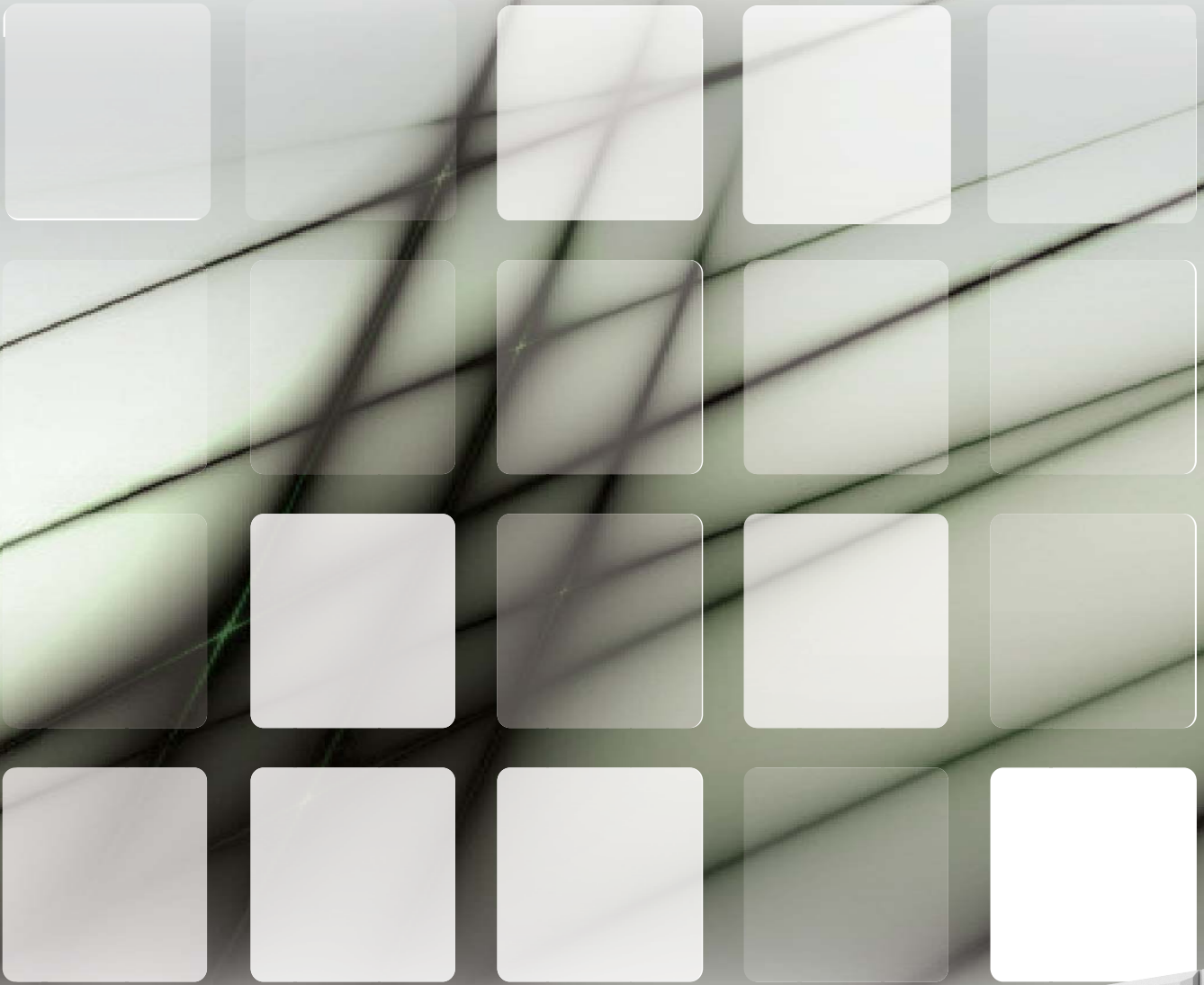


VMEP-G Series Full DC Inverter Technical Manual

380-415V/3/50-60Hz



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Part 1




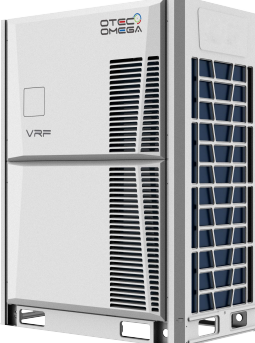


General Information

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1.1 Basic Modules Appearance

Table 1-1.1: Single outdoor unit appearance

<p style="text-align: center;">VMEP008(9,10)N7A</p>	<p style="text-align: center;">VMEP012(14,16)N7A</p>
	
<p style="text-align: center;">VMEP018(20)N7A</p>	<p style="text-align: center;">VMEP022N7A</p>
 <p style="text-align: right;">*2 Fan Blades</p>	 <p style="text-align: right;">*2 Fan Blades</p>
<p style="text-align: center;">VMEP024(26)N7A</p>	<p style="text-align: center;">VMEP028N7A</p>
 <p style="text-align: right;">*2 Fan Blades</p>	 <p style="text-align: right;">*2 Fan Blades</p>

1.2 Product Information

1.2.1 - The system's high efficiency is enabled by several core technologies:

- 1.2.1.1 - The high-efficiency DC inverter compressor has a high-pressure chamber, small suction refrigerant superheat, and high refrigerant volume efficiency due to a large refrigerant discharge buffer volume, low vibration and noise, a neodymium permanent magnet rotor with powerful magnetic force, large torque and high efficiency, and concentrated winding to improve low-frequency efficiency.
- 1.2.1.2 - The use of full DC inverter compressors technology in all outdoor units contributes to higher EER and better heating performance in low ambient temperature.
- 1.2.1.3 - The high efficiency DC fan motor, from a well-known brand, has low noise and high efficiency due to high-density wire winding engineering and being brushless with a built-in sensor.
- 1.2.1.4 - The DC fan motor can be steplessly controlled by the outdoor PCB according to the system's operating pressure, reducing energy consumption, and maintaining the system's best performance.
- 1.2.1.5 - The 180° sine waveform control technology, combined with excellent IPM inverters, reduces the reactive loss of motor-driven and increases motor efficiency by 12%.
- 1.2.1.6 - The CCT inner-grooved copper tube has high thermometric conductivity and inner-grooved fins that break the refrigerant flow boundary layer, enhancing refrigerant disturbance to increase heat-exchanging efficiency.
- 1.2.1.7 - The 2-in-1 refrigerant flow path design increases the liquid refrigerant volume proportion in the condenser outlet, allowing the indoor unit to produce more heat (or cool).
- 1.2.1.8 - The supercooling flow path design separates the refrigerant inlet and outlet, increasing the supercooling degree, reducing the effect of high-temperature inlet gas refrigerant to low-temperature outlet liquid refrigerant, and increasing the system's efficiency.
- 1.2.1.9 - The refrigerant cooling modular board enhances the system's efficiency by cooling the refrigerant.
- 1.2.1.10 - The crossflow fins have low air resistance and great heat transfer coefficient, improved frosting, and well-distributed frost on the heat-exchanger, making it easy for defrosting.
- 1.2.1.11 - The new internal structure, with an optimized pipeline design, reduces pressure drop by 5%, increases EER and COP, and improves performance by increasing evaporating temperature and decreasing compressor work.

1.2.2 - Benefits for users:

- 1.2.2.1 - The system's EER and COP are significantly increased thanks to DC devices (compressor and motor), piping optimization design, and new control logic.
- 1.2.2.2 - The Omega VMEP system offers excellent cooling and heating performance due to the high efficiency DC fan motor, DC compressor, and optimized refrigerant flow control logic, maintaining indoor temperature fluctuation within 0.5 °C for outstanding comfort ability.
- 1.2.2.3 - The system's wide operation range includes a cooling operating temperature of up to 55°C, suitable for hot regions, and a heating operating temperature of down to -30°C, making the VMEP system capable of stably producing heat in the cold winter.
- 1.2.2.4 - The system reduces noise by up to 10dB(A) with features such as a brushless DC motor, streamline air duct design, anti-vibration fan blade, 180° sine waveform control, circuit silencer, low noise compressor, and night-time silent operation.
- 1.2.2.5 - The silent mode and night-time noise control further reduce noise by up to 10dB(A).
- 1.2.2.6 - To prevent the accumulation of snow on the fan blades, the outdoor fan runs intermittently during cold weather. This is important because snow accumulation can freeze and obstruct the fan blades, causing damage to the motor. The anti-snow function is activated only when the temperature drops below 0°C.
- 1.2.2.7 - In a combination system, any outdoor unit can function as the master unit to balance the lifespan of the outdoor units in the system. Additionally, the system has three backup methods: outdoor module, compressor, and fan motor.
- 1.2.2.8 - The intelligent defrosting program is designed to start only, when necessary, unlike conventional units that have fixed defrosting timings and durations. This results in less temperature fluctuation and improves personal comfort.
- 1.2.2.9 - The system is highly flexible and offers 11 types and 68 models of indoor units that are suitable for all types of rooms.

1.2.2.10 - The system is environmentally friendly as it uses R410A (HFC) refrigerant with a low carbon footprint and does not cause harm to the ozone layer.

1.2.2.11 - The optional dust-proof function involves reversing the fan motor's running direction to blow off dust from the heat exchanger.

1.2.2.12 - The system can operate in a power-saving mode during a power shortage to reduce the load on the generator.

1.2.3 Benefits for installers

1.2.3.1 - Four-unit combination, capacity up to 88HP: When a large capacity system is needed, the Omega VMEP system saves money on piping installation.

1.2.3.2 - Adjustable outdoor fan external static pressure: Thanks to the DC fan motor, the external static pressure of the outdoor fan is adjustable. Outdoor units can be installed in the service floor or facility room. The maximum ESP is 110Pa.

1.2.3.3 - New wired controller: Bidirectional communication. Indoor unit's operating parameters (error code, temperature, address) can be inquired and displayed on the controller. Compact design with a 3" screen with white background light, timer function, electrical standard dimensions. The user can check the error code and inquiry unit status easily, safely, and conveniently.

1.2.3.4 - Addressing methods: Two addressing methods are available. The system will distribute addresses to the indoor unit automatically, or the address can be set manually by a wireless remote controller. The addressing method can be selected easily by adjusting the switch on the outdoor PCB. Automatic addressing will reduce artificial faults by 35% and 5% manual works. 54% of system failures were caused by communication faults, and 65% of communication faults were caused by address problems. Most address problems were caused by address setting forgotten, wrong settings, or address repeat.

1.2.3.5 - LED display on the PCB: The LED display on the PCB shows the system's operation status and error codes.

1.2.3.6 - Service window on the front cover: Thanks to the service window, checking the outdoor unit's status and setting is now easy, with no need to remove the front cover.

1.2.3.7 - Mode restriction: Six kinds of mode restriction are available, including Auto priority mode, Cooling (or heating) priority mode, cooling only (or heating only) mode, VIP No.63 address & Automatic priority. The mode restriction function can be selected on the outdoor PCB.

1.2.3.8 - New internal structure: All key components are designed to be close to the outside, making it convenient for repair and replacement. Thanks to the new balance technology, the gas balance pipe no longer exists, and brazing points and leaking risk are decreased.

1.2.3.9 - Oil control technology: Core oil control technology makes the system safe and reliable.

1.2.3.10 - The use of a new application method for the anti-corrosion coating has substantially increased its thickness, and a special coating can be tailored to prevent rusting and deterioration.

1.2.3.11 - Protection from voltage fluctuations: The 3-phase power protector is an optional device that safeguards the outdoor unit from unstable voltage.

1.2.3.12 - Simplified installation process: The outdoor unit's compact size makes it easy to transport to the roof floor using an elevator. In addition, communication wire lengths of up to 1000m can be accommodated, making installation easier.

1.2.3.13 - Utilization of 2-core shielded wire as signal wire to minimize installation cost and reduce manual labor.

1.2.3.14 - The optional electrical lock function can be used to halt the VRF system in the event of non-payment by the end-user, preventing them from restarting the system without authorization.

1.2.3.15 - Simplified commissioning process: The VRF system features a forced cooling/heating button, which simplifies the commissioning process. This eliminates the need to go inside and turn on each indoor unit one by one, as it can be done from the outdoor unit with just one key.

1.2.3.16 - Integration of E-Part Technology: The VMEP incorporates integrated circuit control technology for its E-part, which reduces wiring connections and the number of PCBs required. This enhances operational reliability and reduces the risk of wiring errors.

1.2.3.17 - One optional feature available with VMEP is the auto charging refrigerant function. This involves adding an extra solenoid valve in the gas pipe and allowing the outdoor unit to control the valve to charge the refrigerant automatically.

1.2.3.18 - Refrigerant status detection: Built-in with smart refrigerant auto check function, which can give suggestion about refrigerant status.

1.2.4 Doctor Kit (VMEP Maintenance software)

1.2.4.1 - Easy to use and install: Doctor Kit includes 1 CD software and RS485-USB converter, which makes it easy to install. The software also features graphical interfaces that are user-friendly.

1.2.4.2 - Data monitoring: When connected to Doctor Kit, you can use a computer to inquire about the outdoor unit's operating status and error codes. Additionally, you can monitor the compressors, sensors, and valve operating parameters in real-time.

1.2.4.3 - System operating curve: Doctor Kit allows you to display the system operating parameter curve in real-time. Commissioning results can also be reported.

1.2.4.4 - Troubleshooting: Doctor Kit comes with built-in troubleshooting instructions, so users can follow the instructions to solve problems when errors occur. The instructions can also be printed and taken to the site for step-by-step troubleshooting.

1.2.4.5 - Automatic Data Backup: All operating data is automatically saved on the hard disk, and data files can be easily exported using the software. In case of system failure, users can send the data file to Omega, and Omega's engineers will guide them to solve the problem.

1.2.4.6 - Useful tools: Doctor Kit also features useful tools such as a refrigerant charge volume calculator based on the liquid pipe diameter and length, and the ability to monitor discharge pressure when charging refrigerant. The charge volume can also be saved for future reference.

Part 2

Outdoor units

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2.1 - Specifications

2.1.1 Outdoor unit (VMEP008N7A, VMEP009N7A, VMEP010N7A)

Model name			VMEP008N7A-G13V252	VMEP009N7A-G16V280	VMEP010N7A-G19V335	
Performance data			380~415V-3N-50/60Hz	380~415V-3N-50/60Hz	380~415V-3N-50/60Hz	
Cooling	Capacity	HP	8HP	10HP	12HP	
		kW	25.2	28	33.5	
		Btu/h	86000	95500	114000	
		RT	7.2	8	9.5	
	Power input	kW	5.86	6.79	9.18	
	EER	W/W	4.3	4.12	3.65	
Rated. input consumption		kW	13.90	13.90	14.10	
Rated. current		A	24.0	24.0	24.5	
Capacity adjustment range			50%~130%	50%~130%	50%~130%	
Compressor data						
DC Inverter compressor	Quantity		1	1	1	
	Type		DC /Twin-rotary	DC /Twin-rotary	DC /Twin-rotary	
	Brand		Mitsubishi	Mitsubishi	Mitsubishi	
	frequency range		Hz	20~102	20~106	20~108
Compressor oil	Model		FV50S	FV50S	FV50S	
	Original oil volume		ml	2300	2300	
	Additional oil volume		ml	2500	2500	
Fan data						
Fan motor	Type		DC	DC	DC	
	Model		DR-310-750-8-1	DR-310-750-8-1	DR-310-750-8-1	
	Quantity		1	1	1	
	Insulation class		B	B	B	
	Protection class		IP44	IP44	IP44	
	Power output		W	750	750	750
Fan blade	Material		ASG20	ASG20	ASG20	
	Type		axial-flow	axial-flow	axial-flow	
	Drive		Direct-driven	Direct-driven	Direct-driven	
	Fan Quantity		1	1	1	
	Air flow		m ³ /h	10500	10500	11000
Physical data						
Outdoor coil	Fin type		hydrophilic	hydrophilic	hydrophilic	
	Tube outside diameter		mm	7.94	7.94	7.94
	Tube type			Inner-grooved	Inner-grooved	Inner-grooved
Refrigerant	Type		R410a	R410a	R410a	
	Volume		kg	10	10	10
Dimension (D*H*W)	Net		mm	840*1740*990	840*1740*990	840*1740*990
	Packing		mm	910*1900*1060	910*1900*1060	910*1900*1060
Weight	Net		kg	210	210	210
	Gross		kg	220	220	220
Outdoor sound level		dB(A)	58	58	58	
Maximum operating pressure		MPa	4.5	4.5	4.5	
Piping & wiring data						
Pipe size	Liquid pipe		mm	Ø12.7	Ø12.7	Ø12.7
	Gas pipe		mm	Ø22.2	Ø22.2	Ø22.2
Max. pipe length	Total pipe length		m	1000	1000	1000
	From OU to farthest IU(Actual length)		m	190	200	200
	From OU to farthest IU(Equivalent length)		m	220	240	240
	From 1st indoor distributor to farthest IU		m	90	90	90
Max. vertical length	Between OU & IU(OU above IU)		m	90	100	100
	Between OU & IU(OU below IU)		m	110	110	110
	Between IUs		m	30	40	40
	Between OUs		m	0	0	0
Connection wire	Power wire size		mm ²	6*4+6(L≤20m) 10*4+6(20m<L≤50m)	6*4+6(L≤20m) 10*4+6(20m<L≤50m)	6*4+6(L≤20m) 10*4+10(20m<L≤50m)
	Signal wire type			2-core shielded cable	2-core shielded cable	2-core shielded cable
	Signal wire size		mm ²	0.75	0.75	0.75
	Operation temperature range					
Cooling	Outdoor side		°C	-15~55	-15~55	-15~55
	Indoor side		°C	16~32	16~32	16~32

Notes:

The cooling conditions: indoor temp.: 27°C DB (80.6°F), 19°C WB (60°F) outdoor temp.: 35°C DB (95°F) equivalent pipe length: 5m drop length: 0m.

The heating conditions: indoor temp.: 20°C DB (68°F), 15°C WB (44.6°F) outdoor temp.: 7°C DB (42.8°F) equivalent pipe length: 5m drop length: 0m.

Sound level: Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.3 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Maximum 85Pa outdoor ESP can be set on outdoor PCB.

he above data may be changed without notice for future improvement on quality and performance.

2.1.1 Outdoor unit (VMEP012N7A, VMEP014N7A, VMEP016N7A)

Model name			VMEP012N7A-G23V400	VMEP014N7A-G26V450	VMEP016N7A-G29V500
Performance data			380~415V-3N-50/60Hz	380~415V-3N-50/60Hz	380~415V-3N-50/60Hz
Cooling	Capacity	HP	14HP	16HP	18HP
		kW	40.0	45	50.0
		Btu/h	136500	153500	170600
		RT	11.4	13	14.2
	Power input	kW	10.50	12.20	15.10
	EER	W/W	3.8	3.68	3.31
Rated. input consumption		kW	17.96	17.96	18.34
Rated. current		A	30.2	30.2	31.0
Capacity adjustment range			50%~130%	50%~130%	50%~130%
Compressor data					
DC Inverter compressor	Quantity		1	1	1
	Type		DC /Twin-rotary	DC /Twin-rotary	DC /Twin-rotary
	Brand		Mitsubishi	Mitsubishi	Mitsubishi
	frequency range	Hz	20~106	20~108	20~110
Compressor oil	Model		FV50S	FV50S	FV50S
	Original oil volume	ml	2300	2300	2300
	Additional oil volume	ml	4500	4500	4500
Fan data					
Fan motor	Type		DC	DC	DC
	Model		DR-310-920-8	DR-310-920-8	DR-310-920-8
	Quantity		1	1	1
	Insulation class		B	B	B
	Protection class		IP44	IP44	IP44
	Power output	W	920	920	920
Fan blade	Material		ASG20	ASG20	ASG20
	Type		axial-flow	axial-flow	axial-flow
	Drive		Direct-driven	Direct-driven	Direct-driven
	Fan Quantity		1	1	1
	Air flow	m ³ /h	13500	13500	13500
Physical data					
Outdoor coil	Fin type		hydrophilic	hydrophilic	hydrophilic
	Tube outside diameter	mm	7.94	7.94	7.94
	Tube type		Inner-grooved	Inner-grooved	Inner-grooved
Refrigerant	Type		R410a	R410a	R410a
	Volume	kg	13	13	13
Dimension (D*H*W)	Net	mm	840*1740*1340	840*1740*1340	840*1740*1340
	Packing	mm	910*1900*1410	910*1900*1410	910*1900*1410
Weight	Net	kg	260	260	260
	Gross	kg	278	278	278
Outdoor sound level		dB(A)	60	61	62
Maximum operating pressure		MPa	4.5	4.5	4.5
Piping & wiring data					
Pipe size	Liquid pipe	mm	Ø15.9	Ø15.9	Ø15.9
	Gas pipe	mm	Ø28.6	Ø28.6	Ø28.6
Max. pipe length	Total pipe length		1000	1000	1000
	From OU to farthest IU(Actual length)		200	200	200
	From OU to farthest IU(Equivalent length)		240	240	240
	From 1st indoor distributor to farthest IU		90	90	90
Max. vertical length	Between OU & IU(OU above IU)		100	100	100
	Between OU & IU(OU above IU)		110	110	110
	Between IUs		40	40	40
	Between OUs		0	0	0
Connection wire	Power wire size	mm ²	10*5(L≤20m)	10*5(L≤20m)	16*5(L≤20m)
			16*4+10(20m<L≤50m)	16*4+10(20m<L≤50m)	16*4+10(20m<L≤50m)
	Signal wire type		2-core shielded cable	2-core shielded cable	2-core shielded cable
	Signal wire size	mm ²	0.75	0.75	0.75
Operation temperature range					
Cooling	Outdoor side	°C	-15~55	-15~55	-15~55
	Indoor side	°C	16~32	16~32	16~32

Notes:

The cooling conditions: indoor temp.: 27°C DB (80.6°F), 19°C WB (60°F) outdoor temp.: 35°C DB (95°F) equivalent pipe length: 5m drop length: 0m.

The heating conditions: indoor temp.: 20°C DB (68°F), 15°C WB (44.6°F) outdoor temp.: 7°C DB (42.8°F) equivalent pipe length: 5m drop length: 0m.

Sound level: Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.3 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Maximum 85Pa outdoor ESP can be set on outdoor PCB.

The above data may be changed without notice for future improvement on quality and performance.

2.1.1 Outdoor unit (VMEP018N7A, VMEP020N7A, VMEP022N7A)

Model name			VMEP018N7A- G33V560	VMEP020N7A- G36V615	VMEP022N7A- G39V670	
Performance data			380~415V-3N-50/60Hz	380~415V-3N-50/60Hz	380~415V-3N-50/60Hz	
Cooling	Capacity	HP	20HP	22HP	24HP	
		kW	56.0	62	67.0	
		Btu/h	191000	209800	228600	
		RT	16.0	18	19.1	
	Power input	kW	17.60	20.36	22.34	
	EER	W/W	3.2	3.02	3.00	
Rated. input consumption		kW	25.90	27.80	29.50	
Rated. current		A	46.6	47.5	51.0	
Capacity adjustment range			50%~130%	50%~130%	50%~130%	
Compressor data						
DC Inverter compressor	Quantity		2	2	2	
	Type		DC /Twin-rotary	DC /Twin-rotary	DC /Twin-rotary	
	Brand		Mitsubishi	Mitsubishi	Mitsubishi	
	frequency range		Hz	20~106	20~110	20~110
Compressor oil	Model		FV50S	FV50S	FV50S	
	Original oil volume		ml	2300*2	2300*2	2300*2
	Additional oil volume		ml	4000	4000	4000
Fan data						
Fan motor	Type		DC	DC	DC	
	Model		DR-310-560-8-1	DR-310-560-8-1	DR-310-560-8-1	
	Quantity		2	2	2	
	Insulation class		B	B	B	
	Protection class		IP44	IP44	IP44	
	Power output		W	560	560	560
Fan blade	Material		ASG20	ASG20	ASG20	
	Type		axial-flow	axial-flow	axial-flow	
	Drive		Direct-driven	Direct-driven	Direct-driven	
	Fan Quantity		2	2	2	
	Air flow		ms/h	16500	16500	16500
Physical data						
Outdoor coil	Fin type		hydrophilic	hydrophilic	hydrophilic	
	Tube outside diameter		mm	7.94	7.94	7.94
	Tube type			Inner-grooved	Inner-grooved	inner grooved
Refrigerant	Type		R410a	R410a	R410a	
	Volume		kg	17	17	18
Dimension (D*H*W)	Net		mm	840*1740*1340	840*1740*1340	840*1740*1340
	Packing		mm	910*1900*1410	910*1900*1410	910*1900*1410
Weight	Net		kg	298	298	306
	Gross		kg	316	316	324
Outdoor sound level		dB(A)	63	63	65	
Maximum operating pressure		MPa	4.5	4.5	4.5	
Piping & wiring data						
Pipe size	Liquid pipe		mm	Ø15.9	Ø15.9	Ø15.9
	Gas pipe		mm	Ø28.6	Ø28.6	Ø28.6
Max. pipe length	Total pipe length		m	1000	1000	1000
	From OU to farthest IU(Actual length)		m	200	200	200
	From OU to farthest IU(Equivalent length)		m	240	240	240
	From 1st indoor distributor to farthest IU		m	90	90	90
Max. vertical length	Between OU & IU(OU above IU)		m	100	100	100
	Between OU & IU(OU below IU)		m	110	110	110
	Between IUs		m	40	40	40
	Between OUs		m	0	0	0
Connection wire	Power wire size		mm ²	16*5(L≤20m) 25*4+16(20m<L≤50m)	16*5(L≤20m) 25*4+16(20m<L≤50m)	16*5(L≤20m) 25*4+16(20m<L≤50m)
	Signal wire type			2-core shielded cable	2-core shielded cable	2-core shielded cable
	Signal wire size		mm ²	0.75	0.75	0.75
Operation temperature range						
Cooling	Outdoor side		°C	-15~55	-15~55	-15~55
	Indoor side		°C	16~32	16~32	16~32

Notes:

The cooling conditions: indoor temp.: 27°C DB (80.6°F), 19°C WB (60°F) outdoor temp.: 35°C DB (95°F) equivalent pipe length: 5m drop length: 0m.

