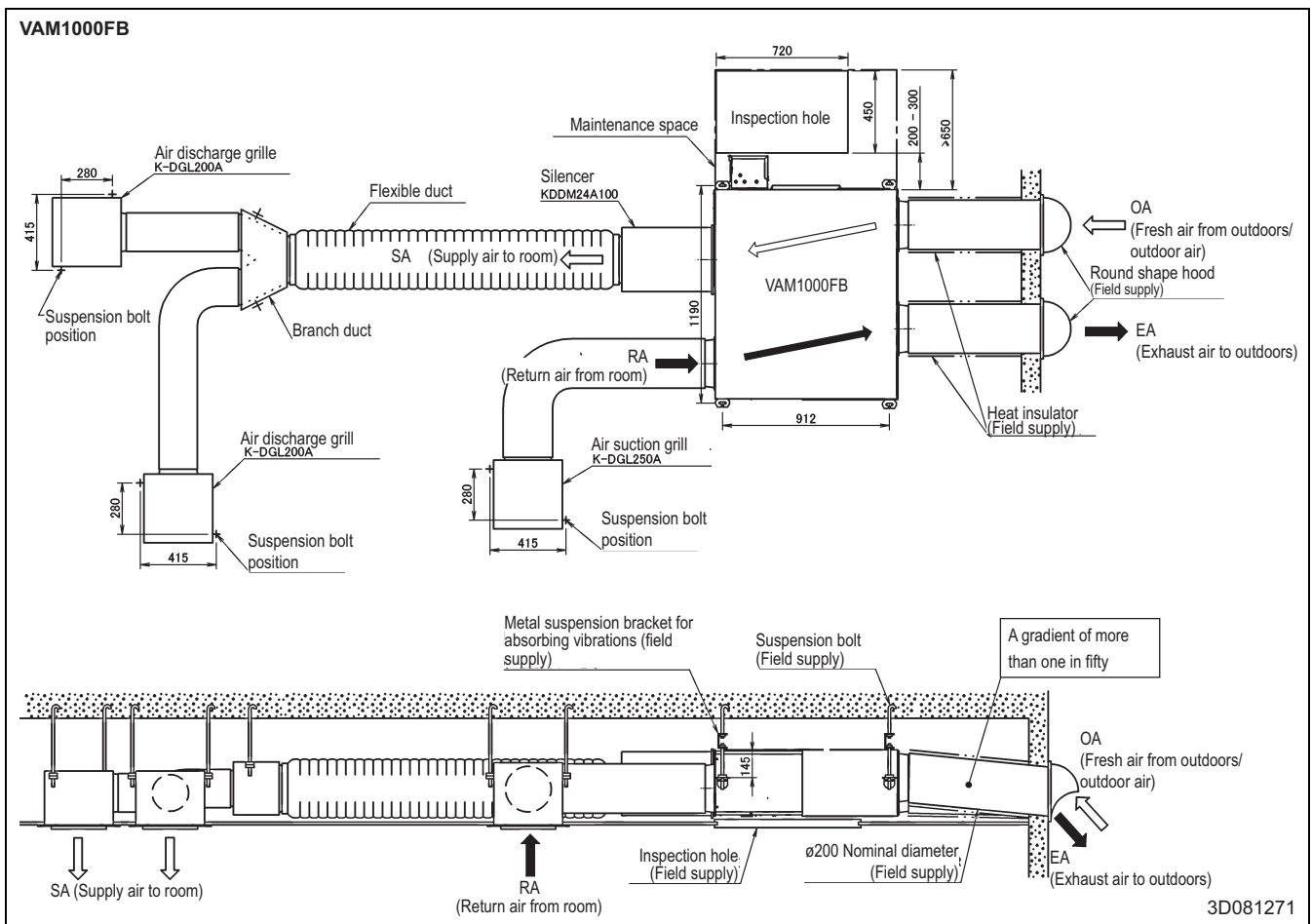
12 - 1 Installation Method



12 Installation

12 - 1 Installation Method

12





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