VMEP-G Series
Full DC Inverter Heat Pump
Technical Manual

380-415V/3/50-60Hz

Content

PART1.

GENERAL INFORMATION

1. Full DC Inverter VMEP introduction
2. Nomenclature
3. Outdoor units

1. CHV Pro introduction

1.1 Basic modules

a) 13 basic modules: VMEP008-009-010-012-014-016-018-020-022-024-026-028-029

b) Modules can be freely combined to become larger unit.

VMEP008-009-010-012-014-016-018-020

VMEP022 VMEP024-026-028-029

1.2 Several core technologies make system high efficiency

1.2.1 High Efficiency DC inverter compressor

- High pressure chamber
  - has small suction refrigerant superheat, refrigerant volume efficiency is high
  - Has large refrigerant discharge buffer volume, Low vibration and noise
- Neodymium permanent magnet rotor, has powerful magnetic force, large torque and high efficiency
- Concentrated winding, improving low frequency efficiency

1.2.2 Full DC inverter compressors technology

- All the compressors in outdoor unit are EVI DC inverter compressors
- Contribute to higher EER and better heating performance in low ambient temperature

1.2.3 High Efficiency DC motor

- High efficiency DC fan motor is from well-known brand
- Low noise and high efficiency because of high-density wire winding engineering
- Brushless with built-in sensor

1.2.4 Stepless Control

- DC fan motor can be stepless controlled by outdoor PCB according to system's operating pressure. And it is able to reduce the energy consumption and maintain the system in the best performance.

1.2.5 180˚ Sine Waveform Control

- The perfect combination of 180˚ Sine waveform rotor frequency drive control technology and excellent IPM inverters reduces the reactive loss of motor-driven, increases motor efficiency by 12%.

1.2.6 CCT Inner-grooved Tube

- CCT (Continuous Cooling Transformation) inner-grooved copper tube has high thermometric conductivity. Its inner-grooved fins break the refrigerant flow boundary layer to enhance refrigerant disturbance to increase heat-exchanging efficiency.

1.2.7 2-in-1 Refrigerant Flow Path Design

- Thanks to the 2-in-1 refrigerant flow path design, the liquid refrigerant volume proportion in the condenser outlet is highly increased, so the indoor unit's will produce more heat (or cool).

1.2.8 Supercooling Flow Path Design.

Supercooling flow path design, separates the refrigerant inlet and outlet, increase the supercooling degree, reduce the effect of high temperature inlet gas refrigerant to low temperature outlet liquid refrigerant, therefore, the system efficiency will be greatly increased.

1.2.9 Refrigerant cooling modular board technically

1.2.10 Cross Flow Fins.

- Has low air resistance and great heat transfer coefficient
- Frosting improved, frost on the heat-exchanger will be well-distributed, easy for defrosting.

1.2.11 New internal structure.

- Thanks to the optimization pipeline design, 5% pressure drop is reduced.
- EER and COP increase, because of evaporating temperature increase and compressor work decrease.

1.3 Benefits for users

1.3.1 Excellent in EER and COP

- Thanks to DC devices(compressor and motor), piping optimization design and new control logic, system's EER and COP are observably increase.

1.3.2 Outstanding comfort ability

- VMEP system have excellent cooling & heating performance, thanks to the high efficiency DC fan motor, DC compressor and optimized refrigerant flow control logic.
- Precisely room temperature control by adopting large pulse EXV. Indoor temperature fluctuation can be maintained within 0.5 ˚C, offers outstanding comfort ability.

1.3.3 Wide operation range.

- Cooling operating temperature is up to 55˚C, suitable for the hot region.
- Heating operating temperature is down to -30˚C. In the cold winter, VMEP system can stably produce heat.

1.3.4 7 improvements to reduce noise

- Maximum 10dB(A) decrease.
- Brushless DC motor
- Streamline air duct design
- Anti-vibration fan blade
- 180˚ Sine Waveform Control
- Circuit Silencer
- Low noise compressor
- Night time silent operation

1.3.5 Silent mode, night time noise control

- Maximum 10dB(A) decrease.

1.3.6 Anti-snow Function

- In the cold weather, outdoor fan will start to run for a while at intervals, for preventing the snow to accumulate on fan blade. Because accumulated snow will freeze and block fan blade rotating, even worse it will damage the motor.
- It only starts when temperature is lower than 0˚C.

1.3.7 All outdoor units cycle operation and Backup function

- In one combination system, any outdoor unit can run as master unit.
- Balance the lifespan among outdoor units in one system.
- 3 backup methods: outdoor module, compressor and fan motor.

1.3.8 Intelligent defrosting program

- Program starts only when unit needs to. Whereas conventional unit's defrosting timing & duration is fixed, causing fluctuations in temperature and personal comfort.

1.3.9 Flexible for all kinds of rooms

- 11 types & 68 models of indoor units, suitable for all kinds of rooms.

1.3.10 Environment friendly

- Refrigerant R410A(HFC), low carbon footprint, no harm to Ozone.

1.3.11 Dust-proof function (Optional)

- Fan motor can be reversed running to blow off the dust on the heat exchanger.

1.3.12 Power saving mode

- In the case of power shortage, VMEP can run power saving mode to ease generator's pressure.

1.4 Benefits for installers

1.4.1 4 unit combination, capacity up to 88HP.

- When large capacity system is needed, VMEP system saves money on piping installation.

1.4.2 Adjustable outdoor fan external static pressure

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

1.4.3 New wired controller

- Bidirectional communication. Indoor unit's operating parameters (error code, temperature, address) can be inquired and displayed on the controller.
- Compact design
- 3" screen with white background light
- Timer function
- Electrical standard dimensions
- User can check the error code and inquiry unit status very easy, safe and convenient.

1.4.4 Addressing methods

- 2 addressing methods:
- Automatically addressing: system will distribute address to indoor unit automatically
- Manually setting by wireless remote controller
- Addressing method can be selected easily by adjusting the switch on outdoor PCB.
- Automatic addressing will reduce artificial faults by 35% and 5% manual works.
    - 54% system failure was caused by communication faults.
    - 65% communication faults were caused by address problems.
    - Most of the address problems were: address setting forgotten, wrong settings, address repeat.

1.4.5 LED display on the PCB

- LED display on the PCB, it can show system's operation status and error codes.

1.4.6 Service window on front cover.

- Thanks to the service window, checking outdoor unit’s status and setting is now easy, no need to remove the front cover.

1.4.7 Mode restriction

- 6 kinds of mode restriction
  - Auto priority mode
  - Cooling (or heating)priority mode
  - Cooling only (or heating only) mode
  - VIP No.63 address &Automatic priority
- Mode restriction function can be selected on the outdoor PCB.

1.4.8 New internal structure.

- All key components are designed to close to outside, it is convenient for repair and replacement.
- Thanks to the new balance technology, gas balance pipe does no longer exist, brazing points and leaking risk are decreased.

1.4.9 Oil control technology

- Core oil control technology makes system safety & reliable.

1.4.10 Heavy duty coating

- The new application method of the anti-corrosion coating significantly improved thickness.
- Special coating can be customized to prevent rusting and spoiling.

1.4.11 3-phase power protector (Optional device)

- Protect the outdoor unit from instable voltage.

1.4.12 Easy installation

- Easy for the outdoor unit to transporting to roof floor by elevator due to its compact size.
- Communication wire length can be up to 1000m.

1.4.13 Use 2-core shielded wire as signal wire

- Saves installation cost.
- Reduces manual works.

1.4.14 Electrical lock function (Optional)

- In case of end user doesn’t pay as contract, electrical lock function can be used to stop VRF system, and end user can not start the system without permission.

1.4.15 One key commissioning

- Thanks to forced cooling/heating button, we can do one key commissioning from outdoor, no need to go inside to turn on indoor units one by one.

1.4.16 E-part adopt Integrated technology

- VMEP adopts integrated circuit control technology, reduce wiring connection and quantity of PCBs, improve the operation reliability and wiring wrongly connection.

1.4.17 Auto charging refrigerant (Optional)

- VMEP can customize with auto refrigerant charging function, additional solenoid valve will be added in gas pipe, and outdoor unit will control the valve to charge refrigerant.

1.4.18 Refrigerant status detection

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

1.5 Doctor Kit (VMEP Maintenance software)

1.5.1 Easy to use and install

- Doctor Kit includes: 1 CD software and RS485-USB converter, easy to install
- Graphical interfaces, easy to use

1.5.2 Data monitoring

- We can use computer to inquiry outdoor unit's operating status, error codes when connecting to Doctor Kit.
- Compressors, sensors, valves operating parameter can be real-time monitored.