The heating conditions: indoor temp.: 20°C DB (68°F), 15°C WB (44.6°F) outdoor temp.: 7°C DB (42.8°F) equivalent pipe length: 5m drop length: 0m.

Sound level: Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.3 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Maximum 85Pa outdoor ESP can be set on outdoor PCB.

The above data may be changed without notice for future improvement on quality and performance.

2.1.1 Outdoor unit (VMEP024N7A, VMEP026N7A, VMEP028N7A)

Model name			VMEP024N7A- G43V730	VMEP026N7A- G46V785	VMEP028N7A- G50V850
Performance data			380~415V-3N-50/60Hz	380~415V-3N-50/60Hz	380~415V-3N-50/60Hz
Cooling	Capacity	HP	26HP	28HP	30HP
		kW	73.0	79	85.0
		Btu/h	249100	267800	290000
		RT	20.8	22	24.2
	Power input	kW	23.50	26.30	29.80
	EER	W/W	3.1	2.98	2.85
Rated. input consumption		kW	32.00	32.00	36.50
Rated. current		A	53.0	53.0	63.0
Capacity adjustment range			50%~130%	50%~130%	50%~130%
Compressor data					
DC Inverter compressor	Quantity		2	2	2
	Type		DC /Twin-rotary	DC /Twin-rotary	DC /Twin-rotary
	Brand		Mitsubishi	Mitsubishi	Mitsubishi
	frequency range	Hz	20~110	20~110	20~110
Compressor oil	Model		FV50S	FV50S	FV50S
	Original oil volume	ml	2300*2	2300*2	2300*2
	Additional oil volume	ml	6000	6000	7000
Fan data					
Fan motor	Type		DC	DC	DC
	Model		DR-310-750-8-1	DR-310-750-8-1	DR-310-920
	Quantity		2	2	2
	Insulation class		B	B	B
	Protection class		IP44	IP44	IP44
	Power output	W	750	750	920
Fan blade	Material		ASG20	ASG20	ASG20
	Type		axial-flow	axial-flow	axial-flow
	Drive		Direct-driven	Direct-driven	Direct-driven
	Fan Quantity		2	2	2
	Air flow	m ³ /h	24000	24000	26000
Physical data					
Outdoor coil	Fin type		hydrophilic	hydrophilic	hydrophilic
	Tube outside diameter	mm	7.94	7.94	7.94
	Tube type		inner grooved	inner grooved	inner grooved
Refrigerant	Type		R410a	R410a	R410a
	Volume	kg	20	20	25
Dimension (D*H*W)	Net	mm	840*1740*1990	840*1740*1990	840*1740*1990
	Packing	mm	910*1900*2060	910*1900*2060	910*1900*2060
Weight	Net	kg	358	358	410
	Gross	kg	376	376	428
Outdoor sound level		dB(A)	66	66	67
Maximum operating pressure		MPa	4.5	4.5	4.5
Piping & wiring data					
Pipe size	Liquid pipe	mm	Ø15.9	Ø15.9	Ø22.2
	Gas pipe	mm	Ø28.6	Ø28.6	Ø35
Max. pipe length	Total pipe length	m	1000	1000	1000
	From OU to farthest IU(Actual length)	m	200	200	200
	From OU to farthest IU(Equivalent length)	m	240	240	240
	From 1st indoor distributor to farthest IU	m	90	90	90
Max. vertical length	Between OU & IU(OU above IU)	m	100	100	100
	Between OU & IU(OU below IU)	m	110	110	110
	Between IUs	m	40	40	40
	Between OUs	m	0	0	0
Connection wire	Power wire size	mm ²	16*5(L≤20m)	16*5(L≤20m)	25*5(L≤20m)
			25*4+16(20m<L≤50m)	25*4+16(20m<L≤50m)	25*4+25(20m<L≤50m)
	Signal wire type		2-core shielded cable	2-core shielded cable	2-core shielded cable
	Signal wire size	mm ²	0.75	0.75	0.75
Operation temperature range					
Cooling	Outdoor side	°C	-15~55	-15~55	-15~55
	Indoor side	°C	16~32	16~32	16~32

Notes:

The cooling conditions: indoor temp.: 27°C DB (80.6°F), 19°C WB (60°F) outdoor temp.: 35°C DB (95°F) equivalent pipe length: 5m drop length: 0m.

The heating conditions: indoor temp.: 20°C DB (68°F), 15°C WB (44.6°F) outdoor temp.: 7°C DB (42.8°F) equivalent pipe length: 5m drop length: 0m.

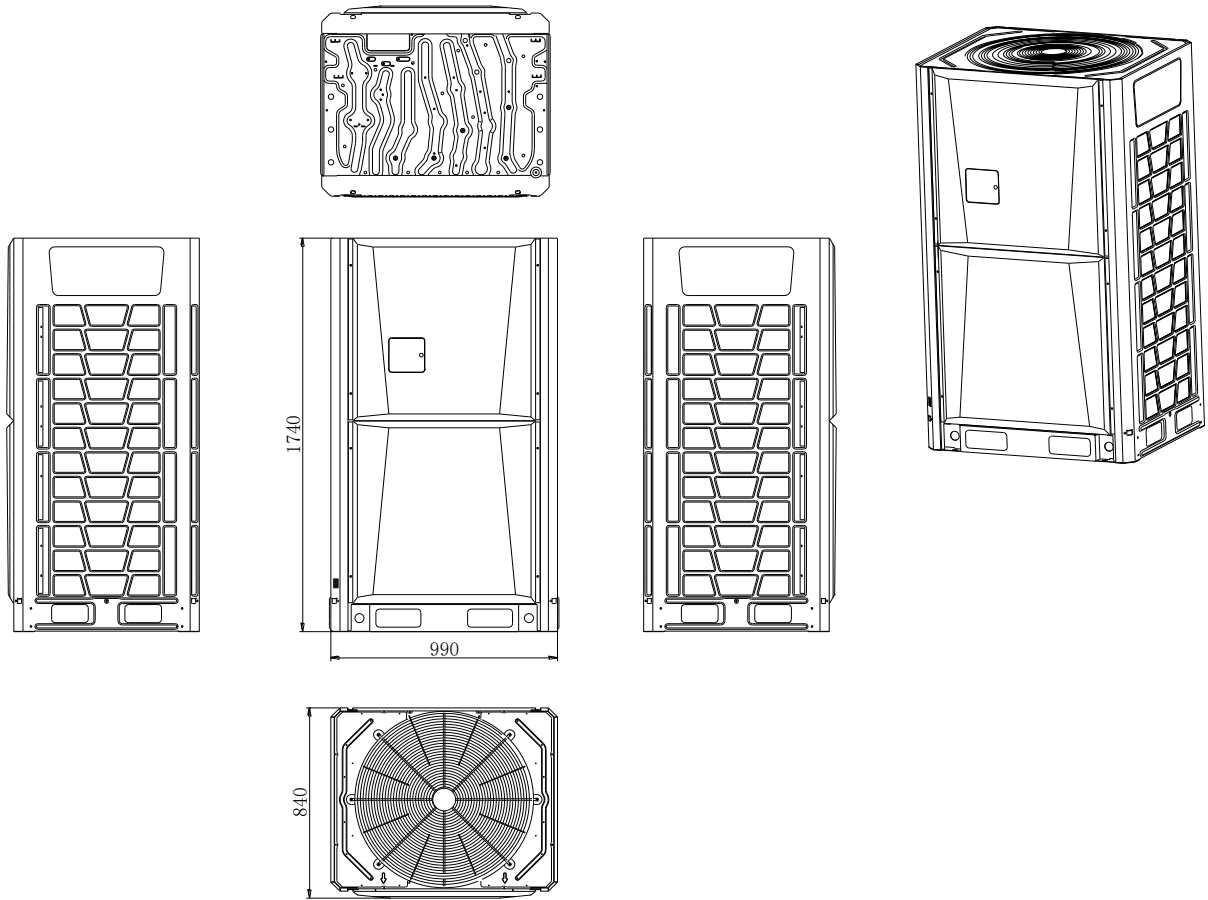
Sound level: Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.3 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Maximum 85Pa outdoor ESP can be set on outdoor PCB.

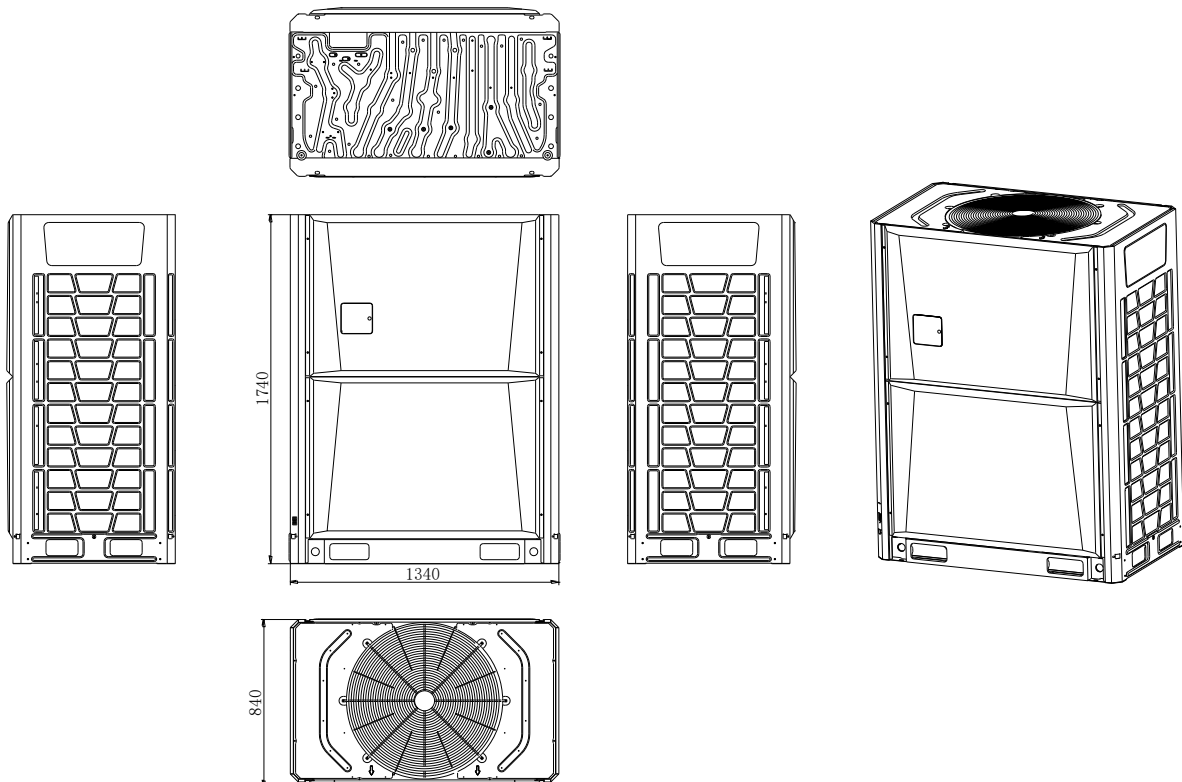
The above data may be changed without notice for future improvement on quality and performance.