1.5.3 System operating curve

- System operating parameter curve can be real-time displayed.

- Commissioning results can be reported.

1.5.4 Troubleshooting

- Built-in with troubleshooting instruction, user can follow the instruction to solve the problem when error happens.
- User can also print out the instruction and take it to site to solve the problem step by step.

1.5.5 Automatic Data Backup

- Automatic Data Backup: all operating data will be saved on hard disk automatically. Data file can be exported easily by software.
- When system failure, user can send the data file to VMEP, Omega engineer will check and guide you to solve the problem.

1.5.6 Useful tools

- Input the liquid pipe diameter and length, software will calculate the additional refrigerant charge volume.
- Charge volume can be saved for future reference.
- Discharge pressure can be monitored when charging refrigerant.

3 Outdoor units

3.1 External appearance

VMEP008(9,10)Q7A	VMEP012(14)Q7A
	
VMEP016(18)Q7A	VMEP020Q7A
	
VMEP022Q7A	VMEP024(26,28,29)Q7A
	
VMEP030(32)Q7A	VMEP034(36,38)Q7A
	

VMEP040Q7A	VMEP042Q7A
	
VMEP044Q7A	VMEP046Q7A
	

VMEP048(50,52)Q7A	VMEP054(56,58,60)Q7A
	
VMEP062Q7A	VMEP064Q7A
	

VMEP066Q7A	VMEP068Q7A
	
VMEP070Q7A	VMEP072Q7A
	

VMEP074Q7A	VMEP076Q7A
	
VMEP078(80,82,84,86,88,90,92)Q7A	
	

3.2Outdoor unit combination table

3.2.1 Three outdoor unit combination table (The max. capacity of single unit is 32HP.)

Recommended combination														Outdoor branch
Capacity	8HP	10HP	12HP	14HP	16HP	18HP	20HP	22HP	24HP	26HP	28HP	30HP	32HP	
VMEP008Q7A	●													/
VMEP009Q7A		●												
VMEP010Q7A			●											
VMEP012Q7A				●										
VMEP014Q7A					●									
VMEP016Q7A						●								
VMEP018Q7A							●							
VMEP020Q7A								●						
VMEP022Q7A									●					
VMEP024Q7A										●				
VMEP026Q7A											●			
VMEP028Q7A												●		
VMEP029Q7A													●	
VMEP030Q7A					●	●								SP-FQG-W2F
VMEP032Q7A						●●								
VMEP034Q7A					●			●						
VMEP036Q7A						●		●						
VMEP038Q7A							●	●						
VMEP040Q7A								●●						
VMEP042Q7A								●	●					
VMEP044Q7A									●●					
VMEP046Q7A								●			●			
VMEP048Q7A									●		●			
VMEP050Q7A									●			●		
VMEP052Q7A									●				●	
VMEP054Q7A										●			●	
VMEP056Q7A											●		●	

Recommended combination														Outdoor branch
Capacity	8HP	10HP	12HP	14HP	16HP	18HP	20HP	22HP	24HP	26HP	28HP	30HP	32HP	
VMEP058Q7A												●	●	SP-FQG-W3F
VMEP060Q7A													●●	
VMEP062Q7A								●●●						
VMEP064Q7A								●●	●					
VMEP066Q7A								●	●●					
VMEP068Q7A								●●			●			
VMEP070Q7A						●					●●			
VMEP072Q7A									●●		●			
VMEP074Q7A								●			●●			
VMEP076Q7A									●		●●			
VMEP078Q7A										●	●●			
VMEP080Q7A											●●●			
VMEP082Q7A											●●	●		
VMEP084Q7A											●●		●	
VMEP086Q7A										●			●●	
VMEP088Q7A											●		●●	
VMEP090Q7A												●	●●	
VMEP092Q7A													●●●	

3.2.2Four outdoor unit combination table (The max. capacity of single unit is 24HP.)

Recommended combination										Outdoor branch
Capacity	8HP	10HP	12HP	14HP	16HP	18HP	20HP	22HP	24HP	
VMEP008Q7A	●									/
VMEP009Q7A		●								
VMEP010Q7A			●							
VMEP012Q7A				●						
VMEP014Q7A					●					
VMEP016Q7A						●				
VMEP018Q7A							●			
VMEP020Q7A								●		
VMEP022Q7A									●	
VMEP024Q7A		●			●					SP-FQG-W2D
VMEP026Q7A		●				●				
VMEP028Q7A			●			●				
VMEP029Q7A		●						●		
VMEP030Q7A					●	●				
VMEP032Q7A						●●				
VMEP034Q7A					●			●		
VMEP036Q7A						●		●		
VMEP038Q7A							●	●		
VMEP040Q7A								●●		
VMEP042Q7A								●	●	
VMEP044Q7A									●●	
VMEP046Q7A			●		●			●		SP-FQG-W3D
VMEP048Q7A			●			●		●		
VMEP050Q7A		●						●●		
VMEP052Q7A			●					●●		
VMEP054Q7A				●				●●		
VMEP056Q7A					●			●●		
VMEP058Q7A						●		●●		
VMEP060Q7A							●	●●		
VMEP062Q7A								●●●		
VMEP064Q7A			●●					●●		SP-FQG-W4D
VMEP066Q7A		●			●			●●		
VMEP068Q7A			●		●			●●		
VMEP070Q7A			●			●		●●		
VMEP072Q7A		●						●●●		
VMEP074Q7A			●					●●●		
VMEP076Q7A				●				●●●		
VMEP078Q7A					●			●●●		
VMEP080Q7A						●		●●●		
VMEP082Q7A							●	●●●		
VMEP084Q7A								●●●●		

Recommended combination										Outdoor branch
Capacity	8HP	10HP	12HP	14HP	16HP	18HP	20HP	22HP	24HP	
VMEP086Q7A								●●●	●	
VMEP088Q7A								●●	●●	
VMEP090Q7A								●	●●●	
VMEP092Q7A									●●●●	

PART 2.

OUTDOOR UNITS

1. Specifications
2. Dimensions
3. Outdoor refrigerant circuit diagram
4. Outdoor unit wiring diagrams and field wiring
5. Operation limits
6. Operation sound levels
7. Outdoor fan performance
8. Functional parts and safety devices
9. Exploded views

1. Specifications

1.1 Outdoor unit

Model name			VMEP008Q7A-G14V252	VMEP009Q7A-G16V280	VMEP010Q7A-G19V335
Performance data					
Cooling	Capacity	HP	8HP	10HP	12HP
		kW	25.2	28	33.5
		Btu/h	86000	95500	114000
		RT	7.2	8	9.5
	Rated current	A	9.04	11.30	14.51
	Power input	kW	5.31	6.22	8.35
	EER	W/W	4.75	4.5	4.01
Heating	Capacity	kW	27.4	31.5	37.5
		Btu/h	93500	107500	128000
		RT	7.8	9	10.7
	Rated current	A	8.93	11.25	14.34
	Power input	kW	4.98	5.86	7.35
	COP	W/W	5.5	5.38	5.1
Max. input consumption		kW	13.4	14.3	14.8
Max. current		A	23.1	24.7	25.5
Capacity adjustment range			50%~130%	50%~130%	50%~130%
Compressor data					
DC Inverter compressor	Quantity		1	1	1
	Type		Scroll Compressor	Scroll Compressor	Scroll Compressor
	Brand		HITACHI	HITACHI	HITACHI
	Running frequency range	Hz	45~420	45~420	45~420
	Rotate speed range	rps	15～140	15～140	15～140
	Crankcase heater	W	35	35	35
Compressor oil	Model		FV-68H	FV-68H	FV-68H
	Original oil volume	ml	1100 per compressor	1100 per compressor	1100 per compressor
	Additional oil volume	ml	5000 per compressor	5000 per compressor	5000 per compressor
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
	Rated speed	rpm	840	840	840
	Power output	W	750	750	750