2.2 - Dimensions

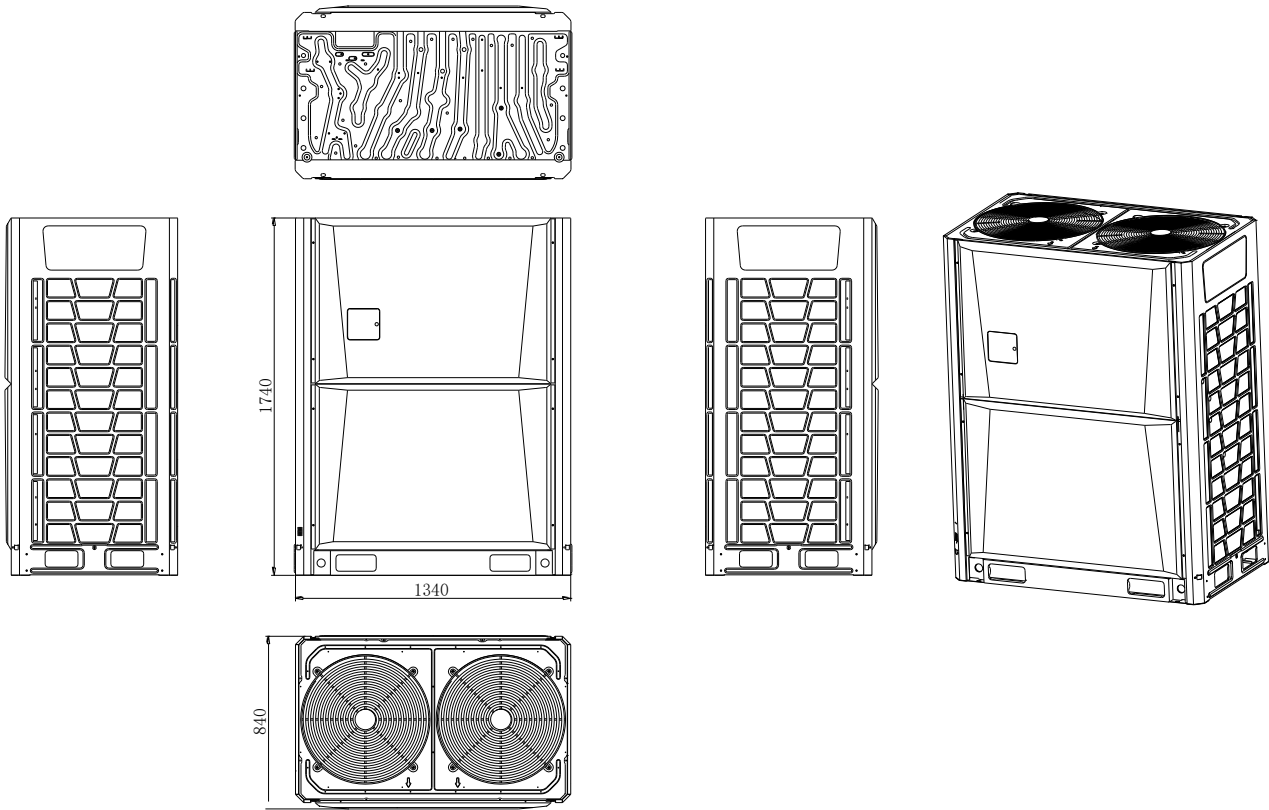
Models from: VMEP008(009,010)N7A



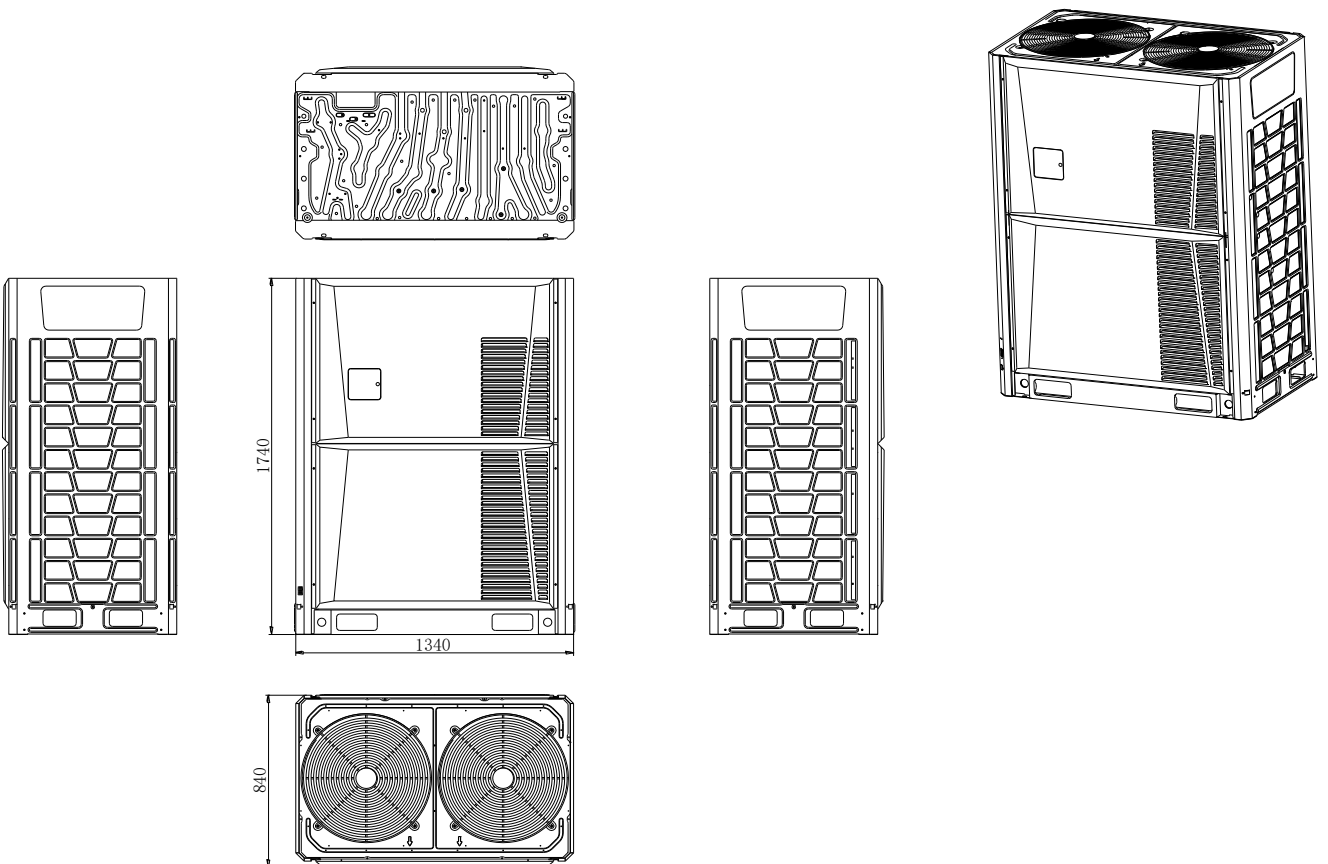
Models from: VMEP012(014,016)N7A



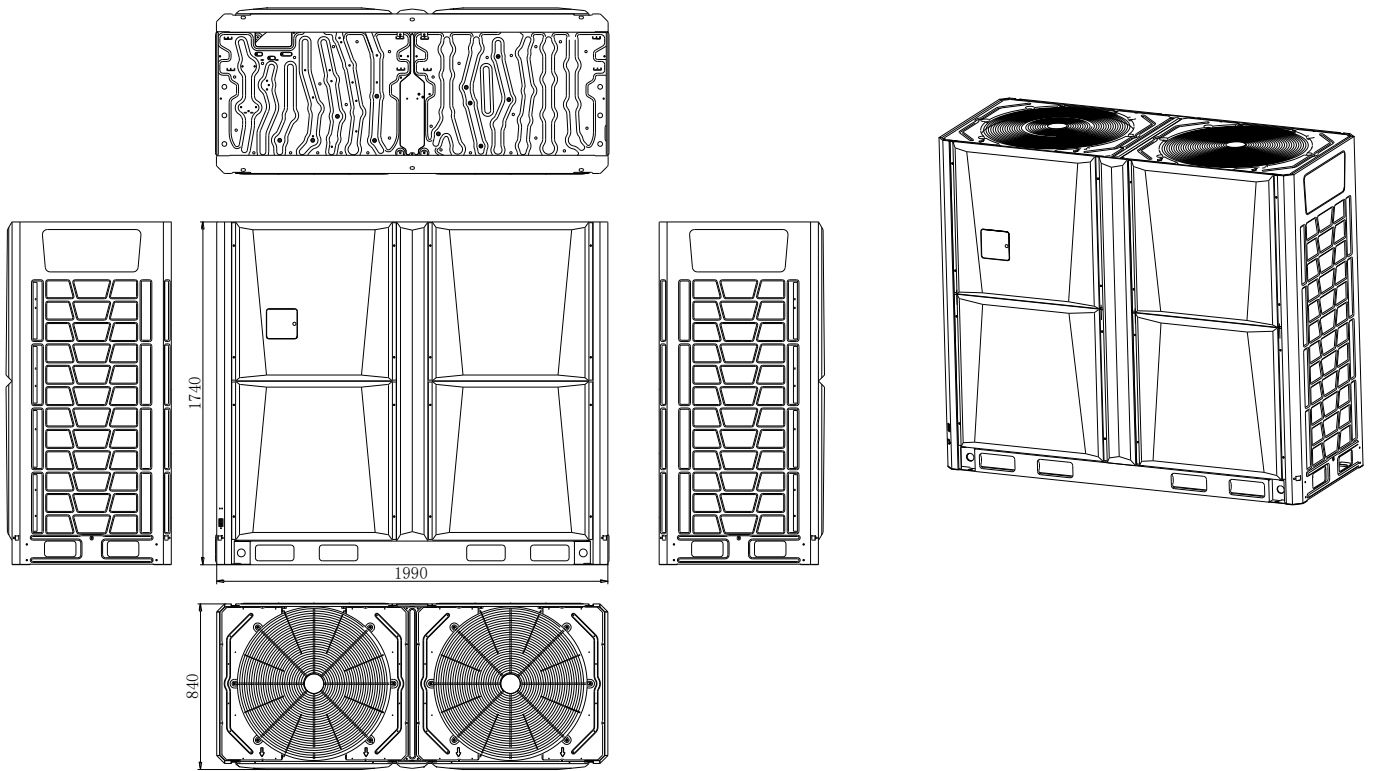
Models from: VMEP018(020)N7A



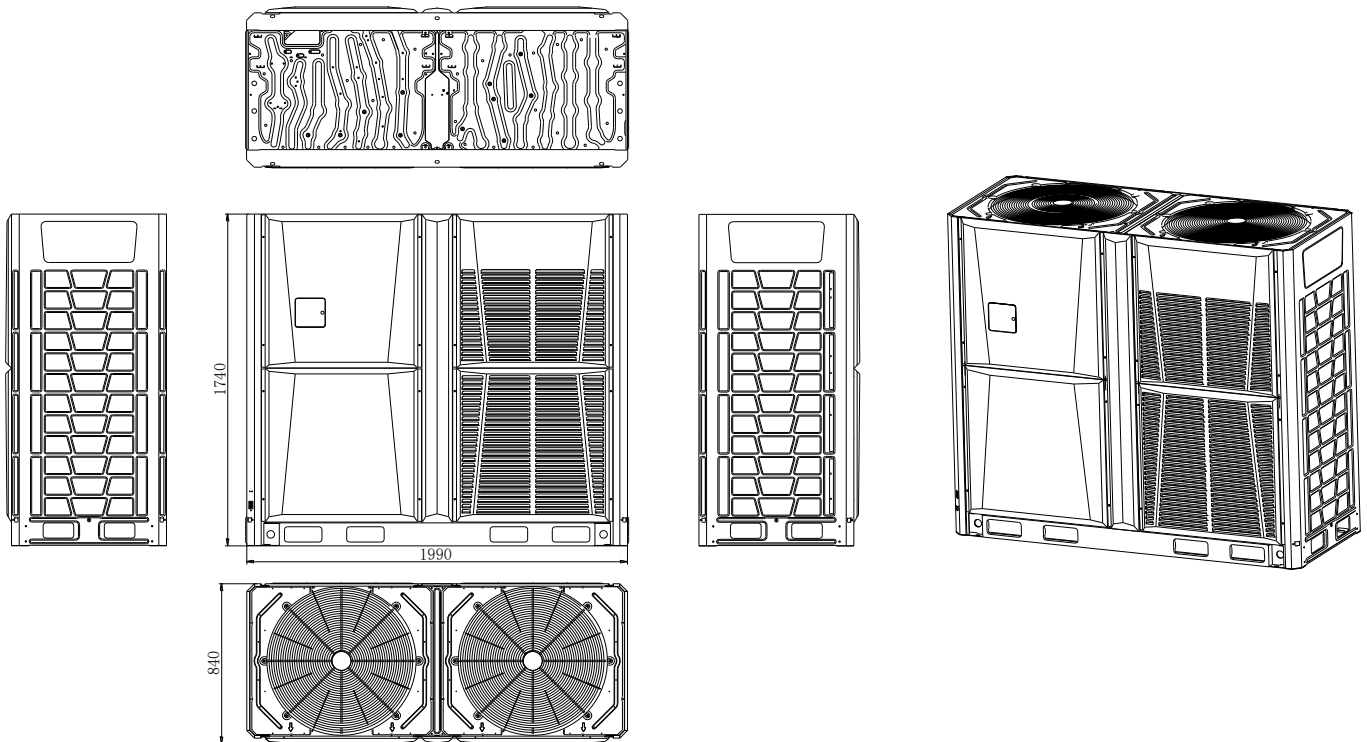
Models from: VMEP022N7A



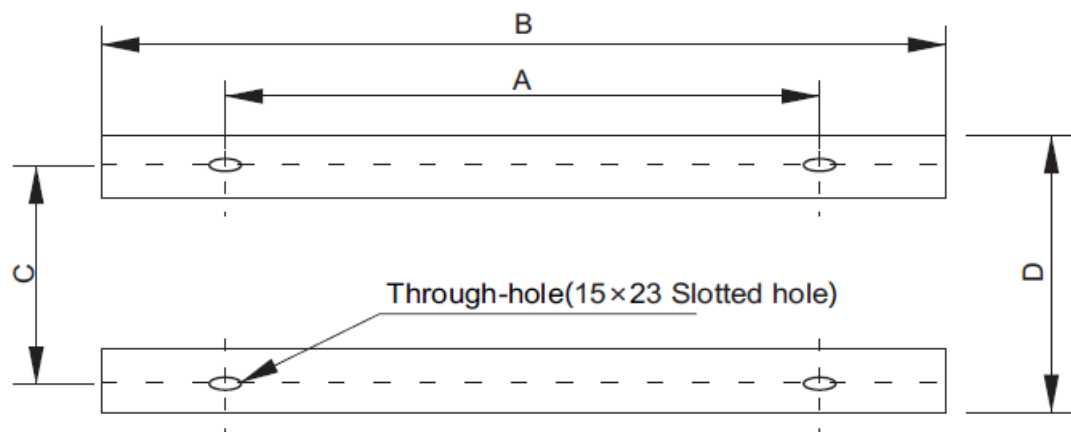
Models from: VMEP024(026)N7A



Models from: VMEP028N7A

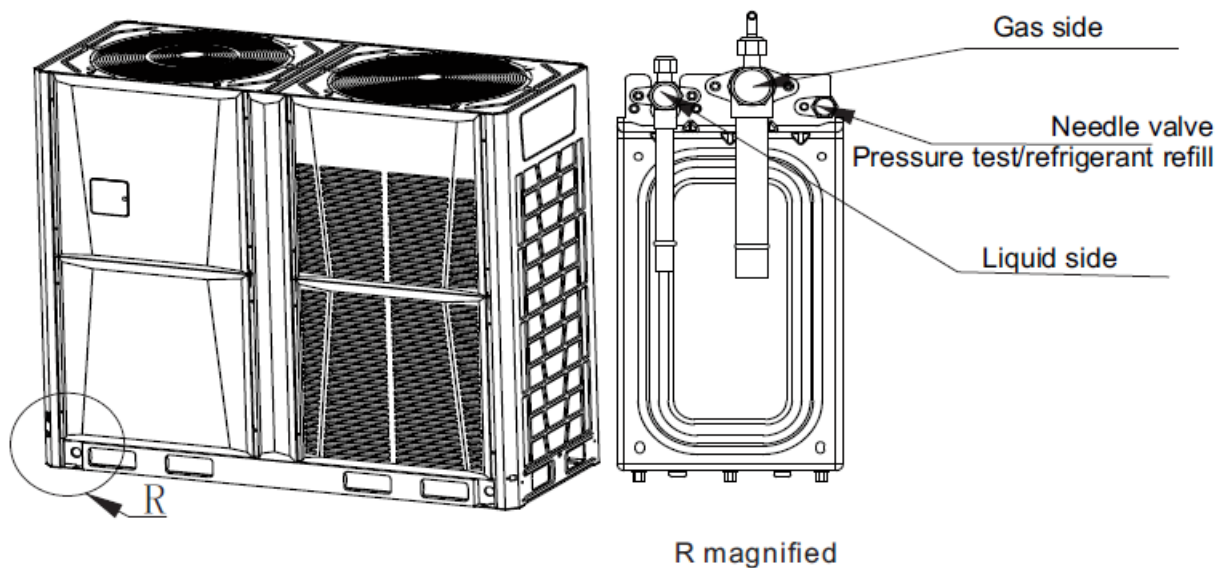


2.2.1 Installation base dimension



Size \ Type	8HP ~ 12HP	14HP ~ 24HP	26HP ~ 30HP
A	720mm	1070mm	1720mm
B	1040mm	1390mm	2060mm
C	774mm	774mm	774mm
D	850mm	850mm	850mm

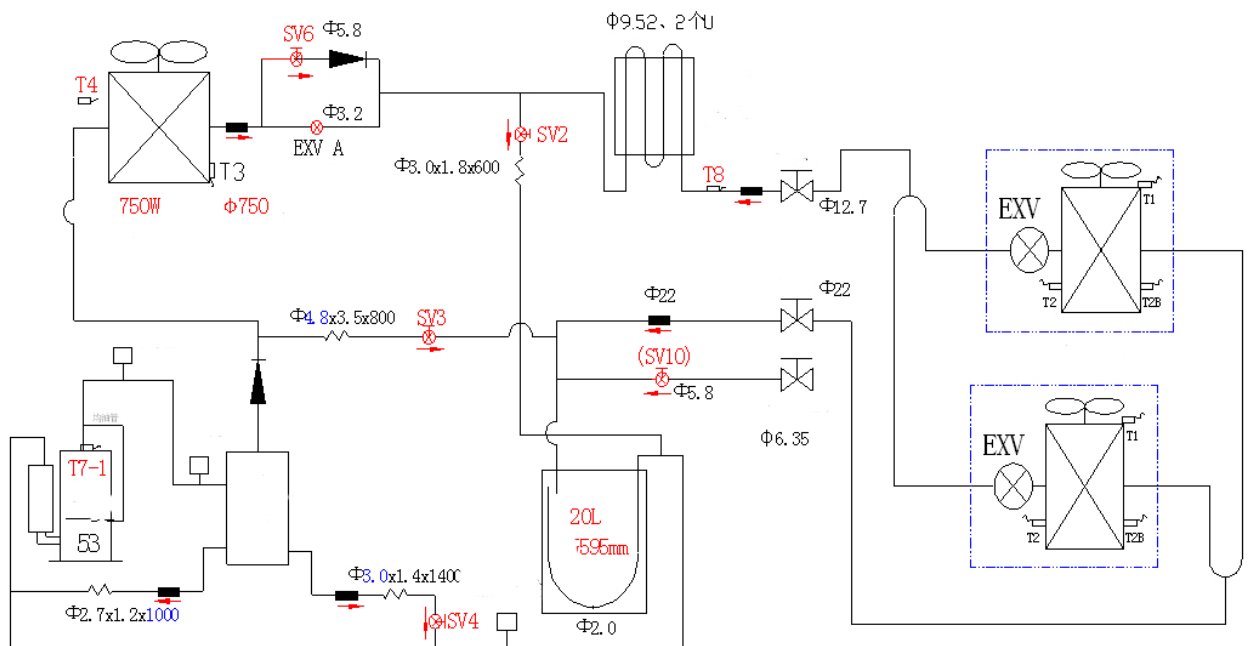
2.2.2 Valve explanation



2.3 Outdoor refrigerant circuit diagram

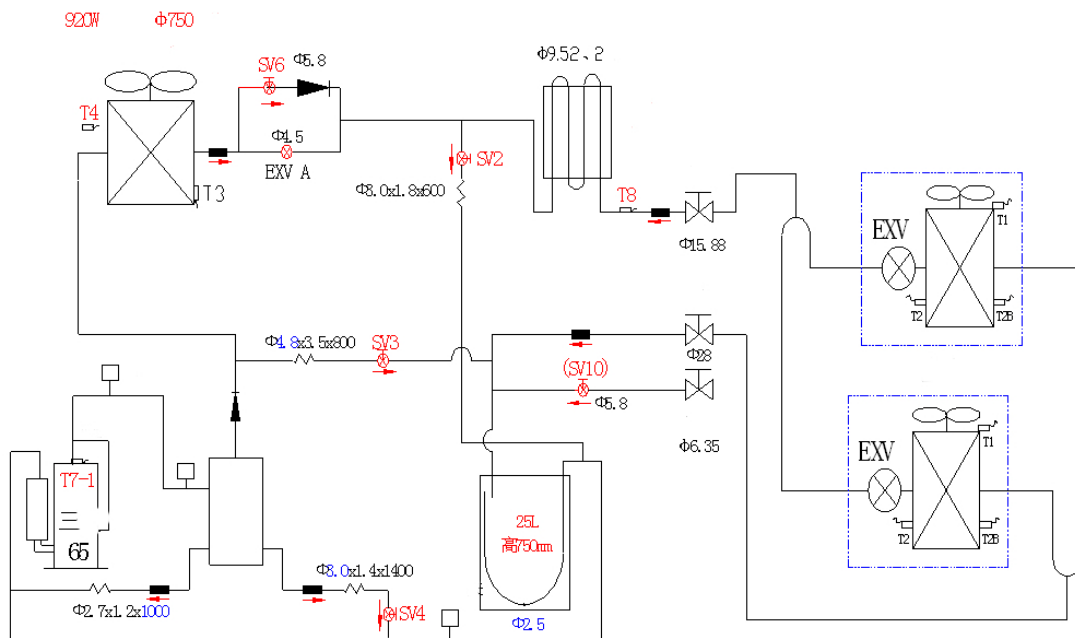
2.3.1 Outdoor unit (VMEP008N7A, VMEP009N7A, VMEP010N7A)

8-12



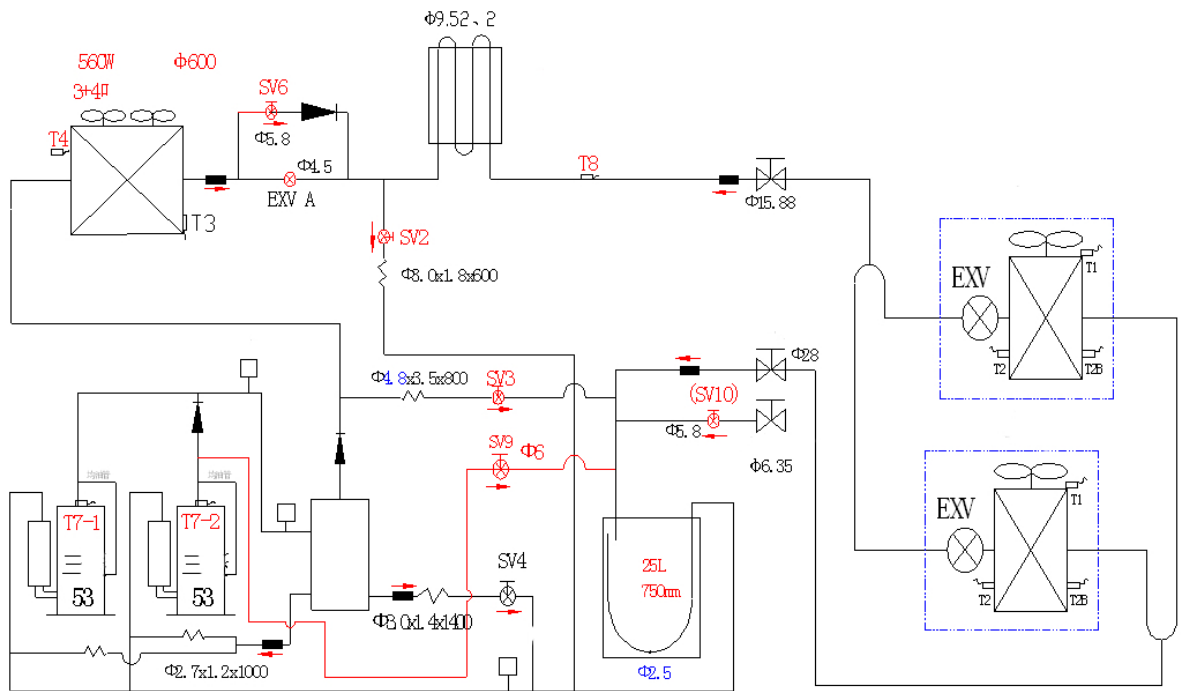
2.3.2 Outdoor unit (VMEP012N7A, VMEP014N7A, VMEP016N7A)

14-18



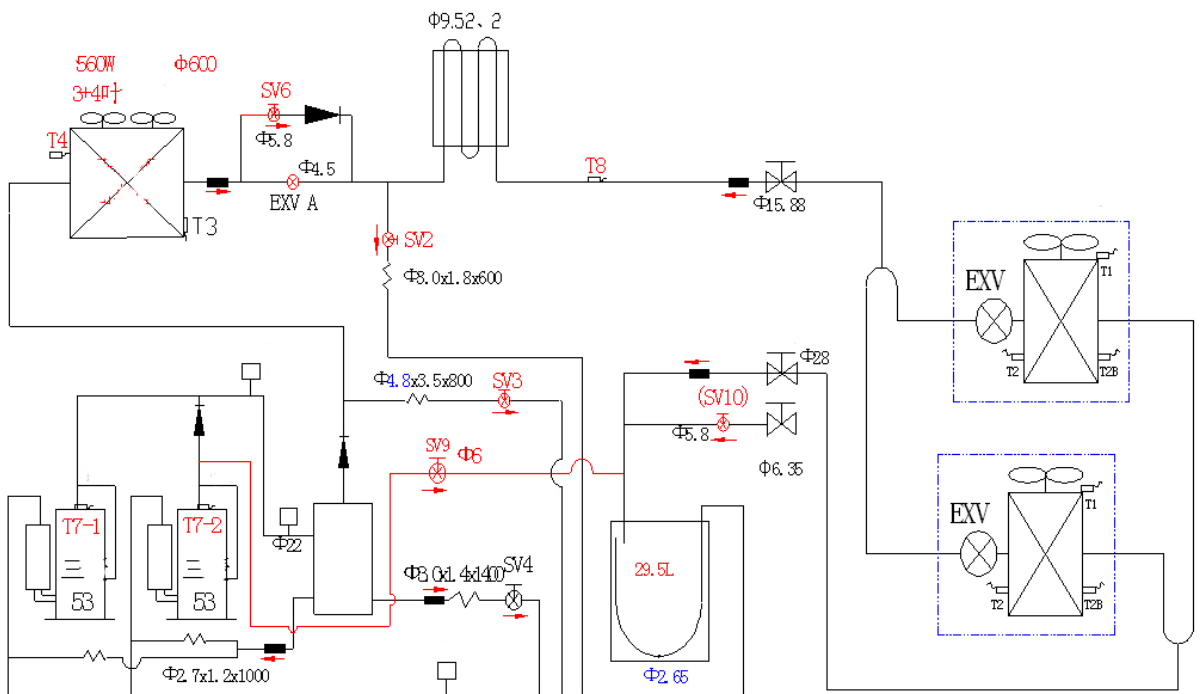
2.3.3 Outdoor unit (VMEP018N7A, VMEP020N7A)

20-22

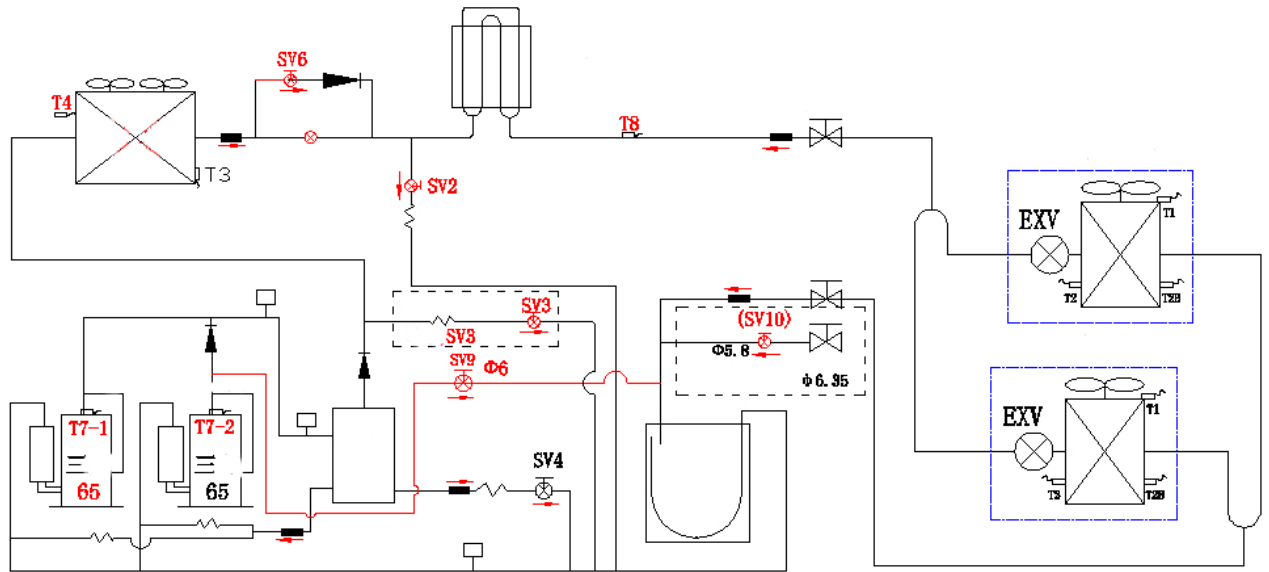


2.3.4 Outdoor unit (VMEP022N7A)

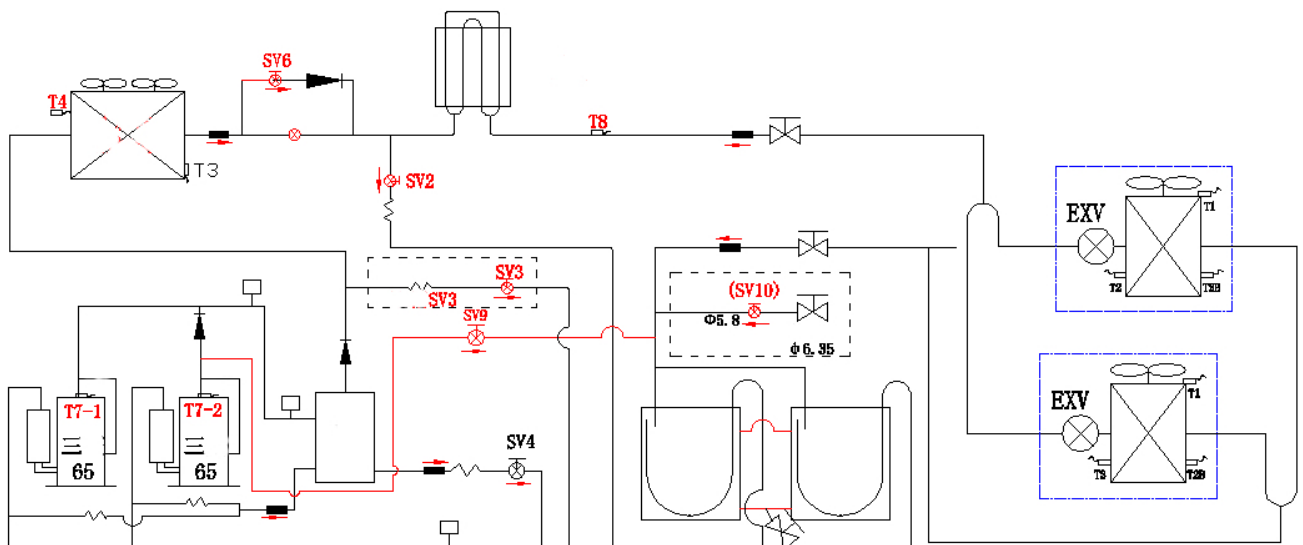
24



2.3.5 Outdoor unit (VMEP024N7A, VMEP026N7A)



2.3.6 Outdoor unit (VMEP028N7A)



2.3.7 Key parts

2.3.7.1 - Oil Separator: This device is utilized to separate oil from high pressure and temperature gas refrigerant that is discharged from the compressor.

2.3.7.2 - Gas-Liquid Separator: This equipment is designed to store the liquid refrigerant and oil, ensuring that the compressor is safeguarded from liquid hammer.

2.3.7.3 - Four-Way Valve (ST): During cooling mode, this valve closes, while it opens in heating mode.

2.3.7.4 - EXV (Electronic Expansion Valve):

a) The maximum open degree is 480 pulses.

b) Usually, when the system is electrified, the EXV first closes at 700 pulses, then opens to 350 pulses, and goes into standby mode. When the unit starts, it opens to the correct pulse.

c) If the running outdoor unit receives an OFF signal, the EXV of the auxiliary unit will stop while the main unit continues to operate, and the auxiliary unit will stop at the same time. When all outdoor units are stopped, the EXV first closes and then opens to the stand-by pulse.

d) One EXV is available for 8HP/10HP/12HP/14HP/16HP/18HP/20HP/22HP unit.

2.3.7.5 - SV4:

a) This is the oil return valve.

b) It opens 5 minutes after the DC inverter compressor has been running, and then closes after 15 minutes (for systems with only one outdoor unit).

c) Every 20 minutes, SV4 of each outdoor unit opens for 3 minutes (for systems with more than one outdoor unit).

2.3.7.6 - SV5:

a) This valve is utilized for defrosting.

b) In defrosting mode, the opening of SV5 can cut off the refrigerant flow, reducing the time required for defrosting.

c) It is always off in cooling mode.

2.3.7.7- SV6:

a) This is a by-pass valve.

b) It closes when the unit is in standby mode, and the system is running in heating mode.

c) It opens when the discharge temperature is excessively high in cooling mode and closes when the unit is in standby mode or the system is running in heating mode.

2.3.7.8 - SV10:

a) This is an auto-charge valve.

b) This valve is customized when the function is required.

2.3.7.9 - Hi Pressure Sensor: This sensor is utilized to detect the discharge pressure of the compressor and control the DC fan speed.

2.3.8 Key functions

2.3.8.1 Oil Return Program:

- a) The oil return program will run for 140 minutes after system start-up. After that, the program will run every 8 hours during continuous operation.
- b) The program will last for 3 minutes.
- c) During the program, all outdoor EXVs will open to 480 pulses, and SV6 will be on.
- d) The action of the indoor fan and EXV will be carried out.

		Running indoor unit	Stop or standby indoor unit	Fan only indoor unit
Cooling mode	EXV	Keep degree unchanged	300 pulse	300pulse
	Fan	Keep on	Keep off	Keep on
Heating mode	EXV	Keep degree unchanged	480 pulse	/
	Fan	Anti-cold wind	Keep off	/

2.3.8.2 All Outdoor Units Cycle Operation:

- a) This operation is intended to balance the lifespan among outdoor units in a single system.
- b) In cooling mode, outdoor units will change the start order when the room temperature reaches the set point or after the oil return program.
- c) In heating mode, outdoor units will change the start order when the room temperature reaches the set point, after the oil return program, or after the defrost program.