Fan blade	Material		ABS	ABS	ABS
	Type		Axial	Axial	Axial
	Drive		Direct-driven	Direct-driven	Direct-driven
	Fan Quantity		1	1	1
	Air flow	m^3/h	11000	11000	12000
Physical data					
Outdoor coil	Fin type		Hydrophilic Aluminum	Hydrophilic Aluminum	Hydrophilic Aluminum
	Fin thickness	mm	0.095	0.095	0.095
	Distance between the fins	mm	1.6	1.6	1.6
	Tube outside diameter	mm	Ø7.94	Ø7.94	Ø7.94
	Tube type		Inner-grooved copper tube	Inner-grooved copper tube	Inner-grooved copper tube
Refrigerant	Type		R410a	R410a	R410a
	Volume	kg	9	9	11
	Throttle type		EXV	EXV	EXV
Dimension (W*H*D)	Net	mm	990*1740*840	990*1740*840	990*1740*840
	Packing	mm	1060×1900×910	1060×1900×910	1060×1900×910
Weight	Net	kg	228	228	230
	Gross	kg	240	240	242
Outdoor sound level		dB(A)	58	58	60
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	200	200	200
	From OU to farthest IU(Equivalent length)	m	240	240	240
	From 1st indoor distributor to farthest IU	m	40/90	40/90	40/90
Max. vertical length	Between OU & IU(OU above IU)	m	100	100	100
	Between OU & IU(OU below	m	110	110	110

	IU)				
	Between IUs	m	40	40	40
	Between OUs	m	0	0	0
Connection wire	Power wire size	mm^2	6*5(L≤20m)	6*5(L≤20m)	6*5(L≤20m)
			10*5(20m<L≤50m)	10*5(20m<L≤50m)	10*5(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	-5~55	-5~55	-5~55
	Indoor side	°C	16~32	16~32	16~32
Heating	Outdoor side	°C	-30~30	-30~30	-30~30
	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 110Pa outdoor ESP can be set on outdoor PCB.

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

1.2 Outdoor unit

Model name			VMEP012Q7A-G23V400	VMEP014Q7A-G26V450	VMEP016Q7A-G29V500
Performance data					
Cooling	Capacity	HP	14HP	16HP	18HP
		kW	40	45	50
		Btu/h	136500	153500	170600
		RT	11.4	12.8	14.2
	Rated current	A	18.10	21.60	23.29
	Power input	kW	9.76	11.63	12.22
	EER	W/W	4.1	3.87	4.09
Heating	Capacity	kW	45	50	56
		Btu/h	153500	170600	191000
		RT	12.8	14.2	16
	Rated current	A	18.00	20.25	22.61
	Power input	kW	9.34	10.87	11.89
	COP	W/W	4.82	4.6	4.71
Max. input consumption		kW	18.3	18.8	22.0
Max. current		A	30.8	31.7	37.4
Capacity adjustment range			50%~130%	50%~130%	50%~130%
Compressor data					
DC Inverter compressor	Quantity		1	1	1
	Type		Scroll Compressor	Scroll Compressor	Scroll Compressor
	Brand		HITACHI	HITACHI	HITACHI
	Running frequency range	Hz	30~390	30~390	30~390
	Rotate speed range	rps	10～130	10～130	10～130
	Crankcase heater	W	40	40	40
Compressor oil	Model		FV-68H	FV-68H	FV-68H
	Original oil volume	ml	1100 per compressor	1100 per compressor	1100 per compressor
	Additional oil volume	ml	6000 per compressor	6000 per compressor	6000 per compressor
Fan data					
Fan motor	Type		DC	DC	DC
	Model		DR-310-920-8	DR-310-920-8	DR-310-560-8-1
	Quantity		1	1	2
	Insulation class		B	B	B
	Rated speed	rpm	920	920	880
	Power output	W	920	920	560*2
Fan blade	Material		ABS	ABS	ABS

	Type		Axial	Axial	Axial
	Drive		Direct-driven	Direct-driven	Direct-driven
	Fan Quantity		1	1	2
	Air flow	m^3/h	14000	14000	16000
Physical data					
Outdoor coil	Fin type		Hydrophilic Aluminum	Hydrophilic Aluminum	Hydrophilic Aluminum
	Fin thickness	mm	0.095	0.095	0.095
	Distance between the fins	mm	1.6	1.6	1.6
	Tube outside diameter	mm	Ø7.94	Ø7.94	Ø7.94
	Tube type		Inner-grooved copper tube	Inner-grooved copper tube	Inner-grooved copper tube
Refrigerant	Type		R410a	R410a	R410a
	Volume	kg	14	14	15
	Throttle type		EXV	EXV	EXV
Dimension (W*H*D)	Net	mm	1340*1740*840	1340*1740*840	1340*1740*840
	Packing	mm	1410×1900×910	1410×1900×910	1410×1900×910
Weight	Net	kg	275	275	285
	Gross	kg	293	293	303
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	Ø15.88	Ø15.88	Ø15.88
	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	40/90	40/90	40/90
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	10*5(L≤20m)	10*5(L≤20m)	16*5(L≤20m)
			16*5(20m<L≤50m)	16*5(20m<L≤50m)	25*5(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	-5~55	-5~55	-5~55
	Indoor side	°C	16~32	16~32	16~32
Heating	Outdoor side	°C	-30~30	-30~30	-30~30
	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 110Pa outdoor ESP can be set on outdoor PCB.

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

1.3 Outdoor unit

Model name			VMEP018Q7A-G33V560	VMEP020Q7A-G36V615	VMEP022Q7A-G39V670
Performance data					
Cooling	Capacity	HP	20HP	22HP	24HP
		kW	56	61.5	67
		Btu/h	191000	209800	228600
		RT	16	17.5	19.1
	Rated current	A	26.10	29.06	29.09
	Power input	kW	14.66	16.62	16.71
	EER	W/W	3.82	3.70	4.01
Heating	Capacity	kW	63	69	75
		Btu/h	214900	235400	255900
		RT	18	19.7	21.3
	Rated current	A	25.70	28.40	28.65
	Power input	kW	14.16	16.80	14.72
	COP	W/W	4.45	4.11	5.10
Max. input consumption		kW	24.4	25.0	26.2
Max. current		A	41.1	42.1	43.2
Capacity adjustment range			50%~130%	50%~130%	50%~130%
Compressor data					
DC Inverter compressor	Quantity		1	1	2
	Type		Scroll Compressor	Scroll Compressor	Scroll Compressor
	Brand		HITACHI	HITACHI	HITACHI
	Running frequency range	Hz	30~390	30~390	45～420
	Rotate speed range	rps	10～130	10～130	15～140
	Crankcase heater	W	40	40	35*2
Compressor oil	Model		FV-68H	FV-68H	FV68H
	Original oil volume	ml	1100 per compressor	1100 per compressor	1100 per compressor
	Additional oil volume	ml	7000 per compressor	7000 per compressor	3500 per compressor
Fan data					
Fan motor	Type		DC	DC	DC
	Model		DR-310-560-8-1	DR-310-560-8-1	DR-310-750-8-1
	Quantity		2	2	2
	Insulation class		B	B	B
	Rated speed	rpm	880	880	840
	Power output	W	560*2	560*2	750*2
Fan blade	Material		ABS	ABS	ABS

	Type		Axial	Axial	Axial
	Drive		Direct-driven	Direct-driven	Direct-driven
	Fan Quantity		2	2	2
	Air flow	m^3/h	16000	16000	25000
Physical data					
Outdoor coil	Fin type		Hydrophilic Aluminum	Hydrophilic Aluminum	Hydrophilic Aluminum
	Fin thickness	mm	0.095	0.095	0.095
	Distance between the fins	mm	1.6	1.6	1.6
	Tube outside diameter	mm	Ø7.94	Ø7.94	Ø7.94
	Tube type		Inner-grooved copper tube	Inner-grooved copper tube	Inner-grooved copper tube
Refrigerant	Type		R410a	R410a	R410a
	Volume	kg	16	16	16
	Throttle type		EXV	EXV	EXV
Dimension (W*H*D)	Net	mm	1340*1740*840	1340*1740*840	1990*1740*840
	Packing	mm	1410×1900×910	1410×1900×910	2060×1900×910
Weight	Net	kg	290	297	388
	Gross	kg	308	315	406
Outdoor sound level		dB(A)	63	63	62
Maximum operating pressure		MPa	4.5	4.5	4.5
Piping & wiring data					
Pipe size	Liquid pipe	mm	Ø15.88	Ø15.88	Ø15.88
	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	40/90	40/90	40/90
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)	16*5(L≤20m)
			25*5(20m<L≤50m)	25*5(20m<L≤50m)	25*5(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	-5~55	-5~55	-5~55
	Indoor side	°C	16~32	16~32	16~32
Heating	Outdoor side	°C	-30~30	-30~30	-30~30
	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 110Pa outdoor ESP can be set on outdoor PCB.