2.3.8.3 Forced Cooling Program:

- a) After pressing the button once, all indoor and outdoor units will start cooling, regardless of their current mode or whether they are on or off.
- b) The forced cooling function is only available for the master unit.
- c) During the forced cooling mode:
 - i. All indoor EXVs will open to 300 pulses.
 - ii. All indoor fans will be set to high speed.
 - iii. All compressors will be on.
 - iv. All outdoor fan motors will be on.
 - v. Outdoor EXVs will open to 480 pulses.
 - vi. SV6 will be on.
- d) When the program starts, all the compressors will be on and the indoor fan will be running at high speed.
- e) The program will end after 1 hour or when the button is pressed again.

2.3.8.4 Defrost Program:

- a) When the condenser temperature (T3) of any module is less than 0 °C for 40 minutes, that outdoor unit sends a defrost order to the master unit.
- b) Before defrost, the current EXV opening pulses will be saved and recovered when the defrost program ends.
- c) During defrosting:
 - i. All indoor EXVs will open to 480 pulses.
 - ii. All indoor fans will be off.
 - iii. All compressors will be on.
 - iv. All outdoor fan motors will be off.
 - v. Outdoor EXVs will open to 480 pulses.
 - vi. SV6 will be on.

- d) The program will end in the following conditions:
- i. The defrosting time is up to 10 minutes.
 - ii. The condenser temperature (T3) of all modules is ≥ 15 °C.
 - iii. The system stops or switches to non-heating mode.

e) After defrost:

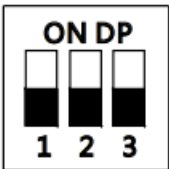
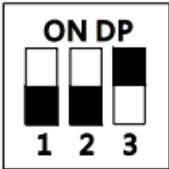
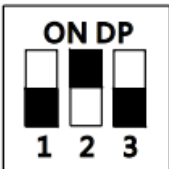
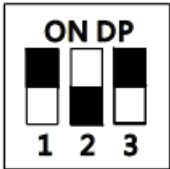
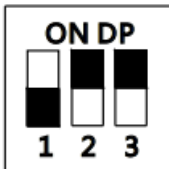
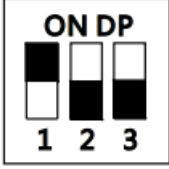
- i. All indoor units' EXVs will return to their former pulse.
- ii. All indoor fans will return to normal control.
- iii. All compressors will return to normal control.
- iv. All outdoor fan motors will return to normal control.
- v. Outdoor EXVs will return to normal control.
- vi. SV6 will be off.

f) Low pressure protection is not available during defrost and 10 minutes after defrosting.

2.3.8.5 Mode Confliktion:

a) There are 6 types of mode restriction:

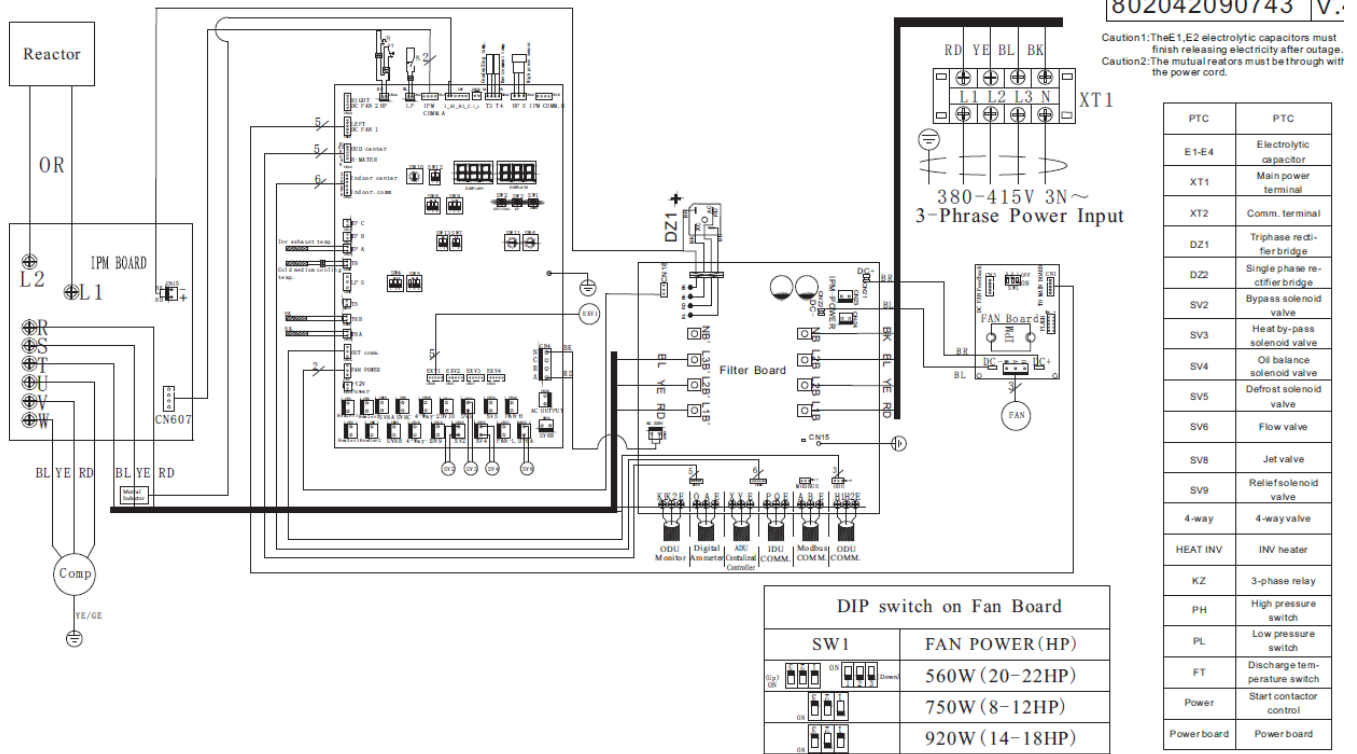
- i. Auto mode
- ii. Heating priority mode
- iii. Cooling priority mode
- iv. Cooling-only mode
- v. Heating-only mode
- vi. VIP No.63 address priority or Auto mode.

					
Auto priority (default)	Heating priority mode	Coolingpriority mode	VIP priority	Heating onlymode	Cooling only mode

2.4 Outdoor unit wiring diagrams and field wiring

2.4.1 Wiring diagram

2.4.1.1 VMEP008-020



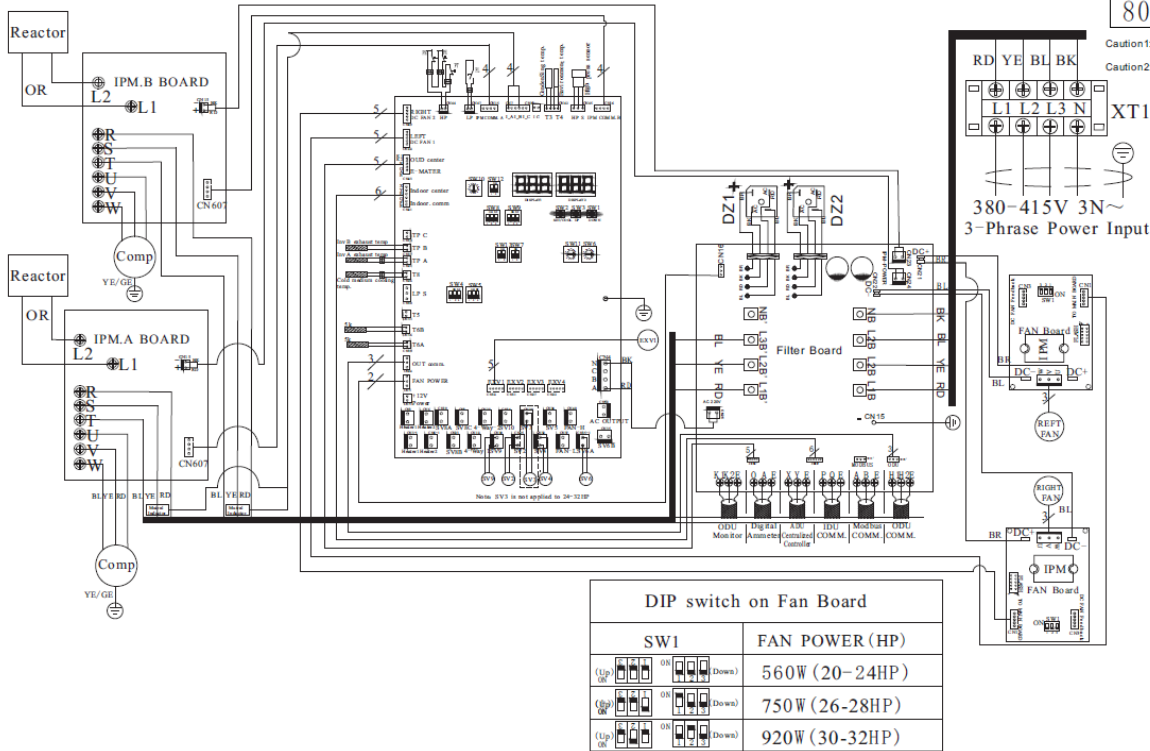
Caution: 1. The E1 E2 electrolytic capacitors must finish releasing electricity after outage.

2. The Mutual reactors must be through with power cord.

2.4.1.2 VMEP020-030

802042090750 | V.6

Caution: The E1, E2 electrolytic capacitors must finish releasing electricity after outage.
 Caution2: The mutual reactors must be through with the power cord.



PTC	PTC
E1-E4	Electrolytic capacitor
XT1	Main power terminal
XT2	Comm. terminal
DZ1	Single phase rectifier bridge
DZ2	Single phase rectifier bridge
SV2	Bypass solenoid valve
SV3	Heat by-pass solenoid valve
SV4	Oil balance solenoid valve
SV5	Defrost solenoid valve
SV6	Flow valve
SV8	Jet valve
SV9	Relief solenoid valve
4-way	4-way valve
HEAT INV	INV heater
KZ	3-phase relay
PH	High pressure switch
PL	Low pressure switch
FT	Discharge temperature switch
Power	Start contactor control
Power board	Power board

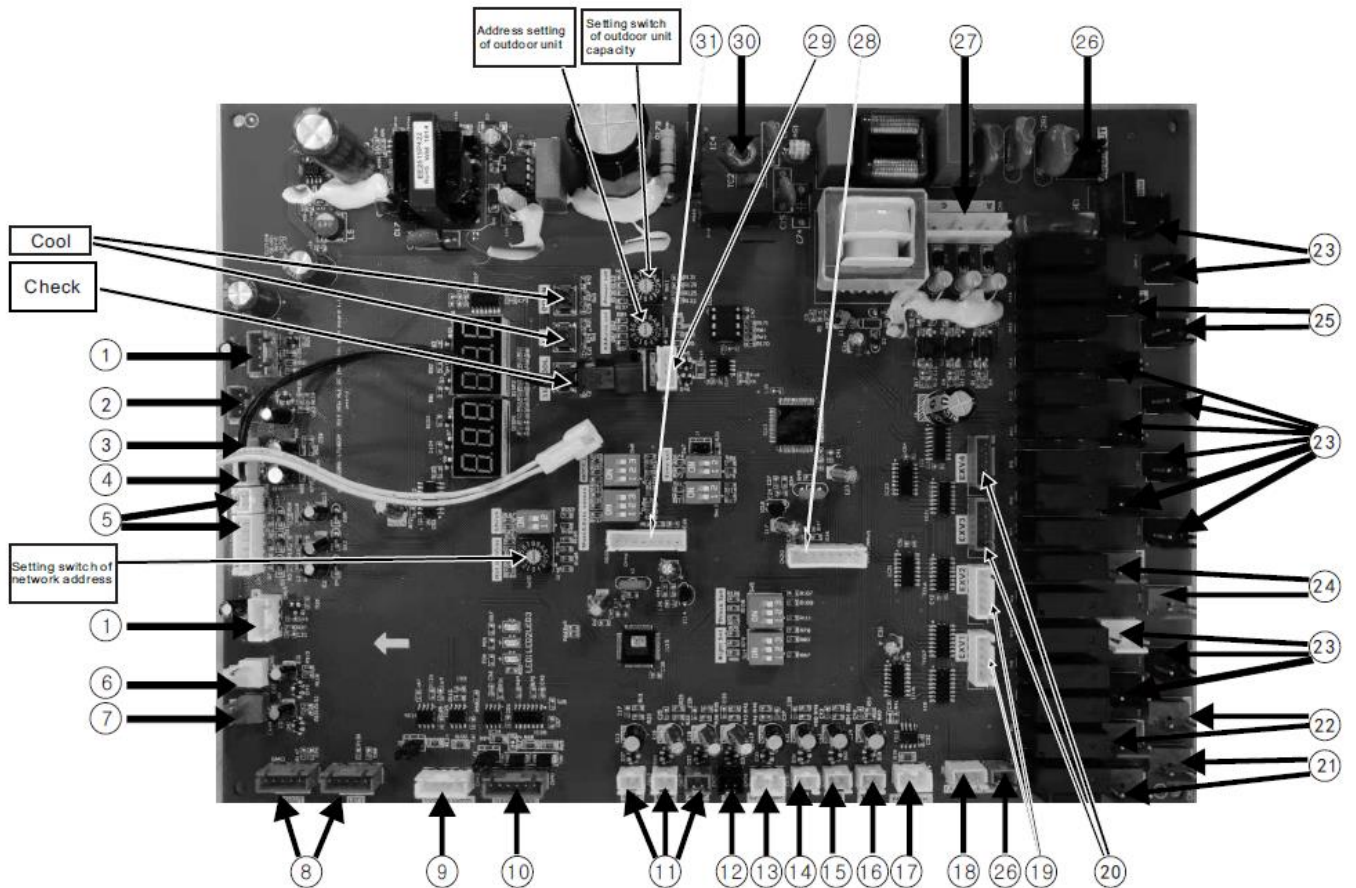
SW1	FAN POWER (HP)
(Up) (Down)	560W (20-24HP)
(Up) (Down)	750W (26-28HP)
(Up) (Down)	920W (30-32HP)

- Caution:** 1. The E1 E2 electrolytic capacitors must finish releasing electricity after outage.
 2. The Mutual reactors must be through with power cord.

Remarks:

E1-E4	XT1	XT2	DZ1	DZ2	SV2	SV4
Electrolytic capacitor	Main power terminal	Common terminal	3-phase rectifier bridge	Single phase rectifier bridge	Bypass solenoid valve	Oil balance solenoid valve
SV5	SV6	4-WAY	PH	PL	FT	POWER
Defrost solenoid valve	Flow valve	4-way valve	High pressure switch	Low pressure switch	Exhaust switch	Start contactor control

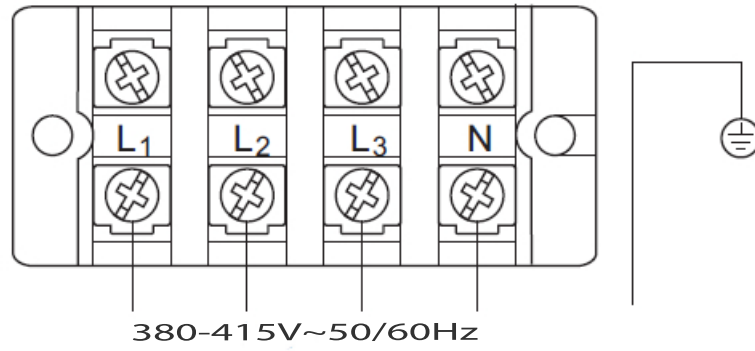
2.4.2 Main PCB



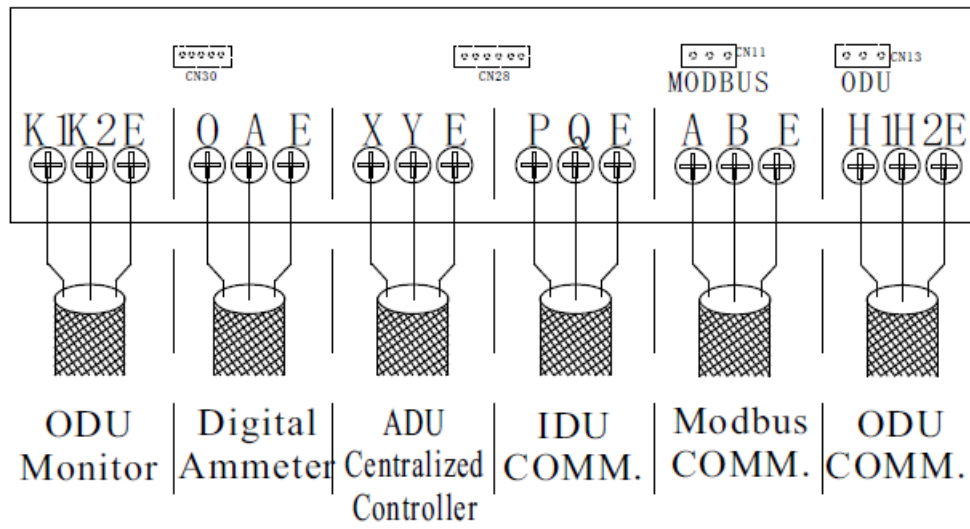
1	Module board communication port
2	Input port for detection of the system high pressure
3	Interface for detection of the outdoor ambient temperature
4	Interface for detection of the condenser coil temperature
5	Port to detect the primary side current for the compressors
6	Input port for signal of the system low-pressure detector switch
7	Input port for signal of the system high-pressure detector switch
8	Control port of the DC fan (left fan and single fan use port 1)
9	Interface for electric meter for online control and charging of the outdoor unit
10	Port for indoor-outdoor unit communications and indoor unit network wiring
11	Interface for the exhaust sensor of frequency-variable compressor
12	Refrigerant cooling copper tube temperature sensor port
13	Input port for detection of the system low pressure (Reserved)
14	Oil temperature sensor port (Reserved)
15	Interface for the sensors of panel mode heat exchanger
16	Interface for the sensors of panel mode heat exchanger
17	Communication port between outdoor units
18	Fan power relay output
19	Drive ports of the electronic expansion valve 1 and 2
20	Drive ports of the electronic expansion valve 3 and 4
21	Heater for A inverter compressor
22	Heater for B inverter compressor
23	SV1,SV2,SV3,SV4SV5, SV6,SV8A,SV8B outlet
24	The Control port of the 4-way 1/2 valve
25	Low fan for AC fan and High fan for AC fan
26	Reserved
27	Power input of mainboard
28	Program download (0547)
29	Password dog input port
30	GND
31	Program download (0537)

2.4.2.1 Field wiring

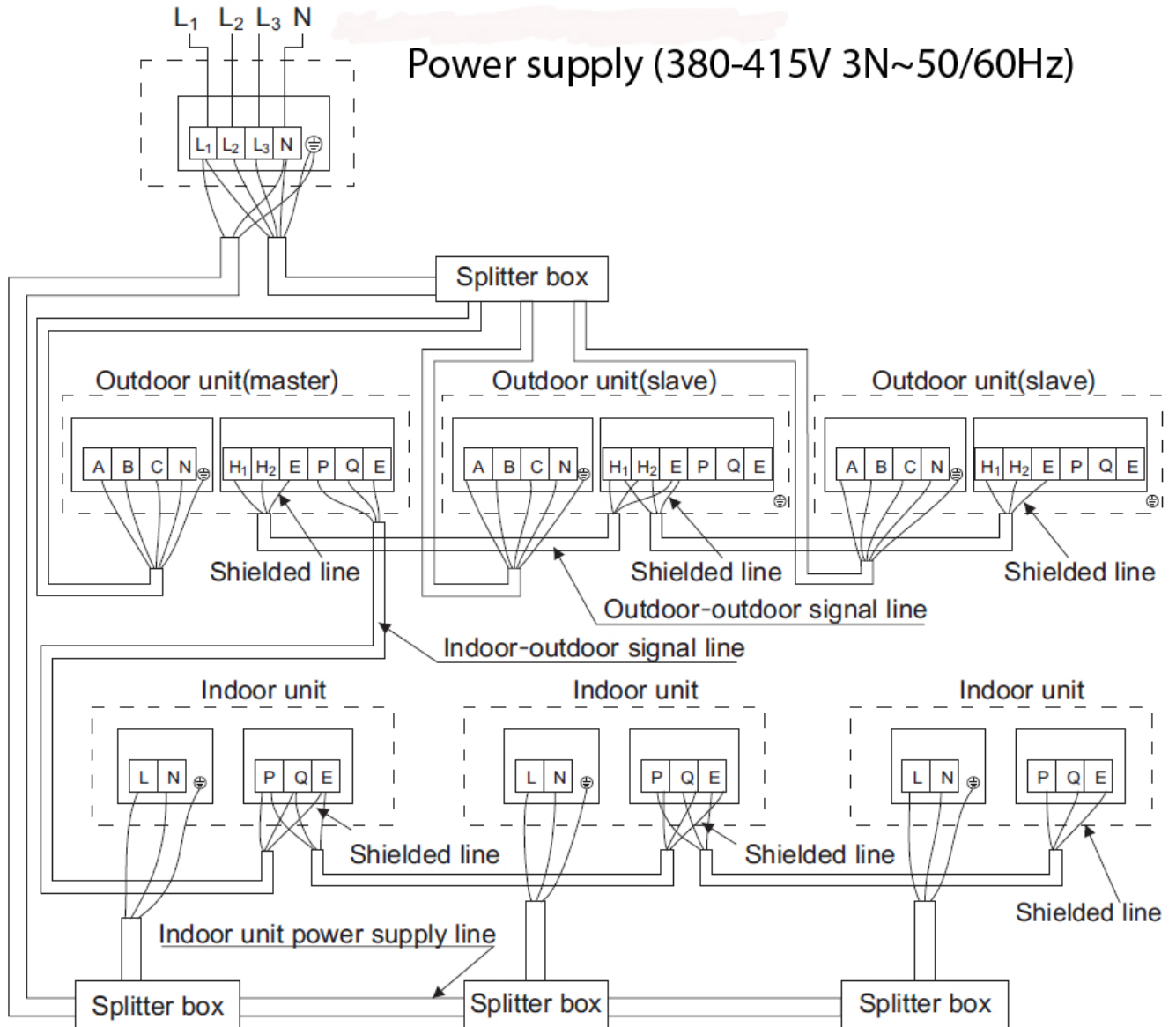
1) Power supply terminals



2) Communication terminals



3) Wiring between indoor and outdoor unit



Note:

- a) The signal connecting line between outdoor units, indoor and outdoor units and indoor units has polarity. When connecting, be careful to prevent error connection.
- b) Signal line shall adopt three-core shielded wire with an area above 0.75 mm².
- c) Do not bind signal line and copper pipe together with belting.
- d) Make sure that the shield metal layer should be grounded well indoor control box in order to prevent interference.
- e) It's forbidden to connect 200V or above high-volt live wire to the communication terminal.