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

1.4 Outdoor unit

Model name			**VMEP024Q7A-G43V730**	**VMEP026Q7A-G46V785**	**VMEP028Q7A-G50V850**	**VMEP029Q7A-G50V900**
Performance data						
Cooling	Capacity	HP	26HP	28HP	30HP	32HP
		kW	73	78.5	85	90
		Btu/h	249100	267800	290000	307100
		RT	20.8	22.3	24.2	25.6
	Rated current	A	32.59	36.13	40.36	44.73
	Power input	kW	18.18	20.03	22.37	24.79
	EER	W/W	4.02	3.92	3.80	3.63
Heating	Capacity	kW	81.5	87.5	95	100
		Btu/h	278100	298600	324100	341200
		RT	23.2	24.88	27.0	28.4
	Rated current	A	30.28	33.38	38.52	43.90
	Power input	kW	16.78	18.50	21.35	24.33
	COP	W/W	4.86	4.73	4.45	4.11
Max. input consumption		kW	30.1	30.7	35.8	37.7
Max. current		A	50.8	51.8	60.4	63.6
Capacity adjustment range			50%~130%	50%~130%	50%~130%	50%~130%
Compressor data						
DC Inverter compressor	Quantity		2	2	1+1	1+1
	Type		Scroll Compressor	Scroll Compressor	Scroll Compressor	Scroll Compressor
	Brand		HITACHI	HITACHI	HITACHI	HITACHI
	Running frequency range	Hz	45～420	45～420	45～420 / 30～390	45～420 / 30～390
	Rotate speed range	rps	15～140	15～140	15～140 / 10～130	15～140 / 10～130
	Crankcase heater	W	35*2	35*2	35+40	35+40
Compressor oil	Model		FV68H	FV68H	FV68H	FV68H
	Original oil volume	ml	1100 per compressor	1100 per compressor	1100 per compressor	1100 per compressor
	Additional oil volume	ml	5000 per compressor	5000 per compressor	5000 per compressor	5000 per compressor
Fan data						
Fan motor	Type		DC	DC	DC	DC
	Model		DR-310-920-8	DR-310-920-8	DR-310-920-8	DR-310-920-8

	Quantity		2	2	2	2
	Insulation class		B	B	B	B
	Rated speed	rpm	920	920	920	920
	Power output	W	920*2	920*2	920*2	920*2
Fan blade	Material		ABS	ABS	ABS	ABS
	Type		Axial	Axial	Axial	Axial
	Drive		Direct-driven	Direct-driven	Direct-driven	Direct-driven
	Fan Quantity		2	2	2	2
	Air flow	m^3/h	25000	25000	24000	24000
Physical data						
Outdoor coil	Fin type		Hydrophilic Aluminum	Hydrophilic Aluminum	Hydrophilic Aluminum	Hydrophilic Aluminum
	Fin thickness	mm	0.095	0.095	0.095	0.095
	Distance between the fins	mm	1.6	1.6	1.6	1.6
	Tube outside diameter	mm	Ø7.94	Ø7.94	Ø7.94	Ø7.94
	Tube type		Inner-grooved copper tube	Inner-grooved copper tube	Inner-grooved copper tube	Inner-grooved copper tube
Refrigerant	Type		R410a	R410a	R410a	R410a
	Volume	kg	20	20	23	23
	Throttle type		EXV	EXV	EXV	EXV
Dimension (W*H*D)	Net	mm	1990*1740*840	1990*1740*840	1990*1740*840	1990*1740*840
	Packing	mm	2060×1900×910	2060×1900×910	2060×1900×910	2060×1900×910
Weight	Net	kg	433	433	480	480
	Gross	kg	452	452	498	498
Outdoor sound level		dB(A)	63	63	64	64
Maximum operating pressure		MPa	4.5	4.5	4.5	4.5
Piping & wiring data						
Pipe size	Liquid pipe	mm	Ø22.2	Ø22.2	Ø22.2	Ø22.2
	Gas pipe	mm	Ø35	Ø35	Ø35	Ø35
Max. pipe length	Total pipe length	m	1000	1000	1000	1000
	From OU to farthest	m	200	200	200	200

	IU(Actual length)					
	From OU to farthest IU(Equivalent length)	m	240	240	240	240
	From 1st indoor distributor to farthest IU	m	40/90	40/90	40/90	40/90
Max. vertical length	Between OU & IU(OU above IU)	m	100	100	100	100
	Between OU & IU(OU below IU)	m	110	110	110	110
	Between IUs	m	40	40	40	40
	Between OUs	m	0	0	0	0
Connection wire	Power wire size	mm^2	16*5(L≤20m)	16*5(L≤20m)	25*5(L≤20m)	25*5(L≤20m)
			25*5(20m<L≤50m)	25*5(20m<L≤50m)	35*5(20m<L≤50m)	35*5(20m<L≤50m)
	Signal wire type		2-core shielded cable	2-core shielded cable	2-core shielded cable	2-core shielded cable
	Signal wire size	mm^2	0.75	0.75	0.75	0.75
Operation temperature range						
Cooling	Outdoor side	°C	-5~55	-5~55	-5~55	-5~55
	Indoor side	°C	16~32	16~32	16~32	16~32
Heating	Outdoor side	°C	-30~30	-30~30	-30~30	-30~30
	Indoor side	°C	16~32	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.

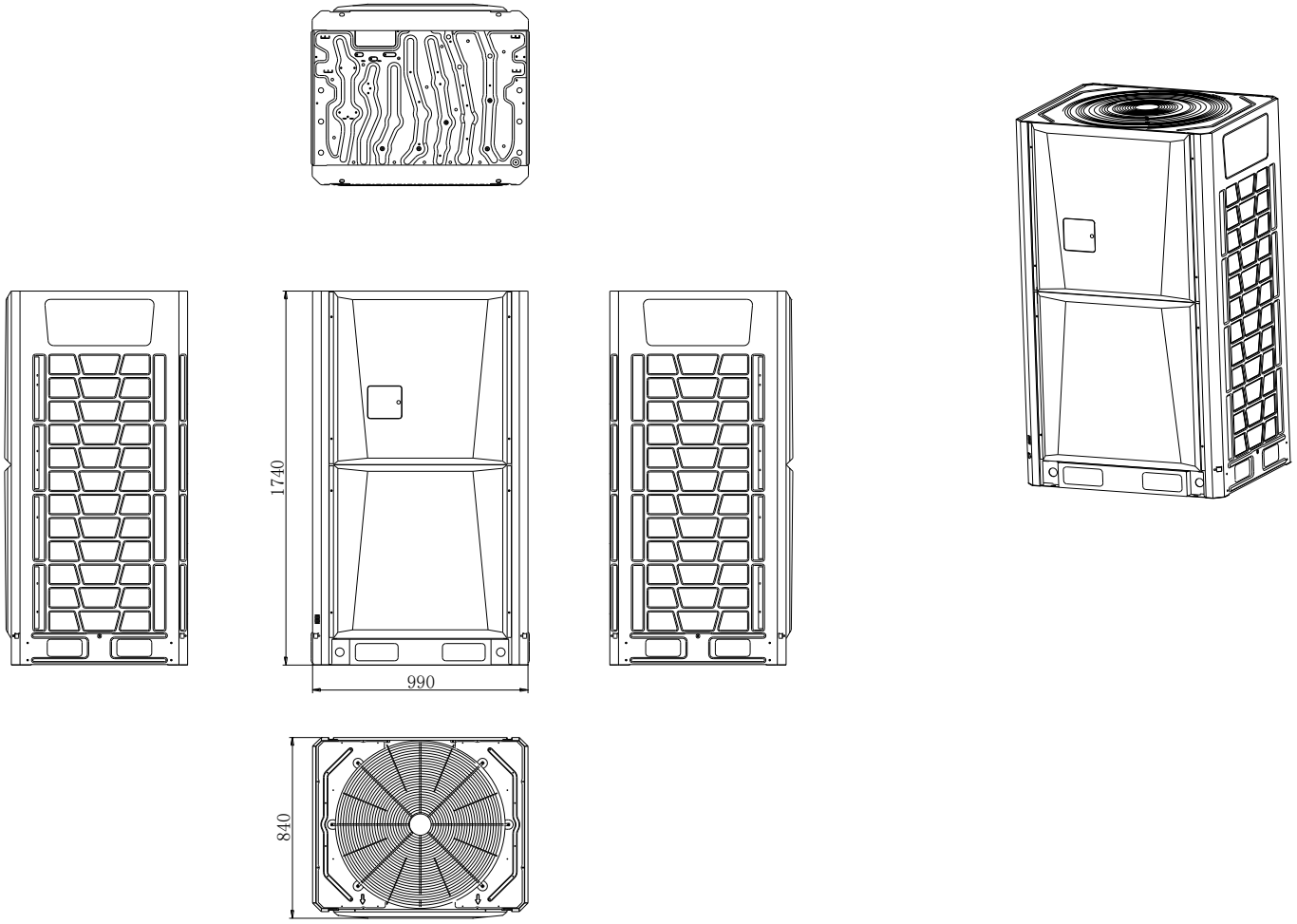
Sound level: Anechoic chamber conversion value, measured at a point 1 m in front of the unit at a height of 1.3 m. During actual operation, these values are normally somewhat higher as a result of ambient conditions.