2.4.3 Outdoor unit power wiring

2.4.3.1 Separately power supply (without power facility)

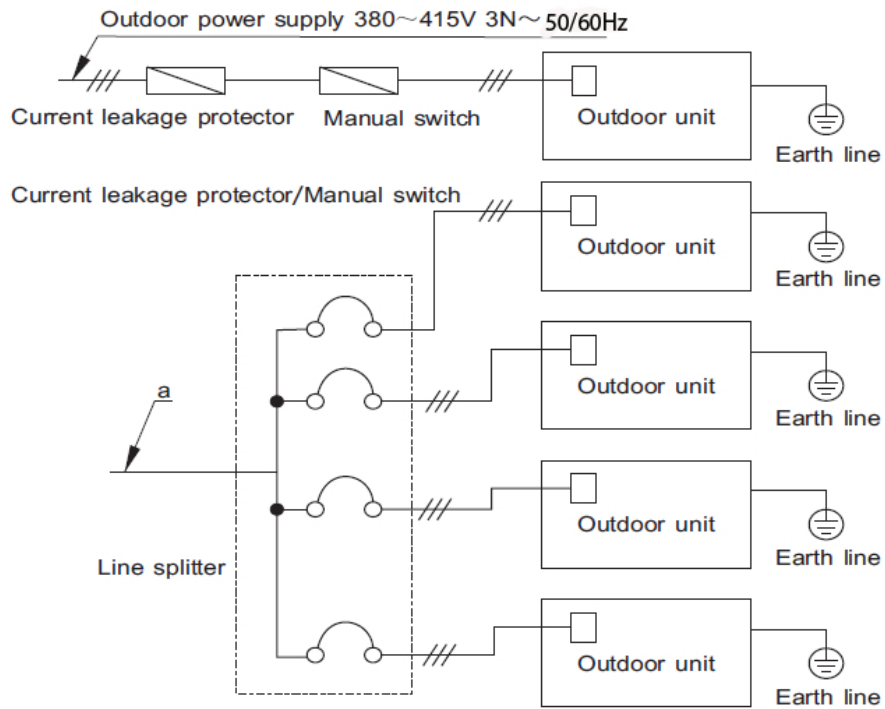
Model	Power supply	The shortest wiring diameter (mm ²)			Manual switch (A)		Circuit breaker
		≤20m	≤50m	GND	Capacity	Fuse	
VMEP008N7A-13V252	380-415V 3 Phase 50-60Hz	4×6	4×10	6	32	32	<100mA, 0.1sec
VMEP009N7A-16V280		4×6	4×10	6	32	32	<100mA, 0.1sec
VMEP010N7A-19V335		4×6	4×10	10	32	32	<100mA, 0.1sec
VMEP012N7A-23V400		4×10	4×16	10	50	40	<100mA, 0.1sec
VMEP014N7A-26V450		4×10	4×16	10	50	40	<100mA, 0.1sec
VMEP016N7A-29V500		4×10	4×16	10	50	40	<100mA, 0.1sec
VMEP018N7A-33V560		4×16	4×25	16	63	60	<100mA, 0.1sec
VMEP020N7A-36V615		4×16	4×25	16	63	60	<100mA, 0.1sec
VMEP022N7A-39V670		4×16	4×25	16	63	60	<100mA, 0.1sec
VMEP024N7A-43V730		4×16	4×25	16	63	60	<100mA, 0.1sec
VMEP026N7A-46V785		4×16	4×25	16	63	60	<100mA, 0.1sec
VMEP028N7A-50V850		4×25	4×25	35	80	80	<100mA, 0.1sec

Note:

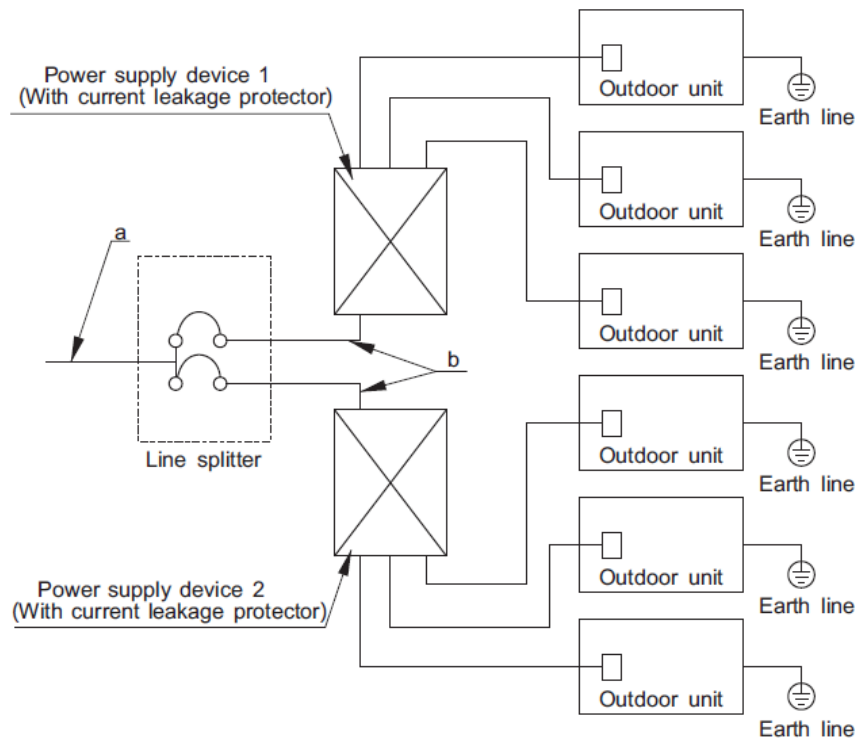
1. Each unit has a separate power supply, so the electrical wiring for each unit shall comply with the corresponding standard.
2. The diameter and continuous length of cables in the table is for the situation when the voltage drop is within 2%, and the cable diameter shall be selected as per the related specification if the continuous length goes beyond the value in the table.

2.4.3.2 With power facilities:

a) Case 1:



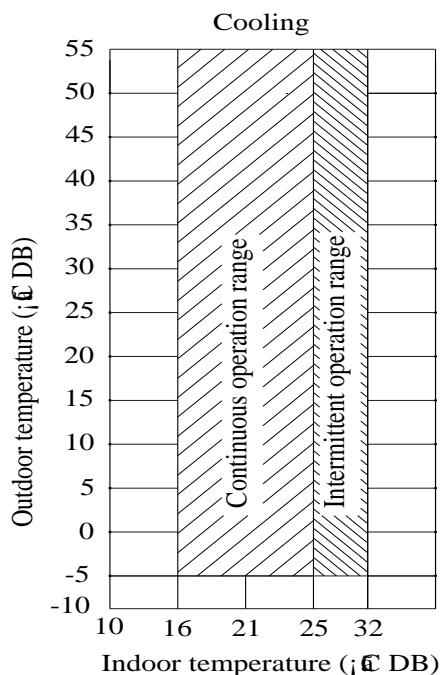
b) Case 2:



Note:

- Select power wire for these five models separately according to relevant standard.
- The wiring diameter and the length in the table indicate the condition that the voltage dropping range is within 2%. If the length exceeds the above figure, please select the wire diameter according to relevant standard.

2.5 - Operation limits



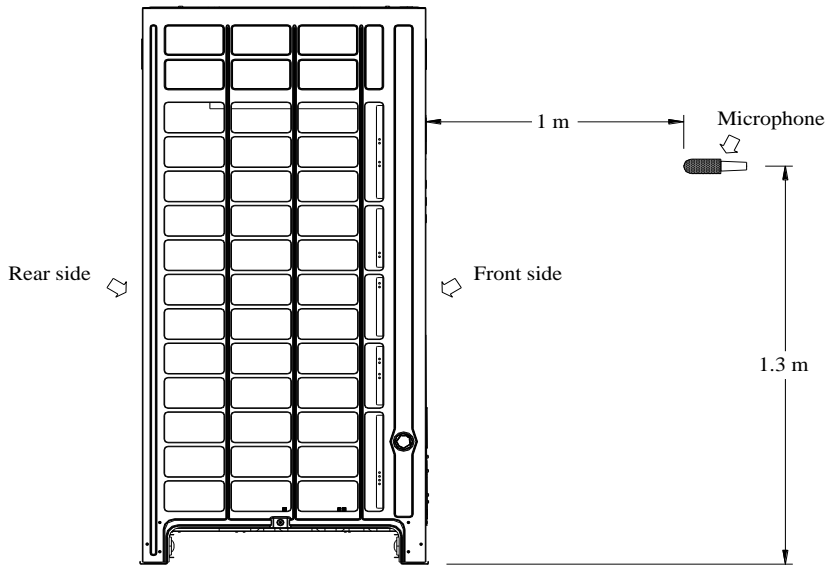
Operation mode	Outdoor temperature	Indoor temperature
Cooling	-5°C ~ 55°C	16°C ~ 32°C

Notes:

- If the unit is operating beyond above condition, protection device will be activated; even then the units will abnormality run.
- These figures base on the operation conditions between indoor units and outdoor units: equivalent pipe length is 5m, and height difference is 0m.
- **Precaution:** the indoor relative humidity should be lower than 80%. If the air conditioner works in an environment with a relative humidity higher than mentioned above, the surface of the air conditioner may condensate. In this case, it is recommended to set the air speed of the indoor unit to high.

2.6 - Operation sound Levels

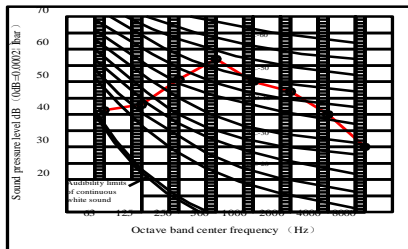
2.6.1 Testing method and sound levels



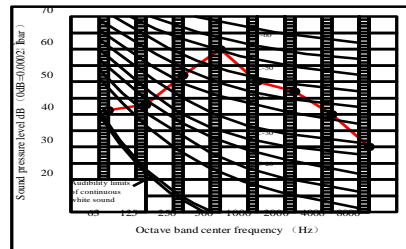
Test value

Outdoor unit	Sound level dB(A)
8 HP	58
10 HP	58
12 HP	60
14 HP	60
16 HP	61
18HP	62
20HP	63
22HP	63
24HP	65
26HP	66
28HP	66
30HP	67

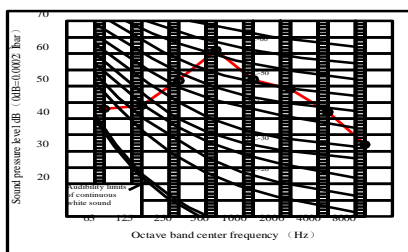
6.2 NC curve



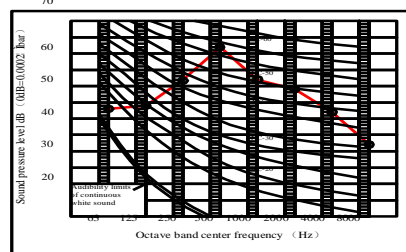
VMEP008(9,10)N7A



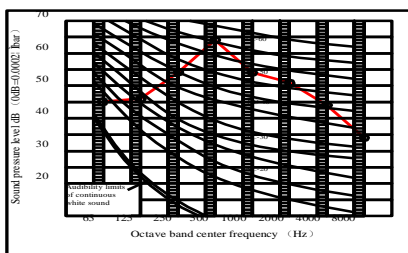
VMEP012N7A



VMEP014N7A



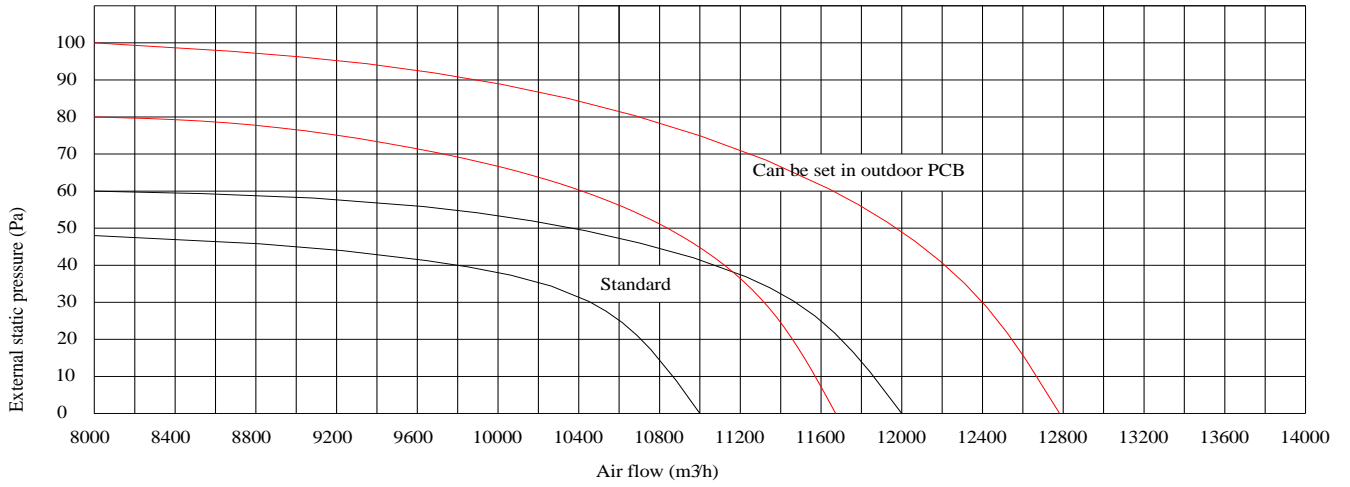
VMEP016N7A



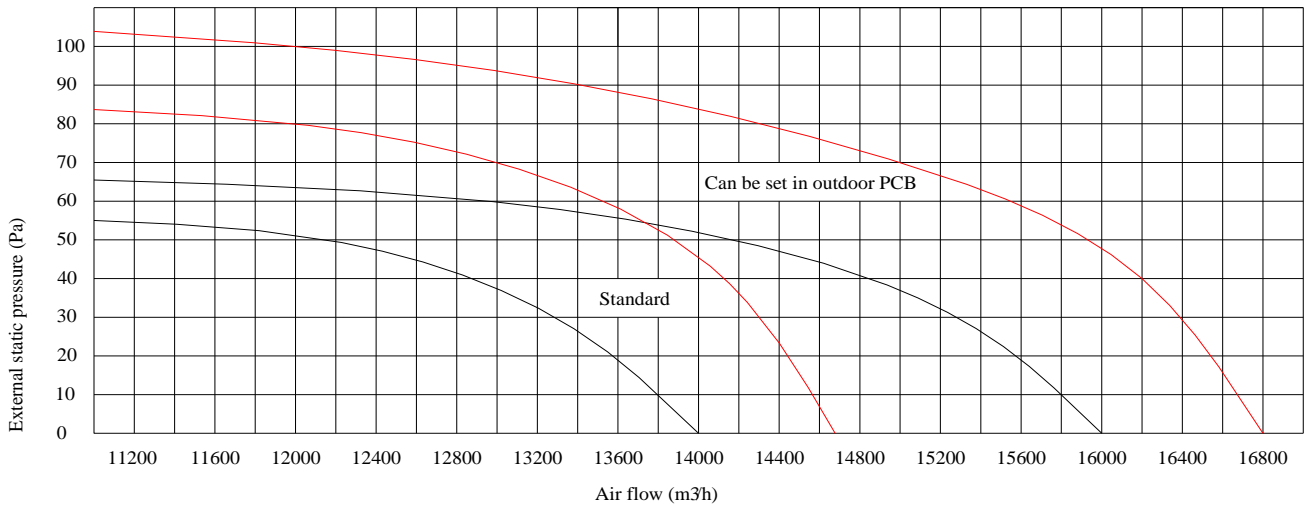
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2.7 - Outdoor fan performance

2.7.1 VMEP008-009-010 's air-flow-external-static-pressure curve



2.7.2 VMEP012-014-016-018-020-022 's air-flow-external-static-pressure curve



2.7.3 VMEP024-026-028 's air-flow-external-static-pressure curve

2.8 - Functional parts and safety devices

Table 1.

Item	Symbol	Name	VMEP008N7A- 13V252	VMEP009N7A- 16V280	VMEP010N7A- 19V335		
Compressor	Inverter	Inverter compressor	LNB53FTKMC-L	LNB53FTKMC-L	LNB53FTKMC-L		
Motor and security devices	Motor	Fan motor	Model	DR-310-750-8-1	DR-310-750-8-1	DR-310-750-8-1	
			Output power	750W	750W	750W	
		Safety thermostat	On	110°C			
			Off	/			
	HP	High pressure switch	OFF:45(±1)kg/cm ² ON:35(±1)kg/cm ²				
	LP	Low pressure switch	OFF:0.5(±1)kg/cm ² ON:1.5(±1)kg/cm ²				
Temperature sensor	T3,T4	Temperature sensor (condenser outlet/ambient temperature)	25°C=5KΩ				
	Discharge thermostat	Thermostat (Inverter/Fixed discharge)	BW120°C ON:120°C OFF:90°C				
Pressure sensor	HPSH	High pressure sensor (discharge)	Model: 2HMP6-9 Character: Vout=0.870*P+0.5(MPa)				
Functional parts	PMV	Electronic expansion valve	S.TB-ZL-DPF-A01 (Sanhua)				
	4-W/V	4-way valve	/				

Table 2.

Item	Symbol	Name	VMEP012N7A- 23V400	VMEP014N7A- 26V450	VMEP016N7A- 29V500	
Compressor	Inverter Compressor	Inverter compressor	LNB65FTGMC	LNB65FTGMC	LNB65FTGMC	
Motor and security devices	Motor	Fan motor	Model	DR-310-920-8		
			Output power	920W		
		Safety thermostat	On	110°C		
			Off	/		
	HP	High pressure switch	OFF:45(±1)kg/cm ² ON:35(±1)kg/cm ²			
LP	Low pressure switch	OFF:0.5(±1)kg/cm ² ON:1.5(±1)kg/cm ²				
Temperature sensor	T3,T4	Temperature sensor (condenser outlet/ambient temperature)	25°C=5KΩ			
	Discharge thermostat	Thermostat (Inverter/Fixed discharge)	BW120°C ON:120°C OFF:90°C			
Pressure sensor	HPSH	High pressure sensor (discharge)	Model: 2HMP6-9 Character: Vout=0.870*P+0.5(MPa)			
Functional parts	PMV	Electronic expansion valve	S.TB-ZL-DPF-A15 (Sanhua)			
	4-W/V	4-way valve	/			

Table 3.

Item	Symbol	Name	VMEP018N7A- 33V560	VMEP020N7A- 36V615	VMEP022N7A- 39V670	
Compressor	Inverter Compressor	Inverter compressor	LNB53FTKMC-L*2	LNB53FTKMC-L*2	LNB53FTKMC-L*2	
Motor and security devices	Motor	Fan motor	Model	DR-310-560-8-1*2		
			Output power	560W*2		
		Safety thermostat	On	110°C		
			Off	/		
	HP	High pressure switch	OFF:45(±1)kg/cm ² ON:35(±1)kg/cm ²			
	LP	Low pressure switch	OFF:0.5(±1)kg/cm ² ON:1.5(±1)kg/cm ²			
Temperature sensor	T3,T4	Temperature sensor (condenser outlet/ambient temperature)	25°C=5KΩ			
	Discharge thermostat	Thermostat (Inverter/Fixed discharge)	BW120°C ON:120°C OFF:90°C			
Pressure sensor	HPSH	High pressure sensor (discharge)	Model: 2HMP6-9 Character: $V_{out}=0.870*P+0.5$ (MPa)			
Functional parts	PMV	Electronic expansion valve	S.TB-ZL-DPF-A15 (Sanhua)			
	4-W/V	4-way valve	/			

Table 4.

Item	Symbol	Name	VMEP024N7A-43V730	VMEP026N7A-46V785	VMEP028N7A- 50V850	
Compressor	Inverter Compressor	Inverter compressor	LNB65FTGMC*2	LNB65FTGMC*2	LNB65FTGMC*2	
Motor and security devices	Motor	Fan motor	Model	DR-310-750-8-1		
			Output power	750W		
		Safety thermostat	On	110°C		
			Off	/		
	HP	High pressure switch	OFF:45(±1)kg/cm ² ON:35(±1)kg/cm ²			
	LP	Low pressure switch	OFF:0.5(±1)kg/cm ² ON:1.5(±1)kg/cm ²			
Temperature sensor	T3,T4	Temperature sensor (condenser outlet/ambient temperature)	25°C=5KΩ			
	Discharge thermostat	Thermostat (Inverter/Fixed discharge)	BW120°C ON:120°C OFF:90°C			
Pressure sensor	HPSH	High pressure sensor (discharge)	Model: 2HMP6-9 Character: Vout=0.870*P+0.5(MPa)			
Functional parts	PMV	Electronic expansion valve	S.TB-ZL-DPF-A16(Sanhua)			
	4-W/V	4-way valve	/			

2.9 - Electrical Characteristics

Table 2-9.1: Outdoor unit electrical characteristics

Model	Power Supply ¹						OFM
	Capacity	Hz	Volts	Min. volts	Max. volts	MCA	MOCP
VMEP008N7A	50/60	380~415	342	456	24	30	3.95
VMEP009N7A	50/60	380~415	342	456	24.5	30	3.95
VMEP010N7A	50/60	380~415	342	456	24.7	30	3.95
VMEP012N7A	50/60	380~415	342	456	29.7	40	4.84
VMEP014N7A	50/60	380~415	342	456	30.3	40	4.84
VMEP016N7A	50/60	380~415	342	456	45	50	4.84
VMEP018N7A	50/60	380~415	342	456	45.5	50	2.95*2
VMEP020N7A	50/60	380~415	342	456	46	50	2.95*2
VMEP022N7A	50/60	380~415	342	456	57	60	2.95*2
VMEP024N7A	50/60	380~415	342	456	57.8	60	3.95*2
VMEP026N7A	50/60	380~415	342	456	58.3	60	3.95*2
VMEP028N7A	50/60	380~415	342	456	58.8	60	4.84*2

Abbreviations:

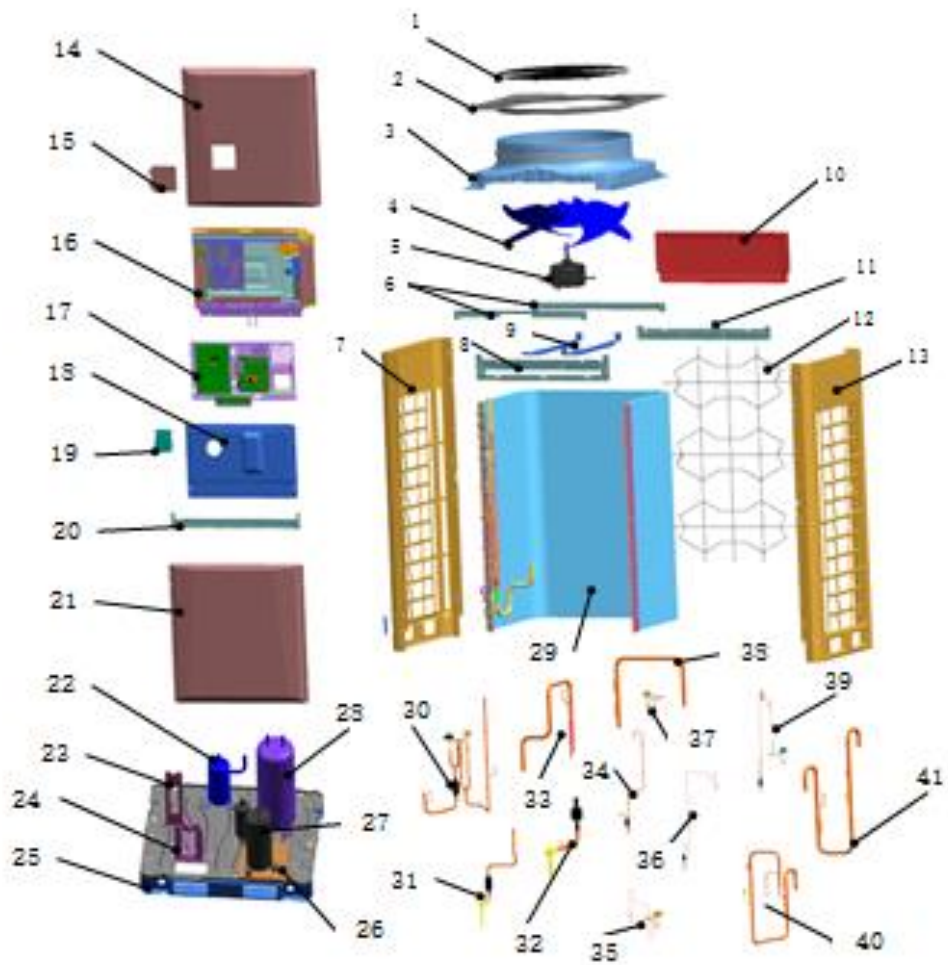
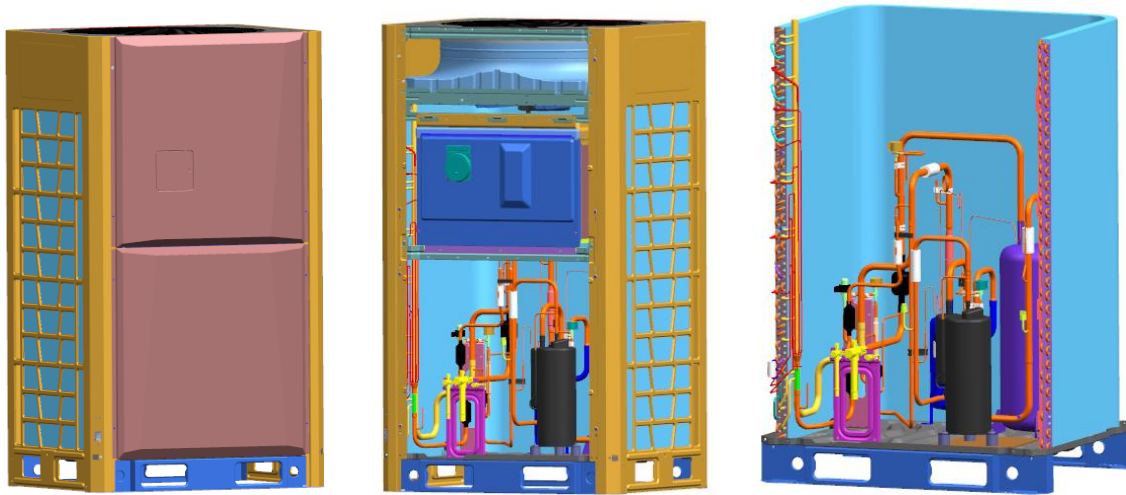
MCA: Minimum Circuit Amps; MOCP: Maximum Fuse Amps; FLA: Full Load Amps

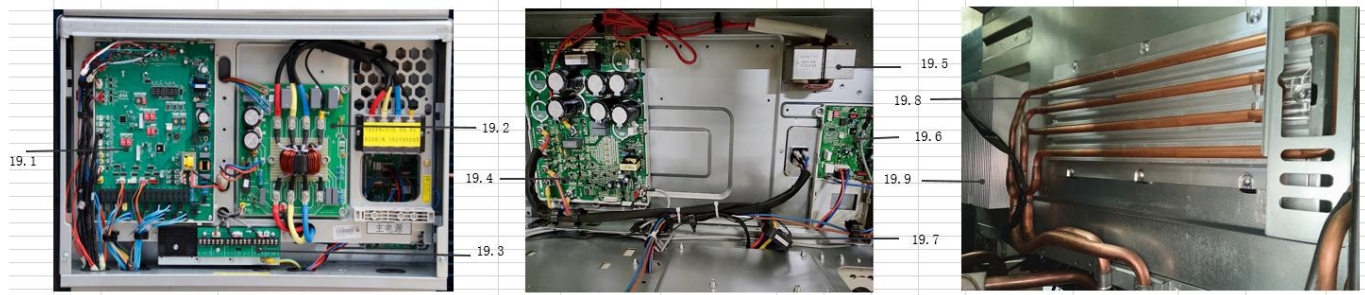
Notes:

1. Units are suitable for use on electrical systems where voltage supplied to unit terminals is not below or above listed range limits. Maximum allowable voltage variation between phases is 2%.
2. Select wire size based on the value of MCA.
3. FLA: Full Load Amps
4. MOCP indicates the maximum current on compressor start-up in amps.