Maximum 110Pa outdoor ESP can be set on outdoor PCB.

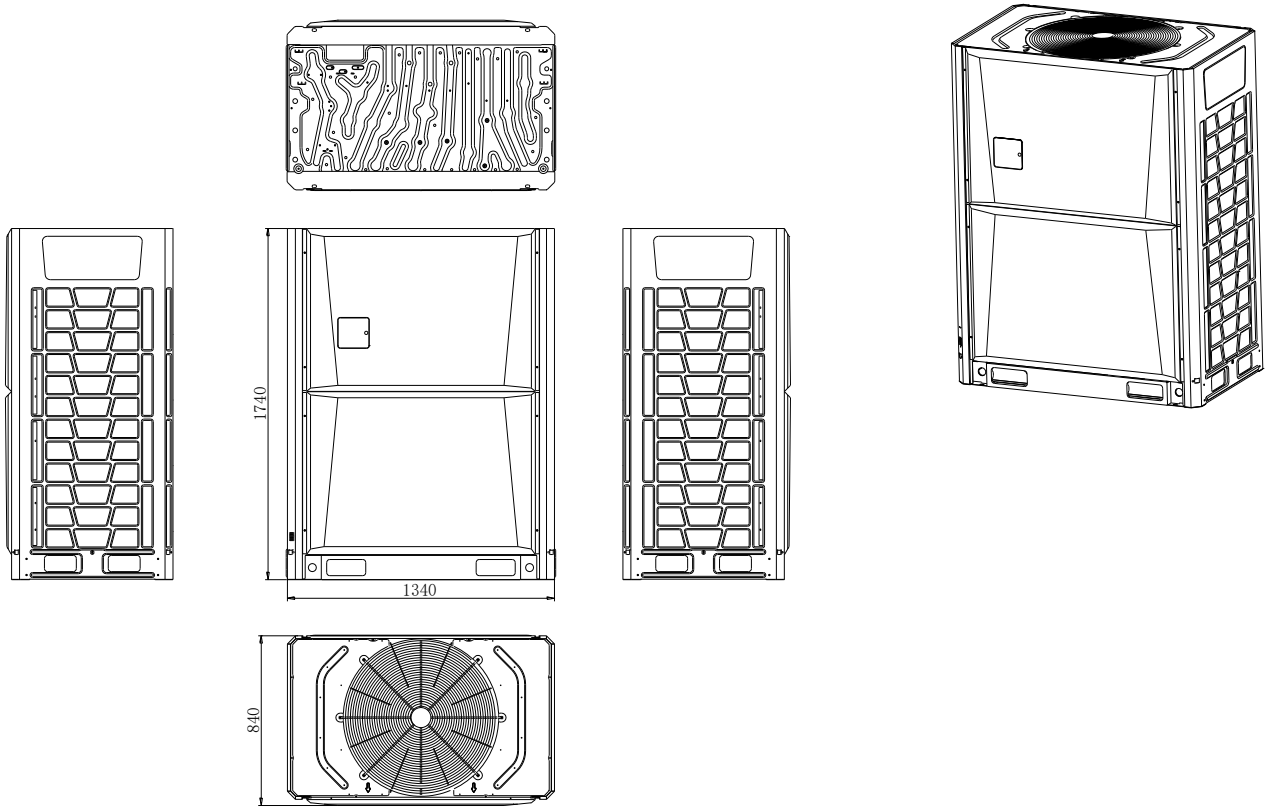
The above data may be changed without notice for future improvement on quality and performance.

2. Dimensions

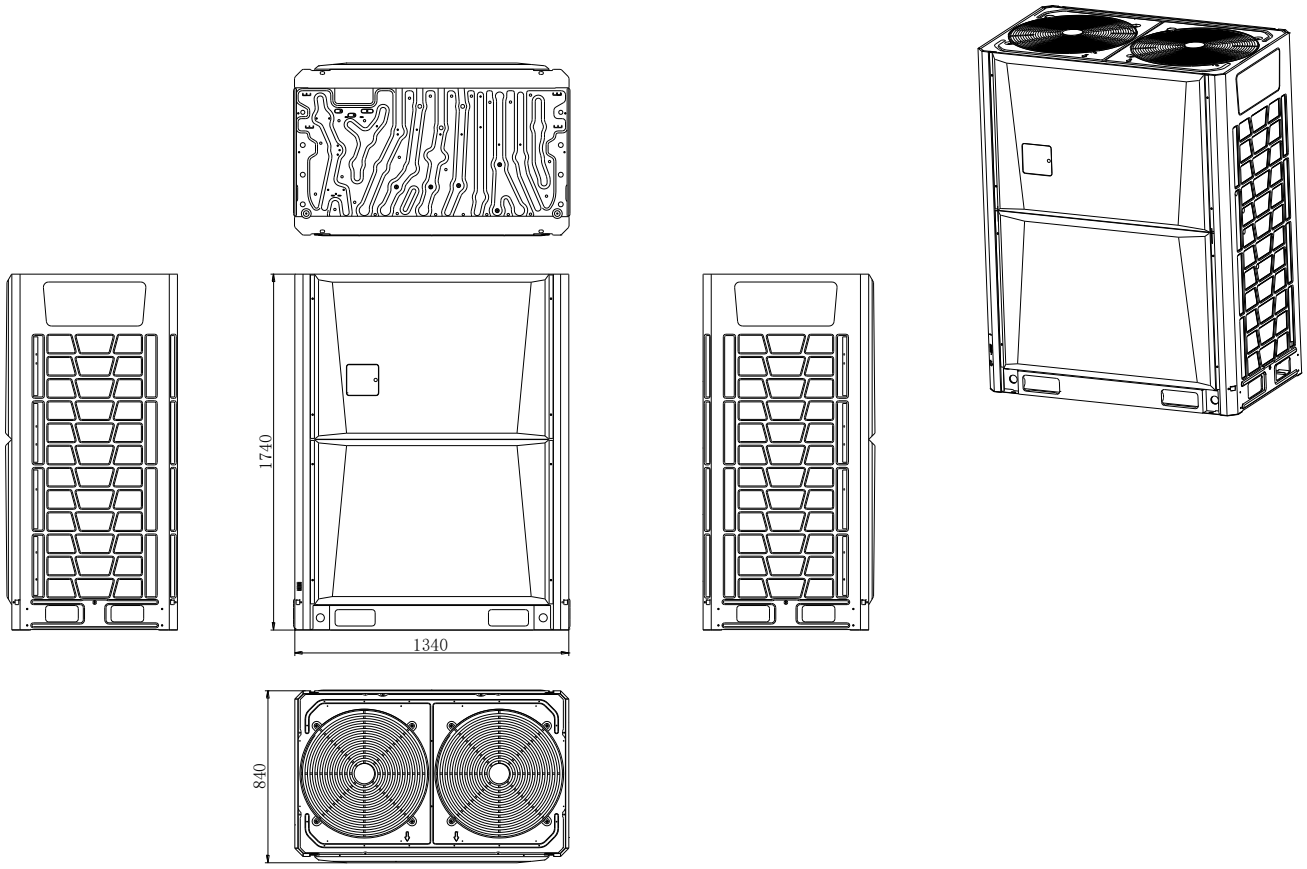
2.1 VMEP008(9,10)Q7A



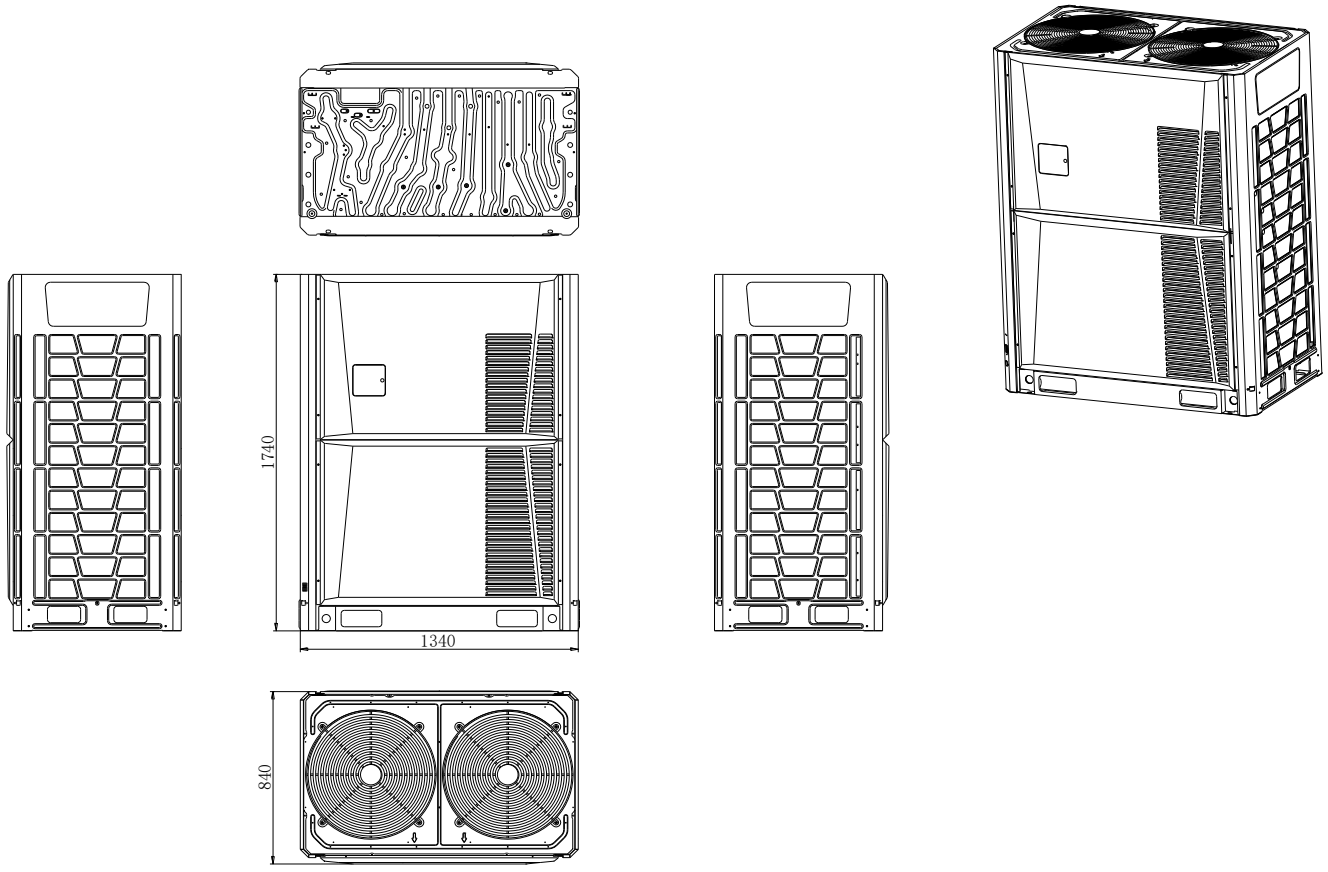
2.2 VMEP012(14)Q7A



2.3 VMEP016(18)Q7A



2.4 VMEP020Q7A



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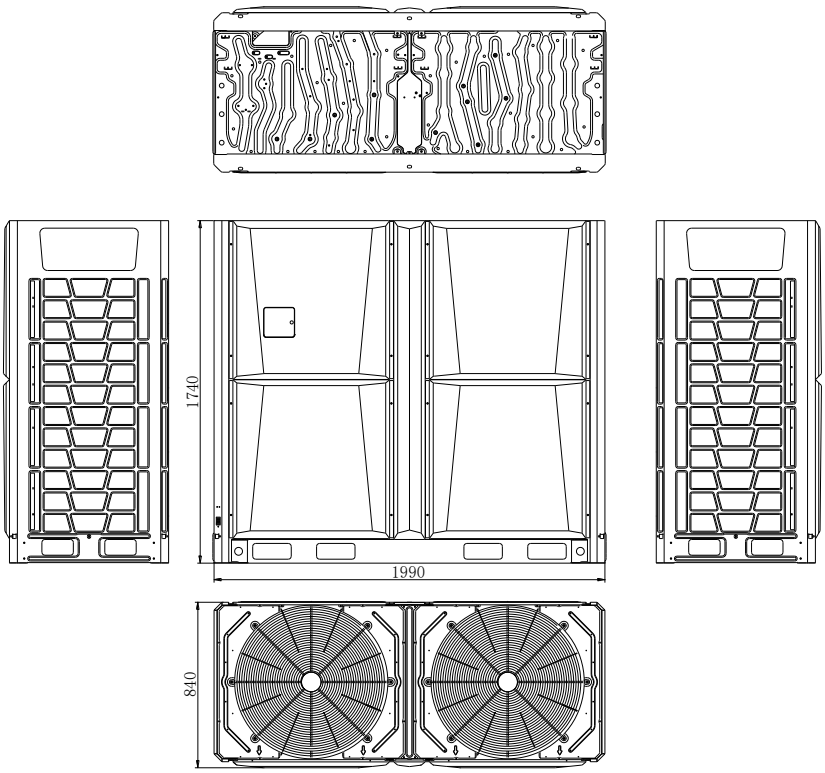
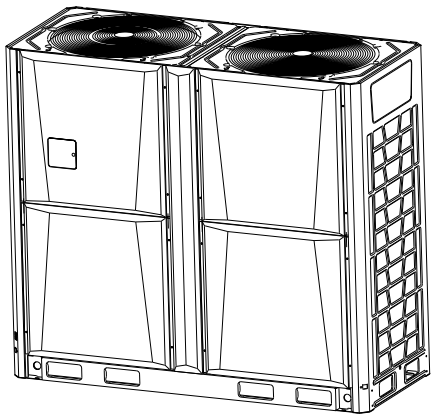
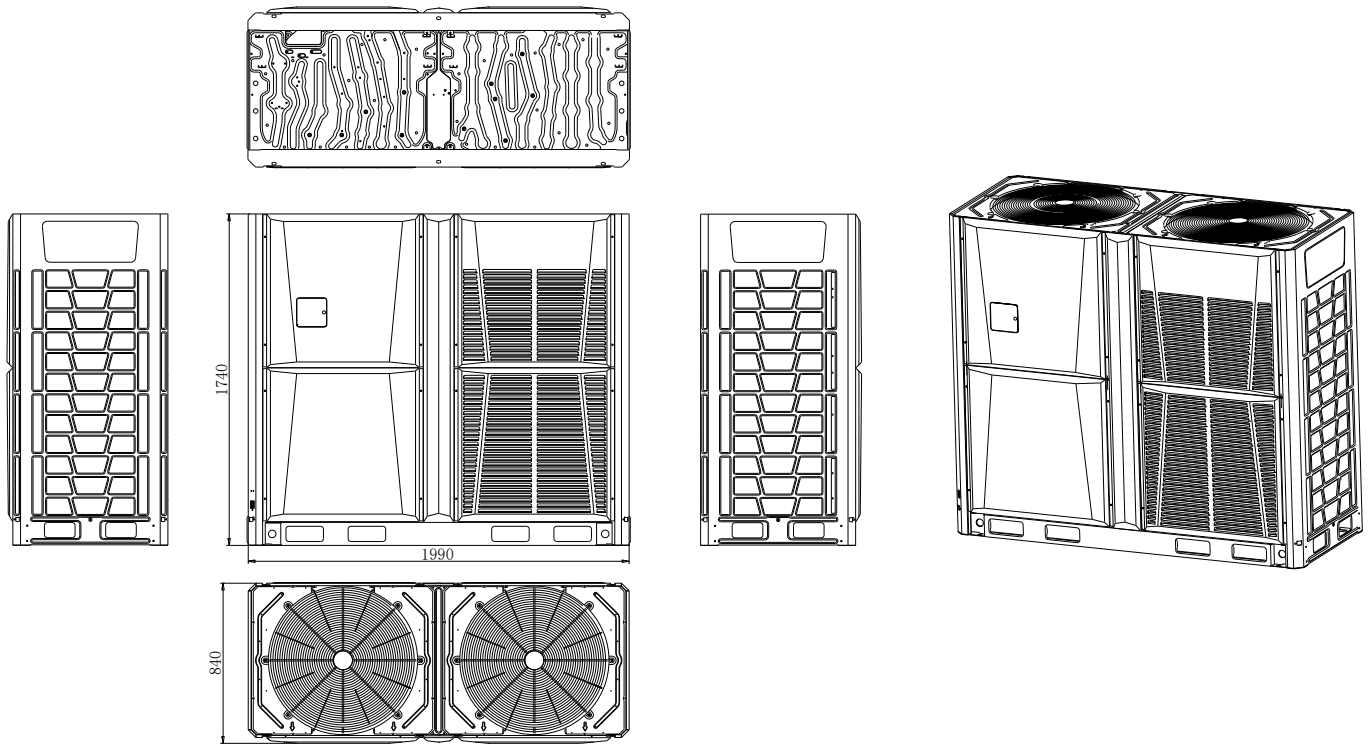
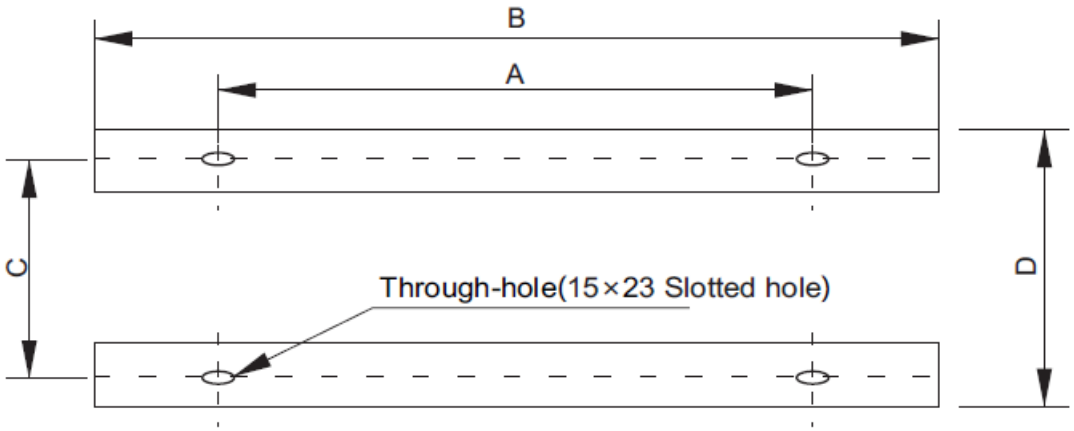