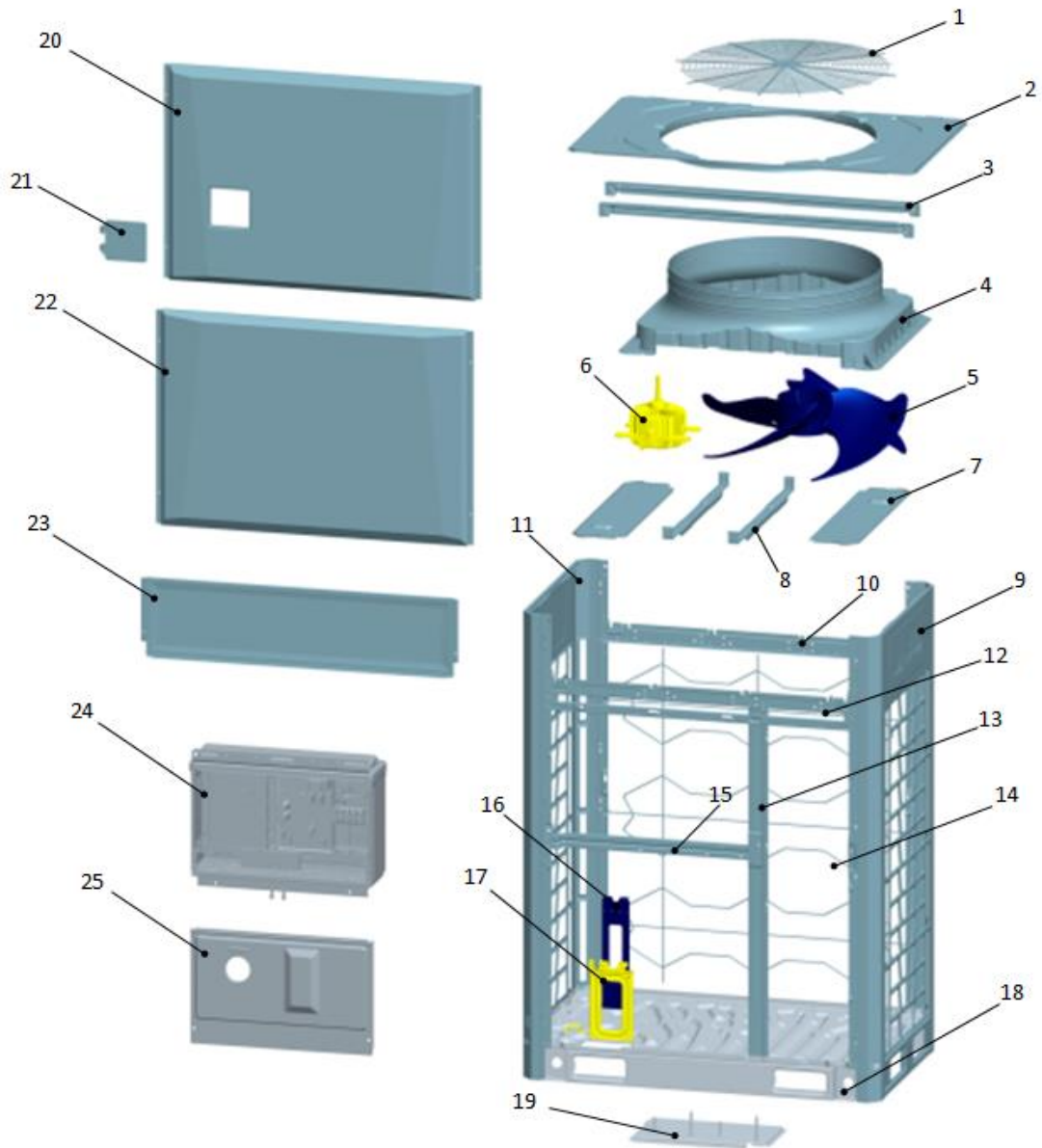
2.10 - Exploded views

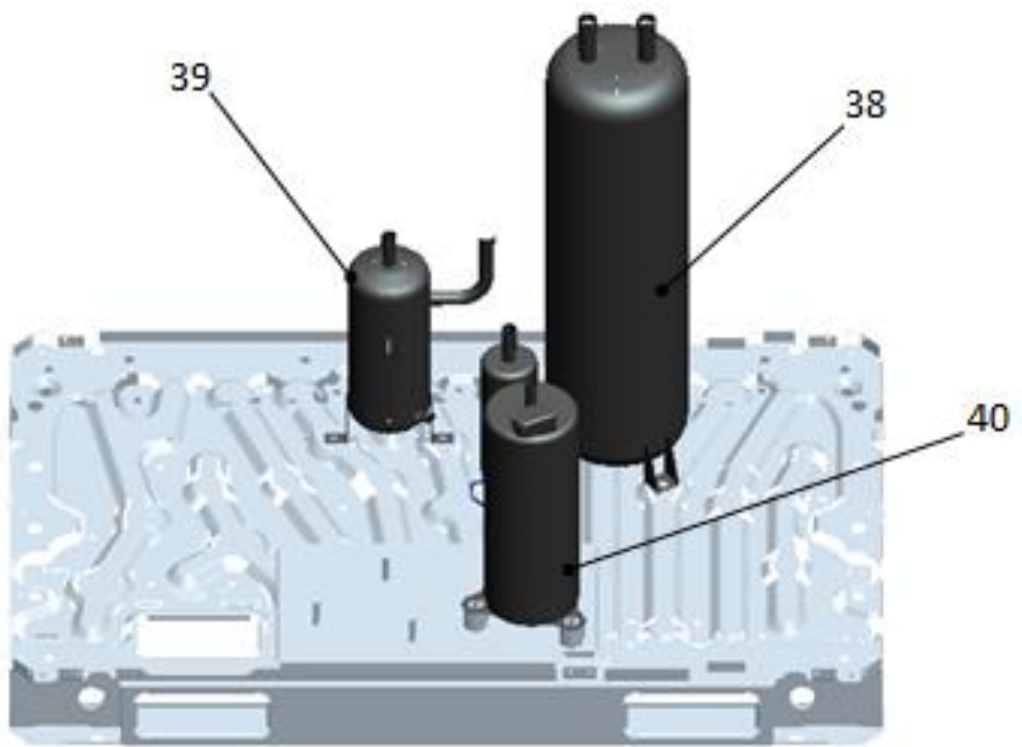
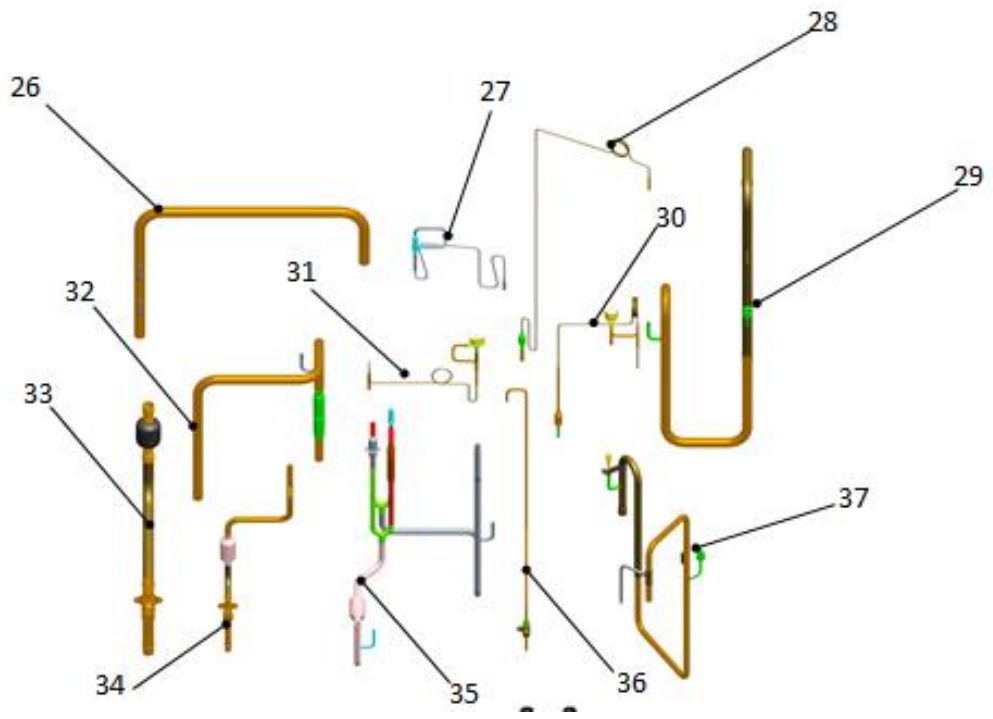
2.10.1 VMEP008-009-010





No.	Part Name	Quantity	No.	Part Name	Quantity
1	Top net	1	22	Oil separator	1
2	Top cover	1	23	Seat board	1
3	Air guide ring assembly	1	24	Pipe support plate	1
4	Axial flow leaf	1	25	Chassis assembly	1
5	Single shaft outdoor DC motor	1	26	Compressor support assembly	1
6	Roof beam	2	27	Inverter compressor	1
7	Left side panel assembly	1	28	gas liquid separator	1
8	Front motor beam support plate	1	29	Condenser assembly	1
9	Motor beam	2	30	High pressure liquid pipe assembly	1
10	Rear cover	1	31	High pressure stop valve assembly	1
11	Rear motor beam support plate assembly	1	32	Low pressure stop valve assembly	1
12	Back net	1	33	Check valve assembly	1
13	Right side panel assembly	1	34	Needle valve assembly	1
14	Upper panel	1	35	SV2 Solenoid valve components	1
15	Check window flap assembly	1	36	Oil return capillary comonents	1
16	control mounting plate assembly (down part)	1	37	SV3 Solenoid valve components	1
17	control mounting plate assembly (up part)	1	38	Gas liquid Seperator connection assembly	1
18	Control part cover	1	39	SV4 Solenoid valve components	1
19	Check window assembly	1	40	Compressor suction pipe assembly	1
20	Electric control box under support	1	41	Compressor exhaust pipe assembly	1
21	Lower board	1			

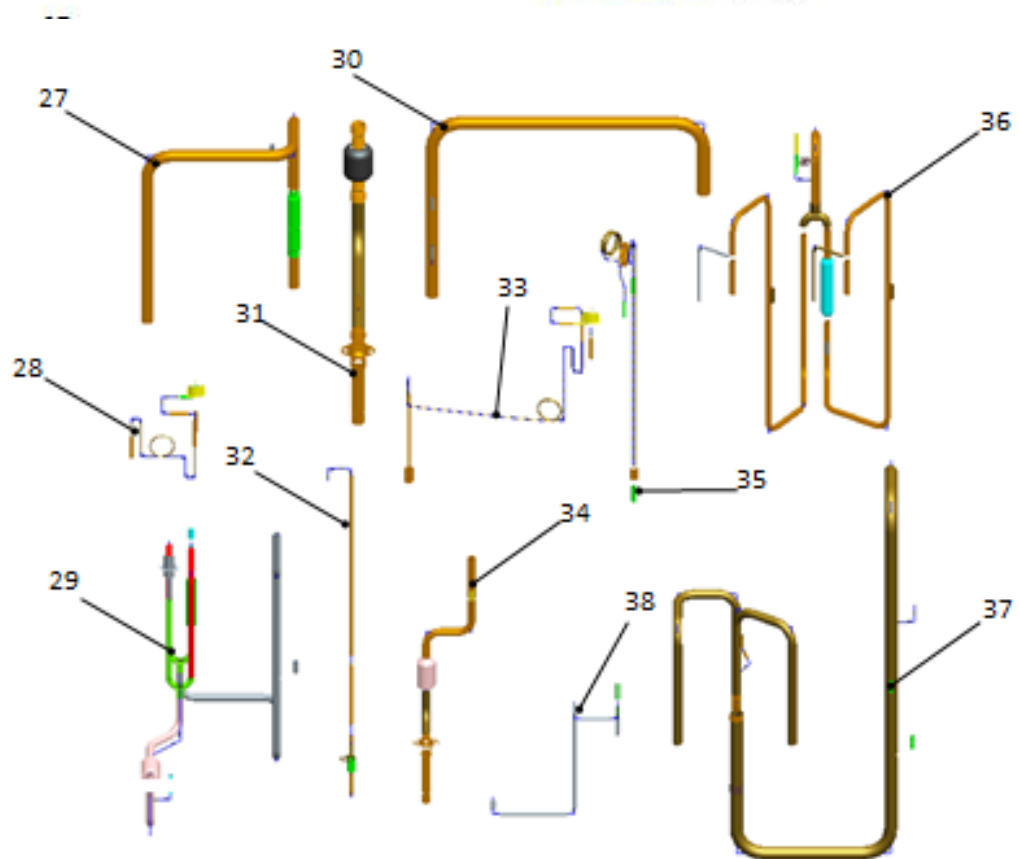
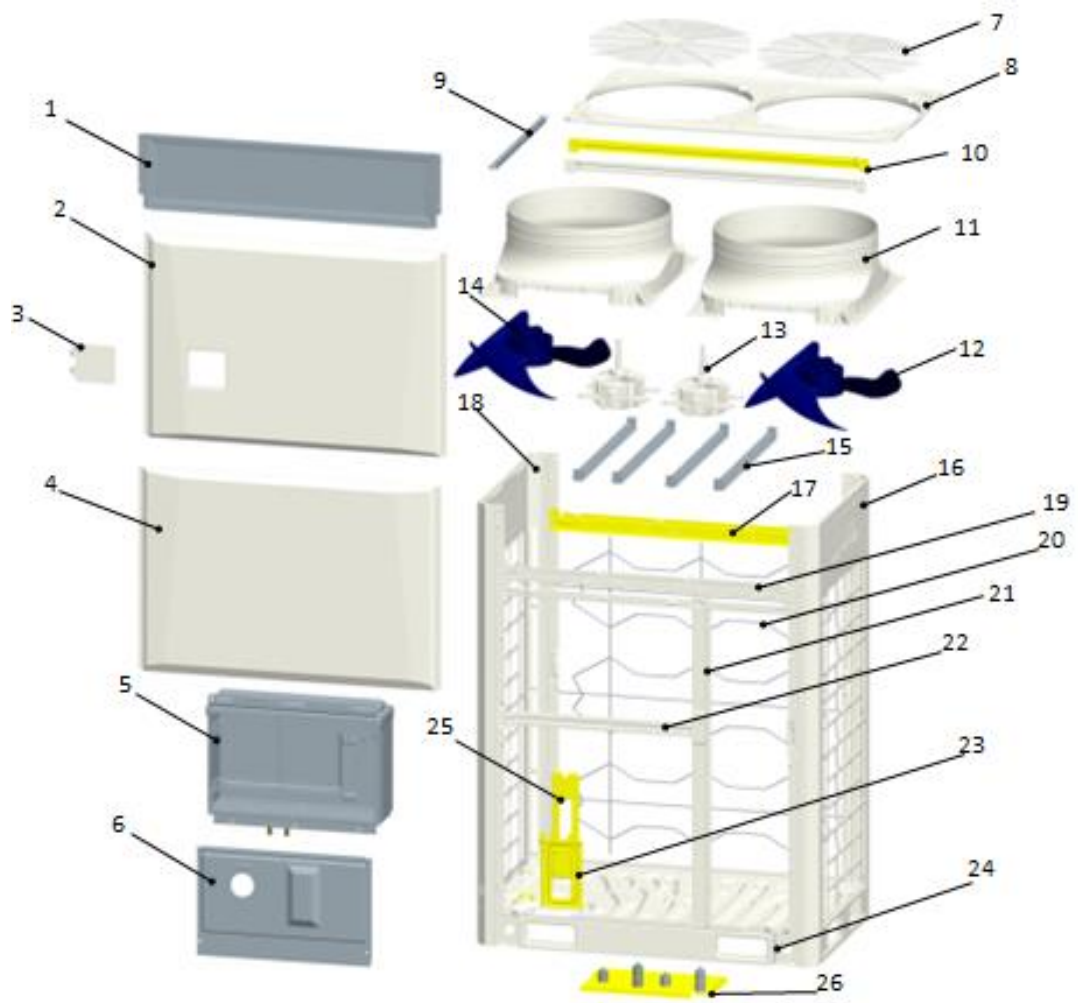


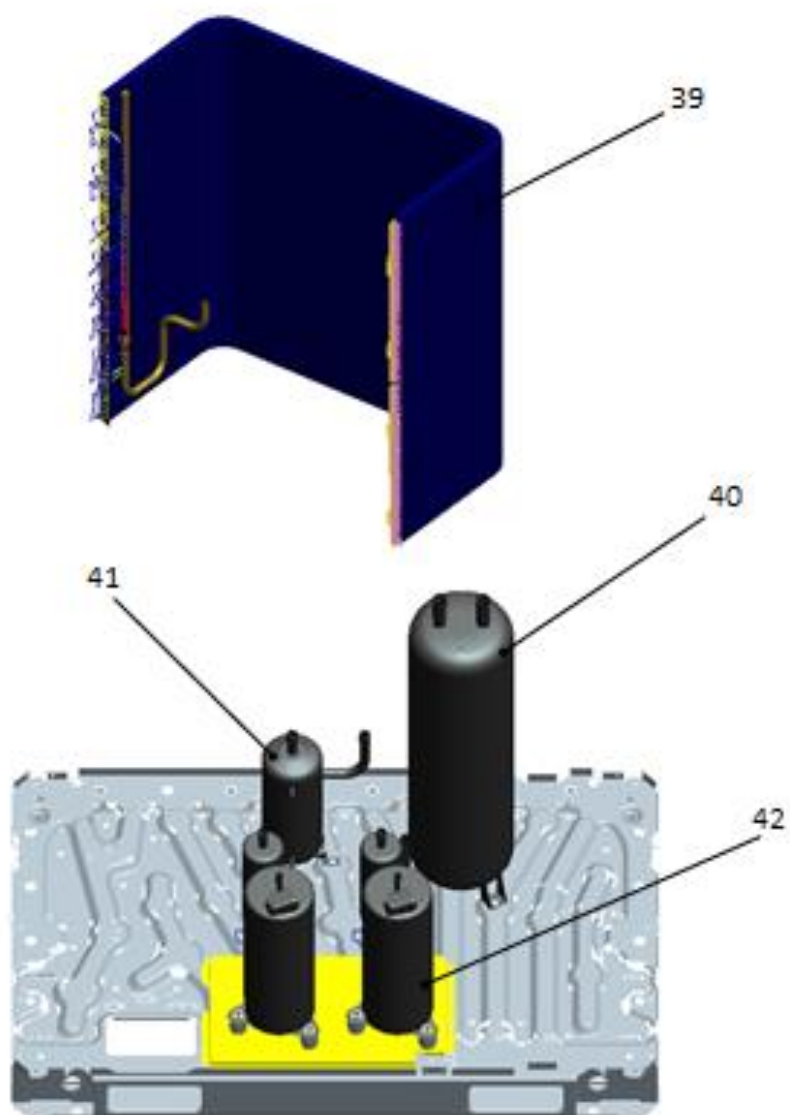


No.	Part Name	Quantity	No.	Part Name	Quantity
1	Top net	1	24	Outdoor electrical control box components	1
2	Top cover	1	24.1	IPM module board	1
3	Roof beam support	2	24.2	Single phase rectifier bridge	1
4	Axial flow leaf	1	24.3	Compressor inverter module board	1
5	Air guide ring assembly	1	24.4	Fan module board assembly	1
6	Single shaft outdoor motor	1	24.5	Refrigerant radiator assembly	1
7	Condenser seal plate	2	25	Electric control box cover assembly	1
8	Motor beam	2	26	Gas-liquid separator takeover assembly	1
9	Right side panel assembly	1	27	SV3 Solenoid valve components	1
10	Rear motor beam support plate assembly	1	28	Compressor oil return capillary	1
11	Left side panel assembly	1	29	Compressor suction pipe assembly	1
12	Front motor beam support plate	1	30	SV4 solenoid valve assembly	1
13	Front middle pillar	1	31	SV2 solenoid valve assembly	1
14	Back net	1	32	Check valve assembly	1
15	Electric control box under support	1	33	Low pressure stop valve assembly	1
16	Expansion valve assembly support	1	34	High pressure stop valve assembly	1
17	Valve plate	1	35	High pressure liquid pipe assembly	1
18	Chassis assembly	1	36	Needle valve assembly	1
19	Compressor support assembly	1	37	Compressor exhaust pipe assembly	1
20	Upper panel	1	38	Gas-liquid separator	1
21	Check window flap assembly	1	39	Oil separator	1
22	Lower board	1	40	Inverter compressor	1
23	Rear cover	1			

2.10.3 VMEP018-020

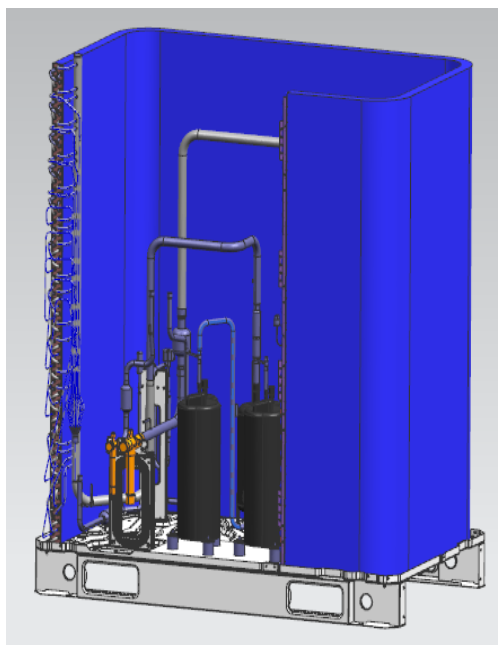
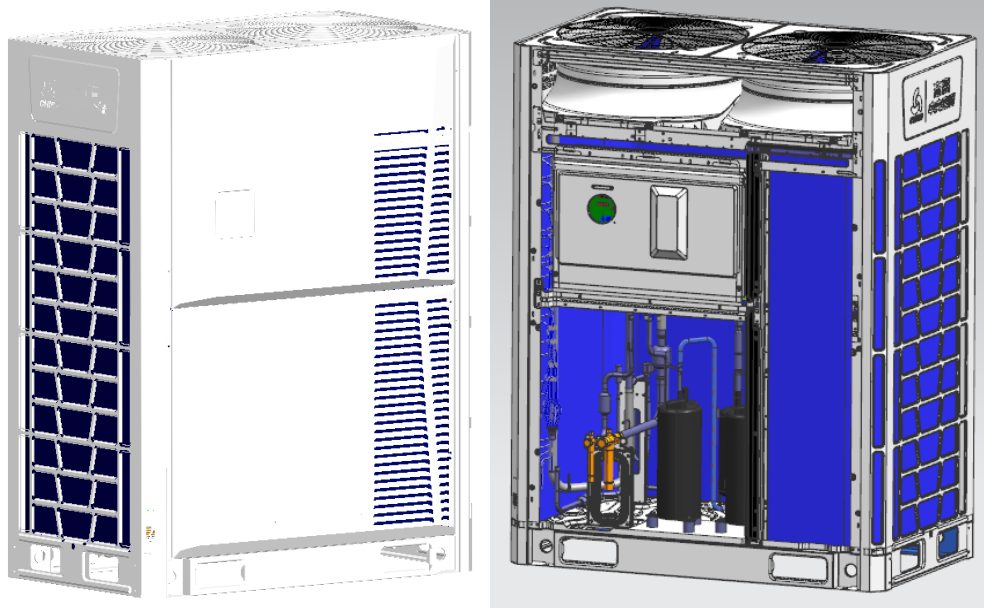


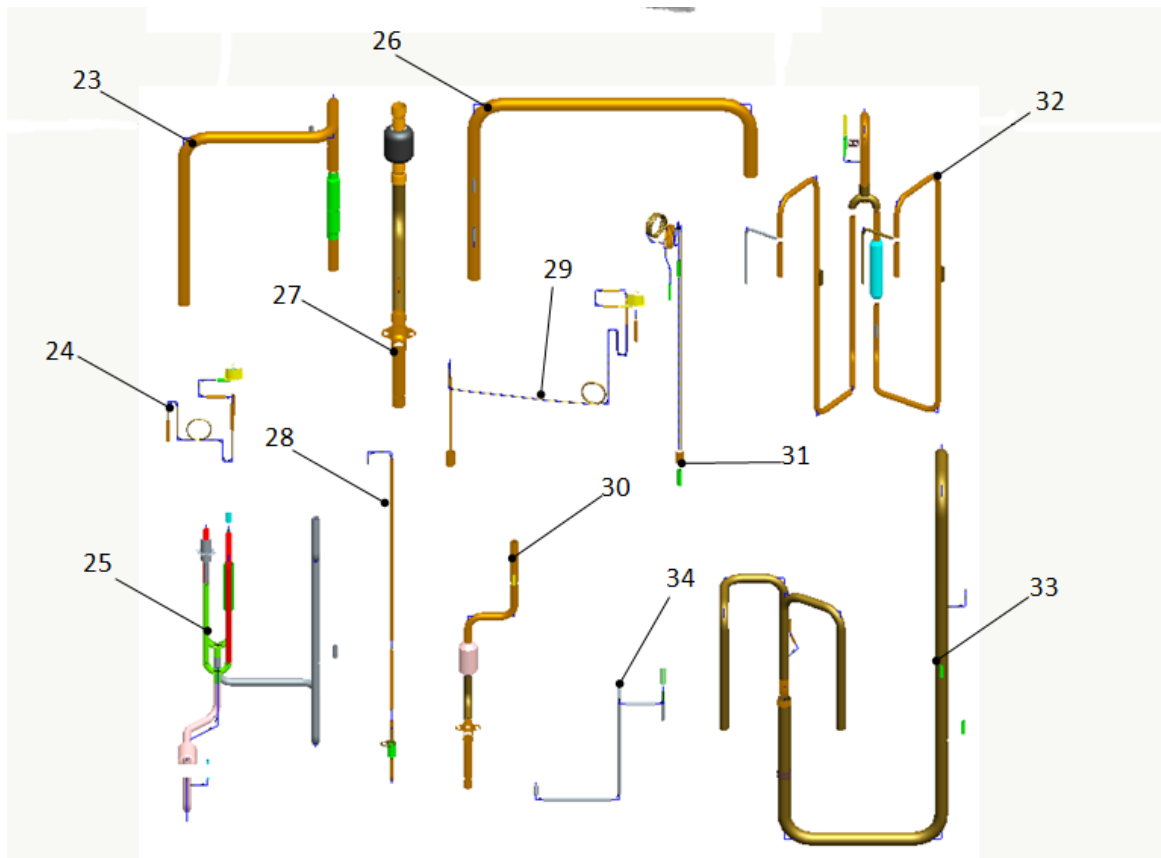
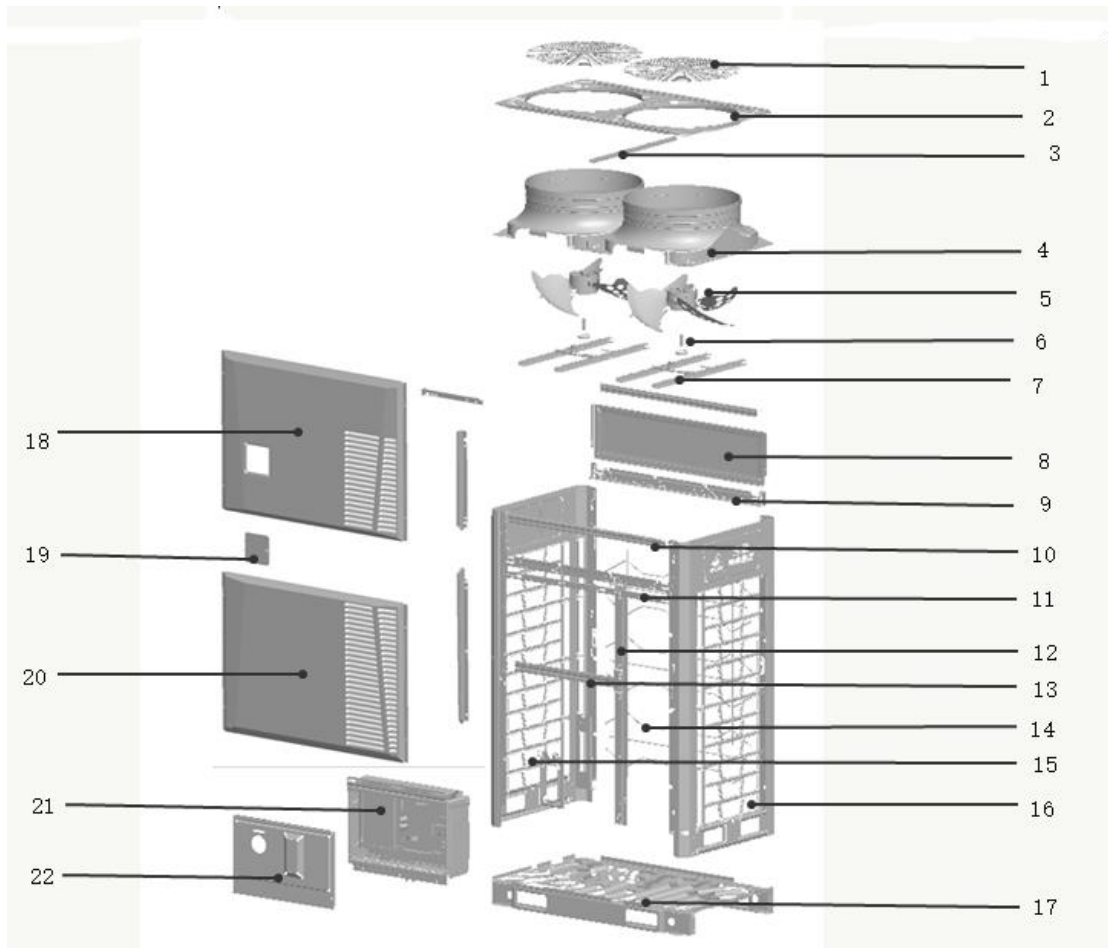


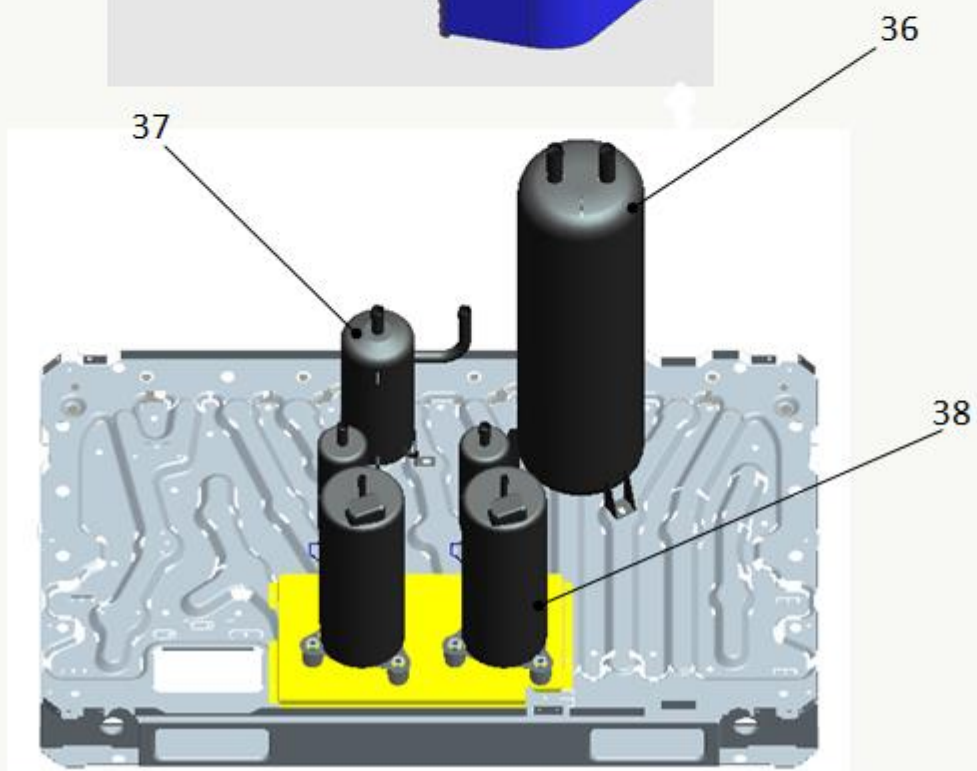
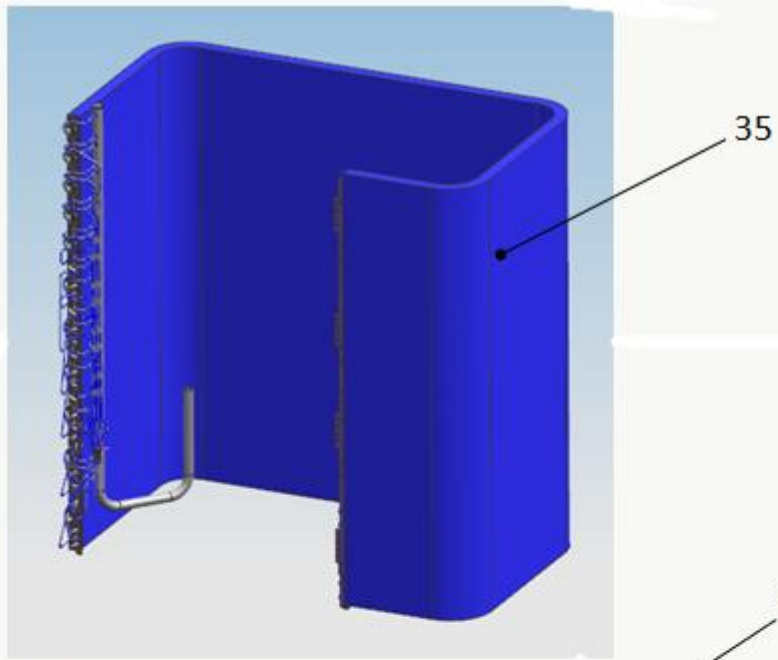


No.	Part Name	Quantity	No.	Part Name	Quantity
1	Rear cover	1	19	Front motor beam support plate	1
2	Upper panel	1	20	Back net	1
3	Check window flap assembly	1	21	Front middle pillar	1
4	Lower board	1	22	Electric control box under support	1
5	Outdoor electrical control box components	1	23	Valve mounting plate	1
5.1	IPM module board	1	24	Chassis assembly	1
5.2	Fan module mounting plate	1	25	Expansion valve assembly support	1
5.3	Fan module board assembly	1	26	Compressor support assembly	1
5.4	Compressor inverter module mounting plate	1	27	Check valve assembly	1
5.5	Single phase rectifier bridge	1	28	SV2 Solenoid valve components	1
5.6	Reactor	1	29	High pressure liquid pipe assembly	1
6	Electric control box cover assembly	1	30	Gas-liquid separator takeover assembly	1
7	Top net	2	31	Low pressure stop valve assembly	1
8	Top cover	1	32	Needle valve assembly	1
9	Roof beam support	1	33	SV4 Solenoid valve components	1
10	Roof beam	2	34	High pressure stop valve assembly	1
11	Air guide ring assembly	1	35	Oil return capillary components	1
12	Axial flow leaf	1	36	Compressor exhaust pipe assembly	1
13	Single shaft outdoor motor	2	37	Compressor suction pipe assembly	1
14	Axial flow leaf	1	38	SV9 Solenoid valve components	1
15	Motor beam	4	39	Condenser assembly	1
16	Right side panel assembly	1	40	Vapour separator	1
17	Rear motor beam support plate assembly	1	41	Oil separator	1
18	Left side panel assembly	1	42	Inverter compressor	2

2.10.4 VMEP022

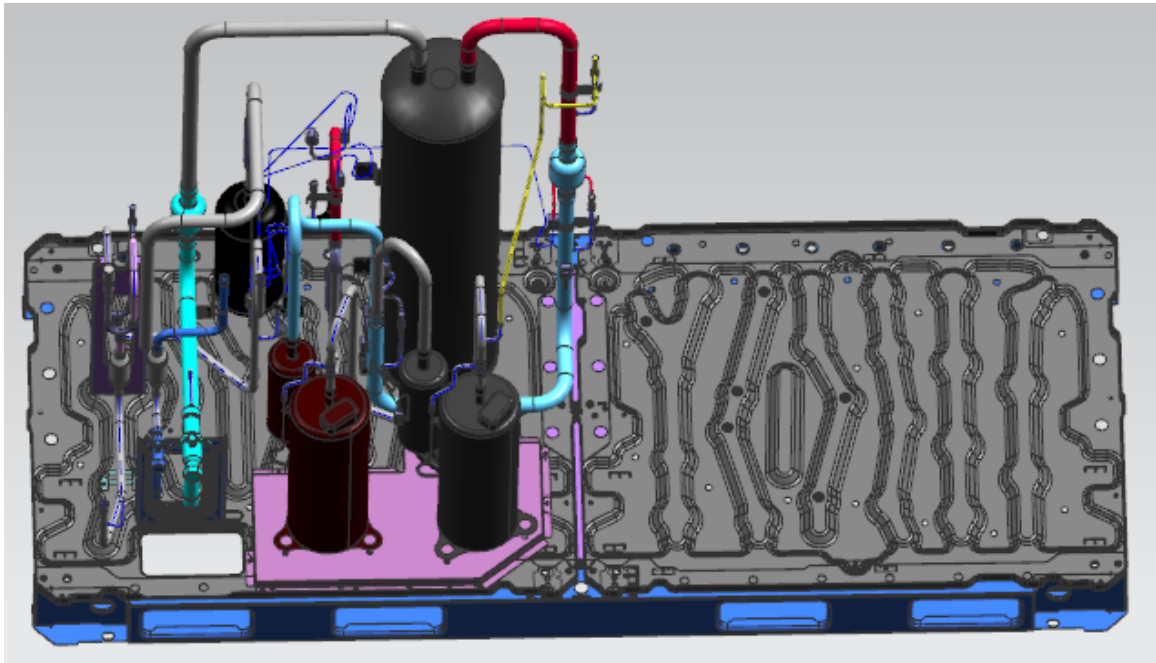
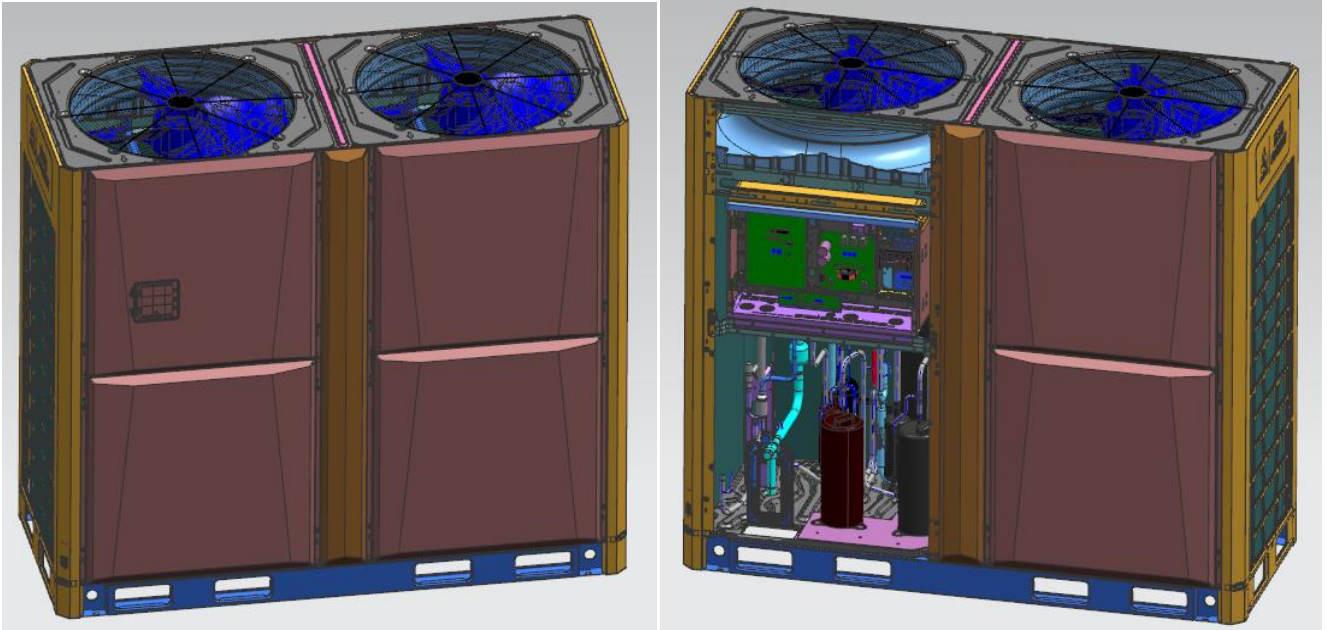