2.6 VMEP024(26 ,28,29)Q7A

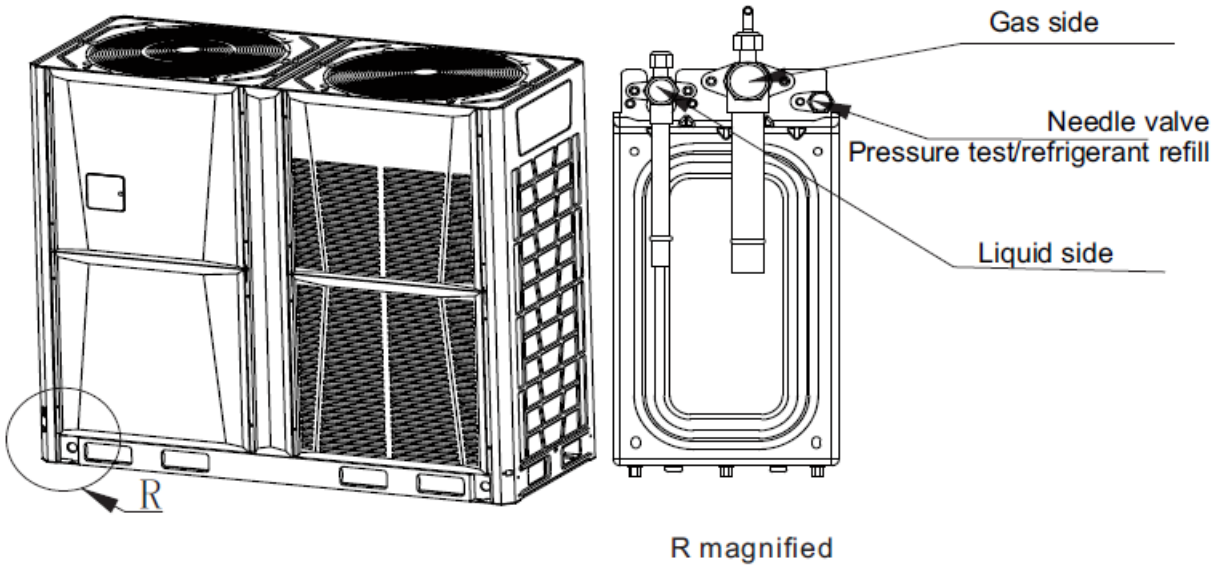


2.7 Installation base dimension



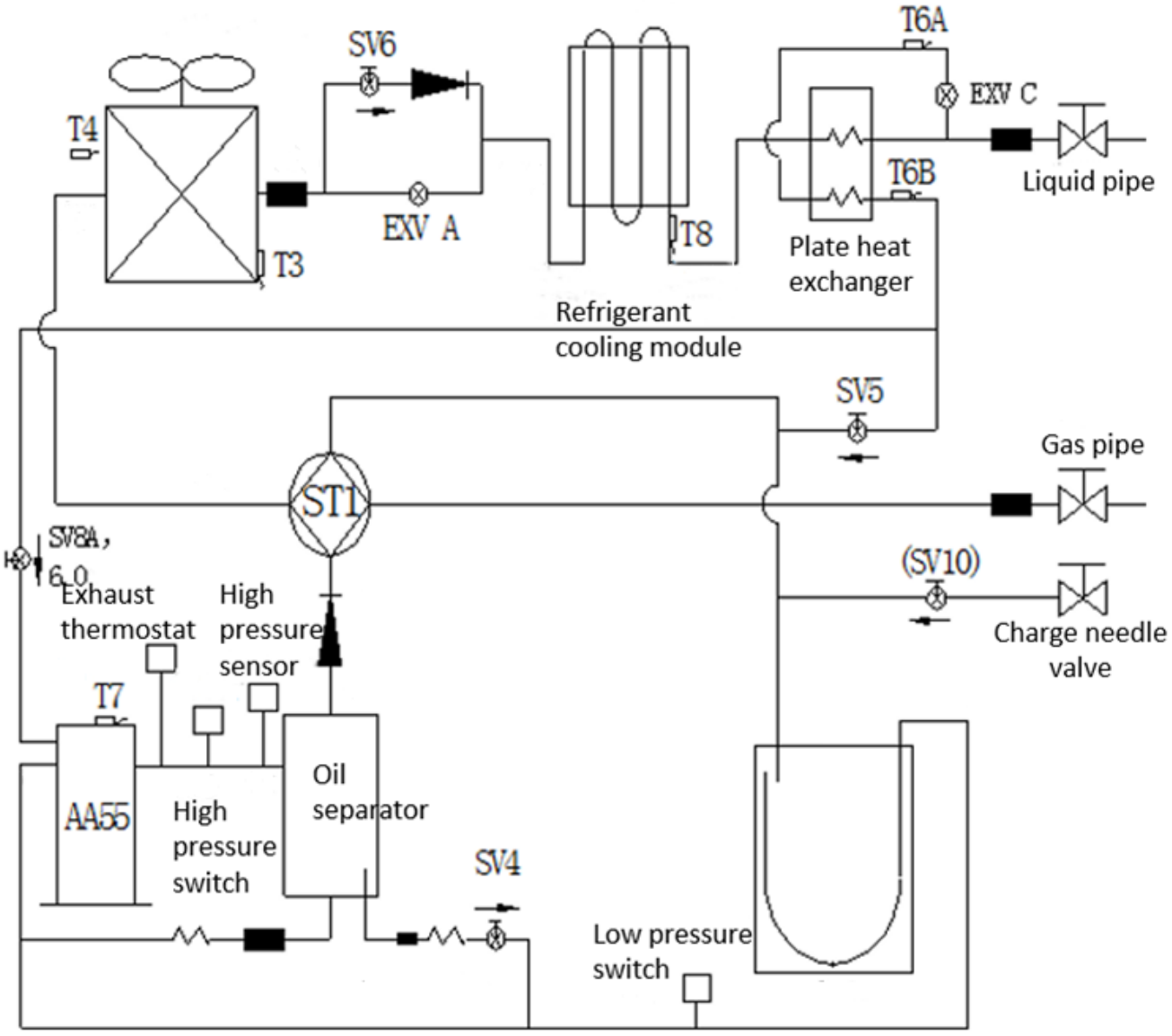
Size \ Type	8HP~12HP	14HP~22HP	24HP~32HP
A	720mm	1070mm	1720mm
B	1040mm	1390mm	2060mm
C	774mm	774mm	774mm
D	850mm	850mm	850mm