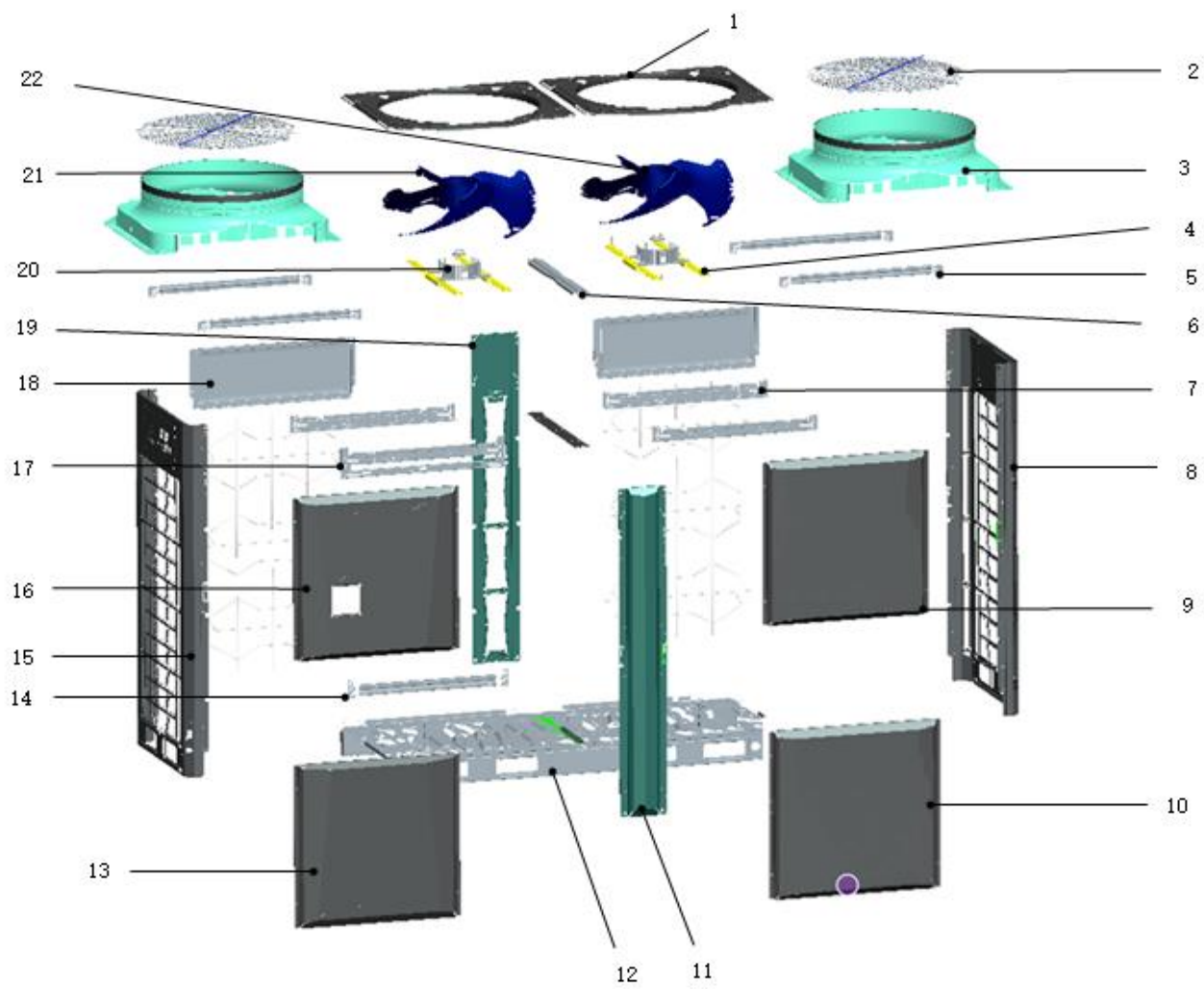


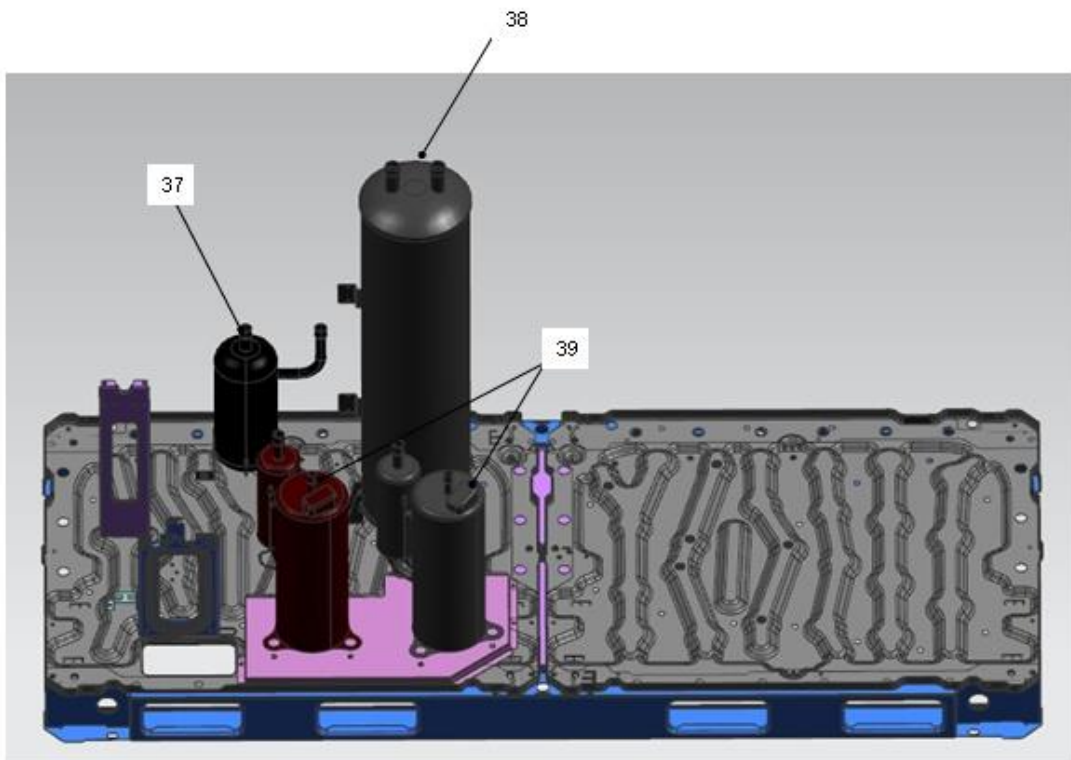
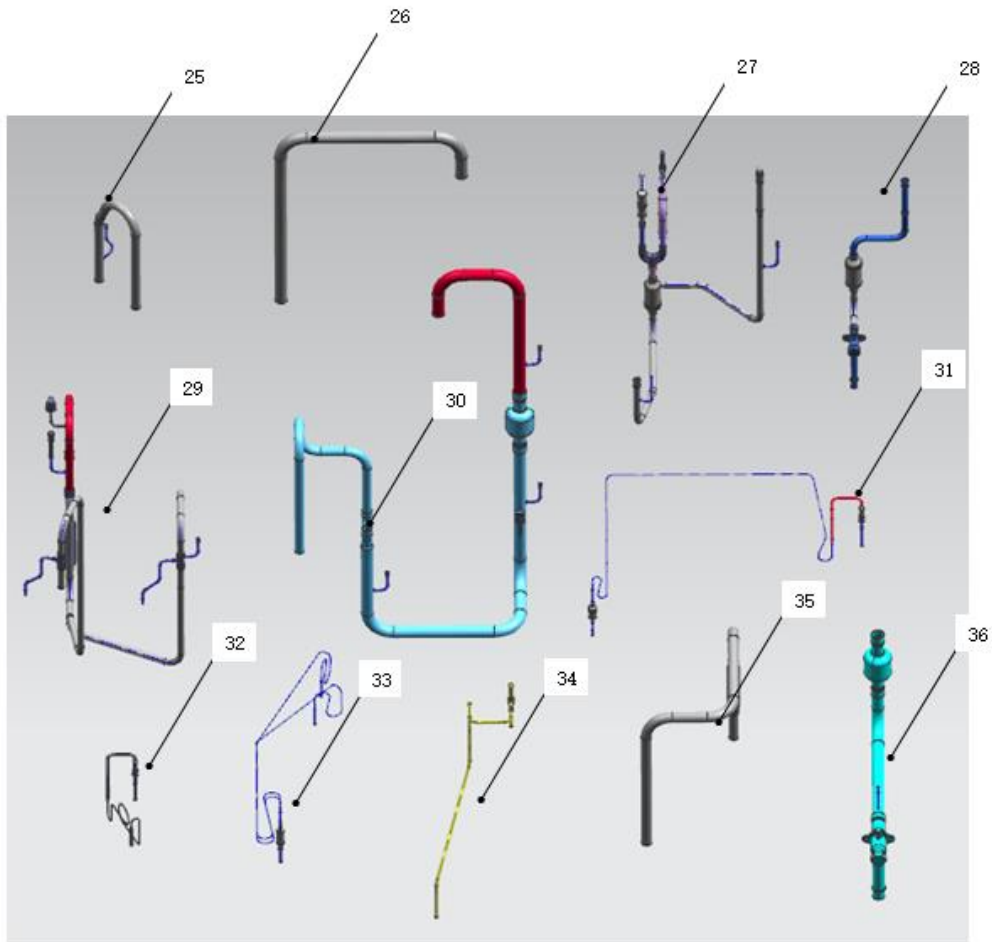


No.	Part Name	Quantity	No.	Part Name	Quantity
1	Top net	1	21.4	IPM module board	1
2	Top cover	1	21.5	Reactor	1
3	Air guide ring assembly	1	21.6	Fan module board assembly	2
4	Air guide ring assembly	2	21.7	Current transformer	1
5.1	Axial flow leaf (three blades)	1	21.8	Refrigerant cooling assembly	1
5.2	Axial flow leaf (four blades)	1	21.9	Fan module heat sink	1
6	Single shaft fan motor	2	21.10	Single phase rectifier bridge	2
7	Fan motor crossbeam	4	22	Electronic box cover	1
8	Back plate	1	23	Check valve assembly	1
9	Rear motor beam support plate assembly	1	24	SV2 Solenoid valve components	1
10	Top crossbeam	2	25	High pressure liquid pipe assembly	1
11	Front motor beam support plate assembly	1	26	Gas-liquid separator takeover assembly	1
12	Front middle column	1	27	Low pressure stop valve assembly	1
13	Electric control box support plate	1	28	Needle valve assembly	1
14	Back net	1	29	SV4 Solenoid valve components	1
15	Right side panel	1	30	High pressure stop valve assembly	1
16	Right side panel	1	31	Oil return capillary components	1
17	Chassis assembly	1	32	Compressor exhaust pipe assembly	1
18	Upper panel	1	33	Compressor suction pipe assembly	1
19	Spot check window assembly	1	34	SV9 Solenoid valve components	1
20	Lower board	1	35	Condenser assembly	1
21	Electronic control components	1	36	Vapour separator	1
21.1	Outdoor main PCB board	1	37	Oil separator	1
21.2	Three-phase filter and fan power board	1	38	Inverter compressor	2
21.3	Communication terminal board	1			

2.10.5 VMEP024-026

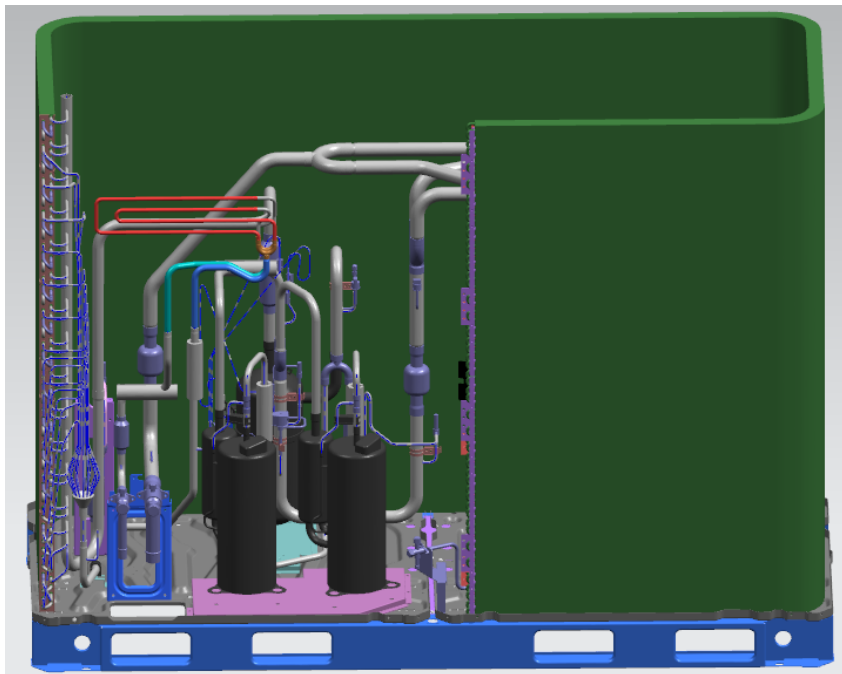
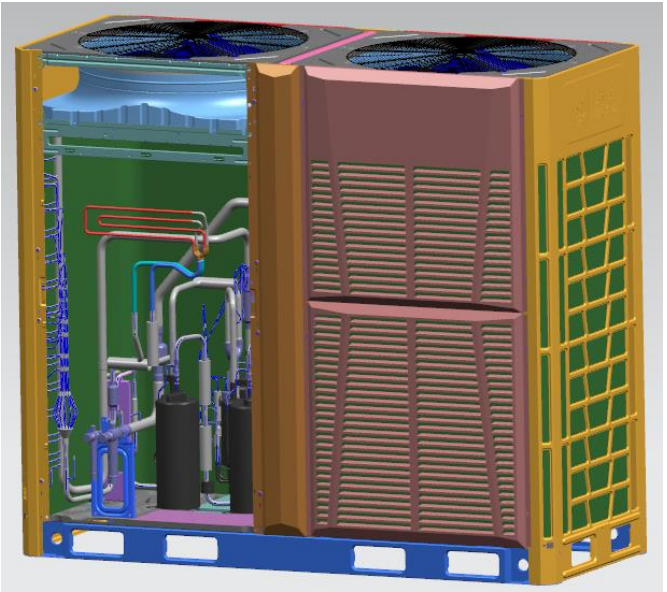
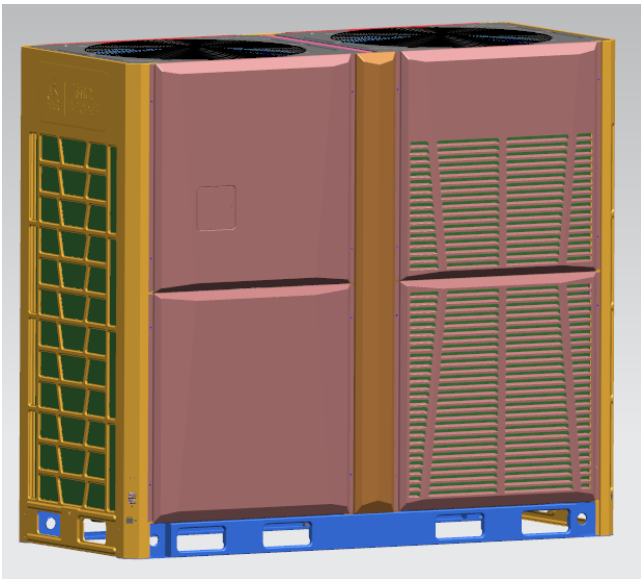


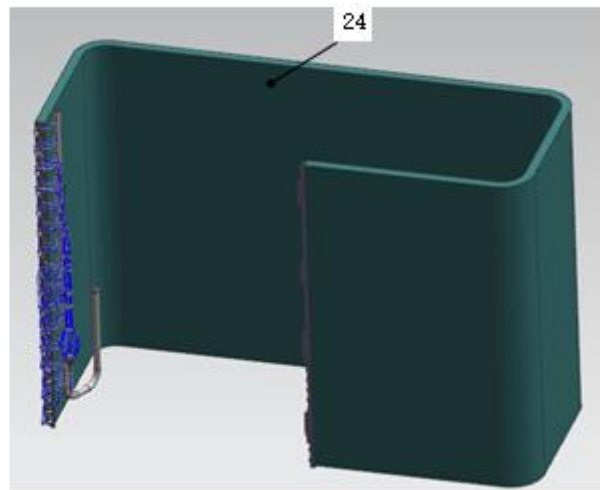
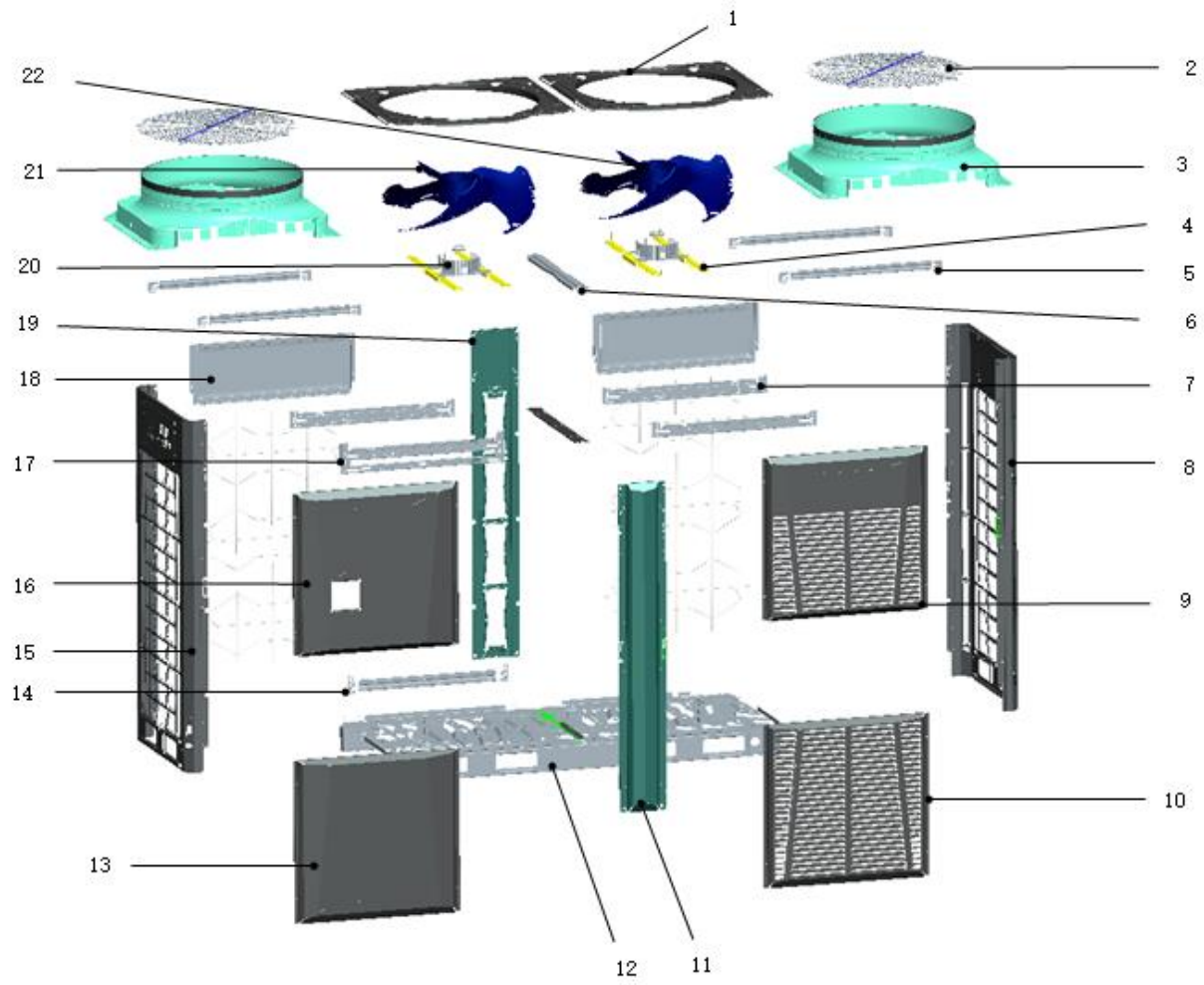


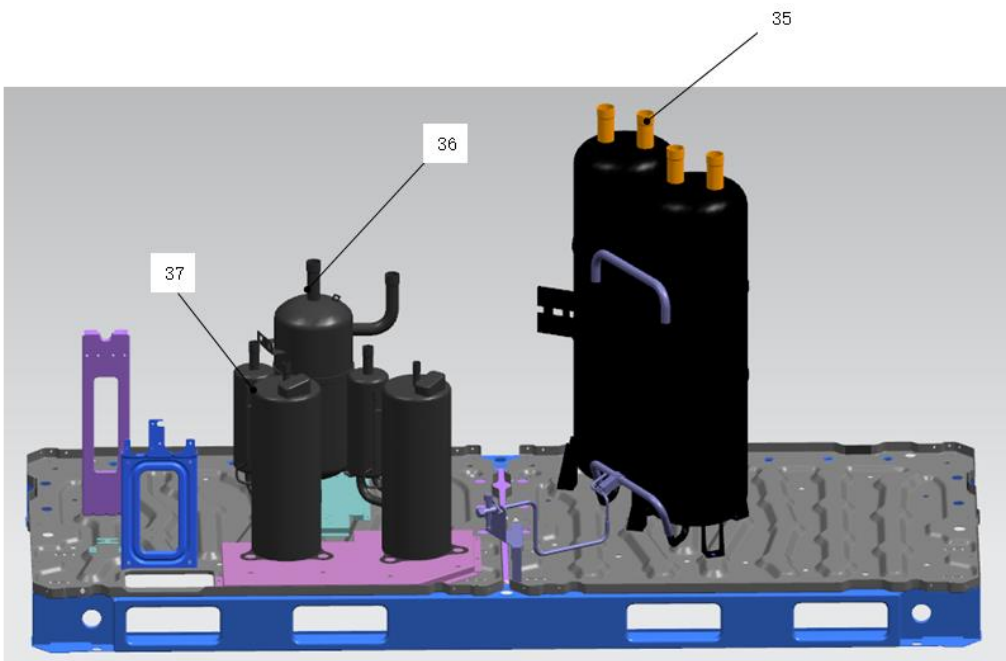
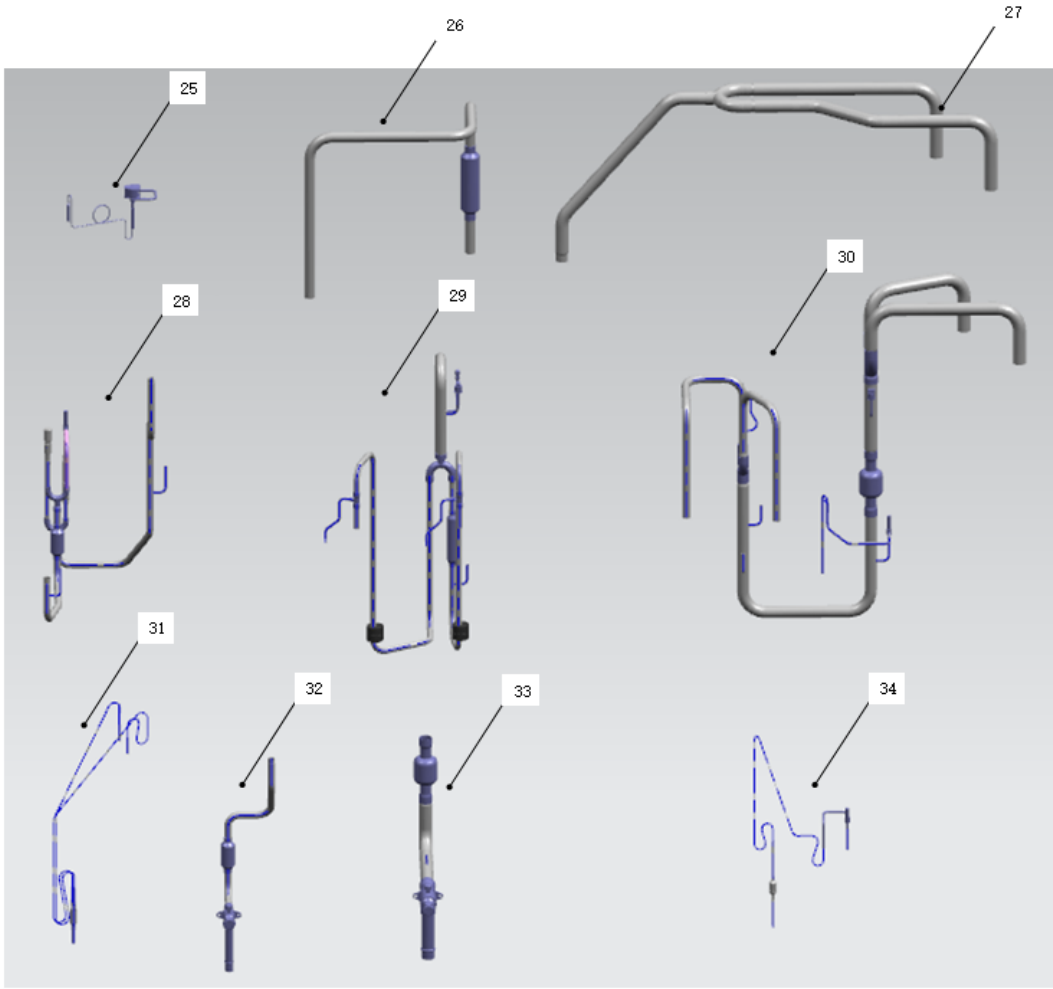


No.	Part Name	Quantity	No.	Part Name	Quantity
1	Top cover	2	23.5	IPM board(HMD3W-8C00/AA55PHDG-D1Y2)	2
2	Top net	2	23.6	Fan motor module board	2
3	Air guide ring assembly	2	23.7	Single-phase rectifier bridge	2
4	Holder for fan motor	4	23.8	Reactor	2
5	Holder for top cover	4	23.9	Fan module heat sink	1
6	Holder for top cover	1	23.10	Refrigerant cooling assembly	1
7	Rear beam support assembly	3	24	Condenser components	1
8	Right side panel assembly	1	25	Compressor suction pipe assembly (Right branch)	1
9	Upper panel	1	26	U type pipe	1
10	Lower panel	1	27	High pressure liquid pipe assembly	1
11	Front-middle post components	1	28	High pressure valve assembly	1
12	Chassis components	1	29	Compressor exhaust components	1
13	Lower panel	1	29.1	high pressure switch	1
14	The lower-holder for electronic control box components	1	30	Compressor suction pipe assembly	1
15	Left side panel assembly	1	30.1	Low pressure switch	1
16	Upper panel	1	31	SV2 Solenoid valve components	1
17	Front-holder components	1	32	SV4 Solenoid valve components	1
18	Back panel	2	33	Oil return capillary comonents	1
19	Back-middle post	1	34	SV9 Solenoid valve components	1
20	DC fan motor	2	35	Check valve assembly	1
21	Axial fan blade	1	36	Low pressure valve assembly	1
22	Axial fan blade	1	37	High pressure sensor	1
23	Electronic control components	1	38	Exhaust temperature sensor-2 pins-red	1
23.1	Current Transformer	2	39	Exhaust temperature sensor-2 pins-white	1
23.2	Outdoor Main PCB	1	40	Ambient temperature sensor-2 pins-white	1
23.3	Filter board(75A)	1	41	Condenser temperature sensor-3 pins-black	1
23.4	Communication terminal board	1	42	Refrigerant cooling pipe temperature sensor-2 pins-black	1

2.10.6 VMEP028







No.	Part Name	Quantity	No.	Part Name	Quantity
1	Top cover	2	23.6	Fan motor module board	2
2	Top net	2	23.7	Single-phase rectifier bridge	2
3	Air guide ring assembly	2	23.8	Reactor	2
4	Holder for fan motor	4	23.9	Fan module heat sink	1
5	Holder for top cover	4	23.10	Refrigerant cooling assembly	1
6	Holder for top cover	1	24	Condenser components	1
7	Rear beam support assembly	3	24.1	Condenser	1
8	Right side panel assembly	1	25	SV4 Solenoid valve components	1
9	Upper panel	1	26	Check valve assembly	1
10	Lower panel	1	27	Gas-liquid separator connection assembly	1
11	Front-middle post components	1	28	High pressure liquid pipe assembly	1
12	Chassis components	1	29	Compressor exhaust components	1
13	Lower panel	1	29.1	High pressure switch	1
14	The lower-holder for electronic control box components	1	30	Compressor suction pipe assembly	1
15	Left side panel assembly	1	30.1	Low pressure switch	1
16	Upper panel	1	31	Oil return capillary comonents	
17	Front-holder components	1	32	High pressure valve assembly	1
18	Back panel	2	33	Low pressure valve assembly	1
19	Back-middle post	1	34	SV2 Solenoid valve components	1
20	DC fan motor	2	35	Gas-liquid separator	2
21	Axial fan blade	1	36	Oil separator	1
22	Axial fan blade	1	37	Inverter compressor LNB65FTGMC	2
23	Electronic control components	1	38	High pressure sensor	1
23.1	Current Transformer	2	39	Exhaust temperature sensor-2 pins-red	1
23.2	Outdoor Main PCB	1	40	Exhaust temperature sensor-2 pins-white	1
23.3	Filter board(60A)	1	41	Ambient temperature sensor-2 pins-white	1
23.4	Communication terminal board	1	42	Condenser temperature sensor-3 pins-black	1
23.5	IPM board	1	43	Refrigerant cooling pipe temperature sensor-2 pins-black	1



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