2.8Valve explanation



3. Outdoor refrigerant circuit diagram

3.1 VMEP008(9,10)Q7A



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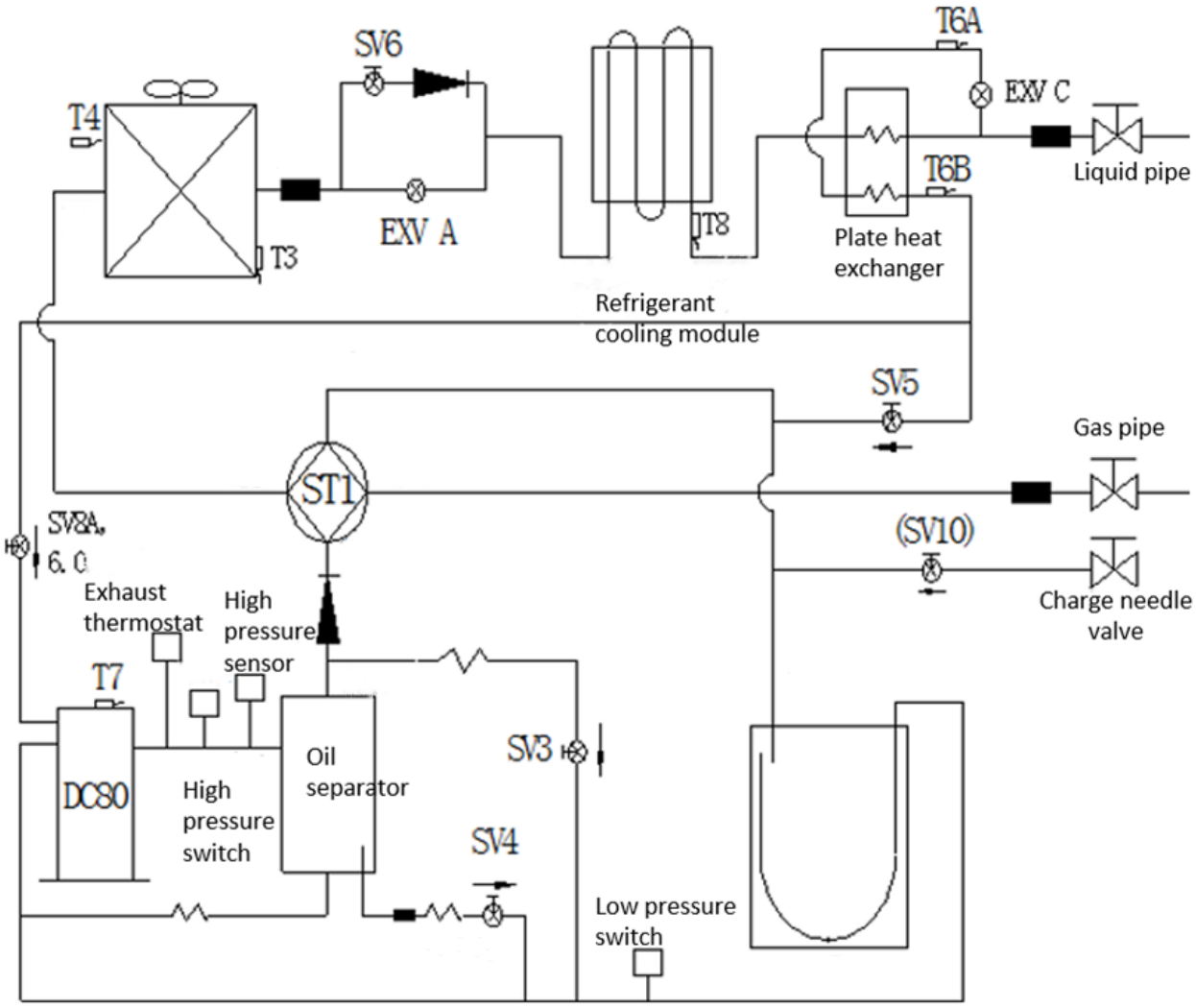

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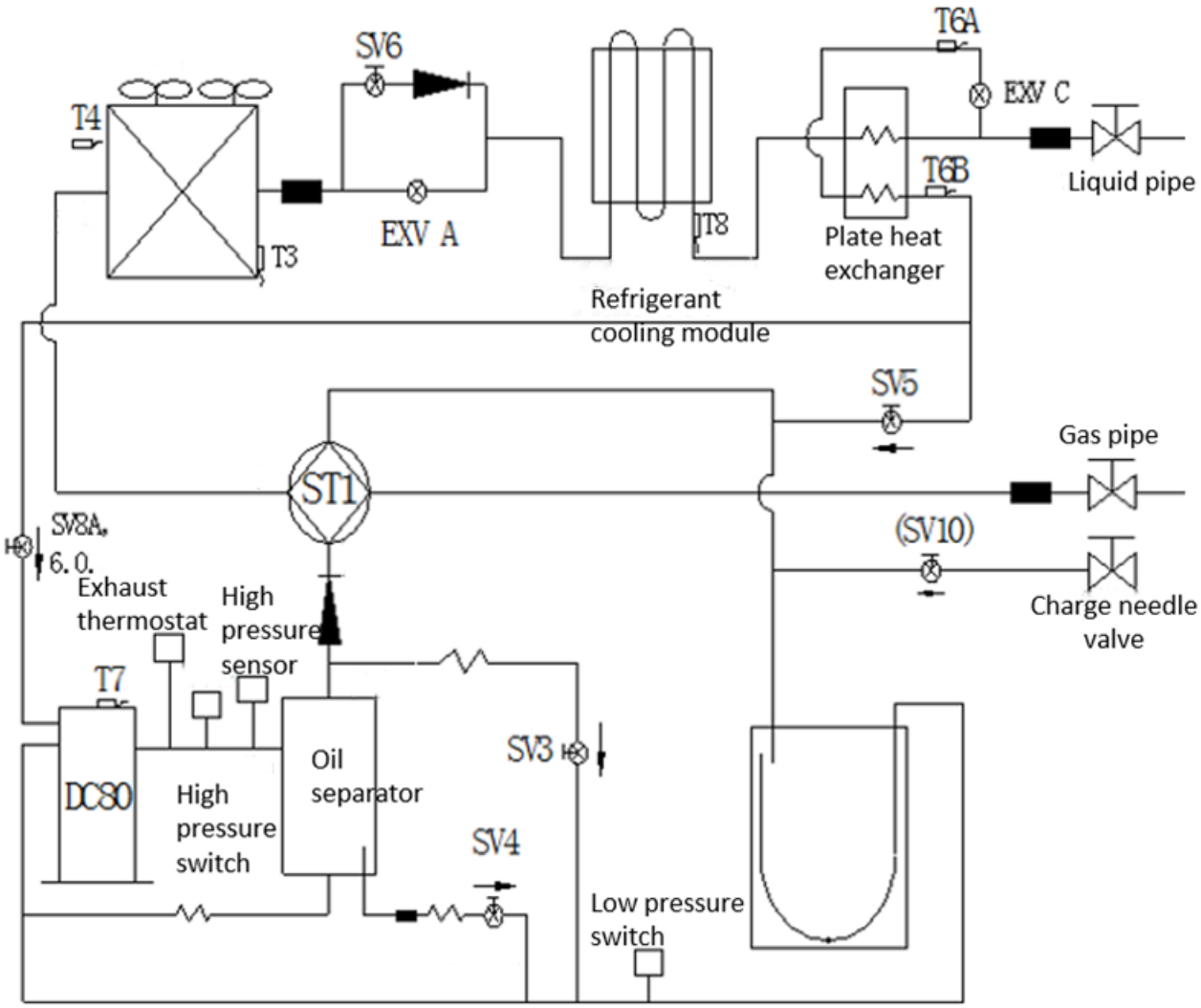

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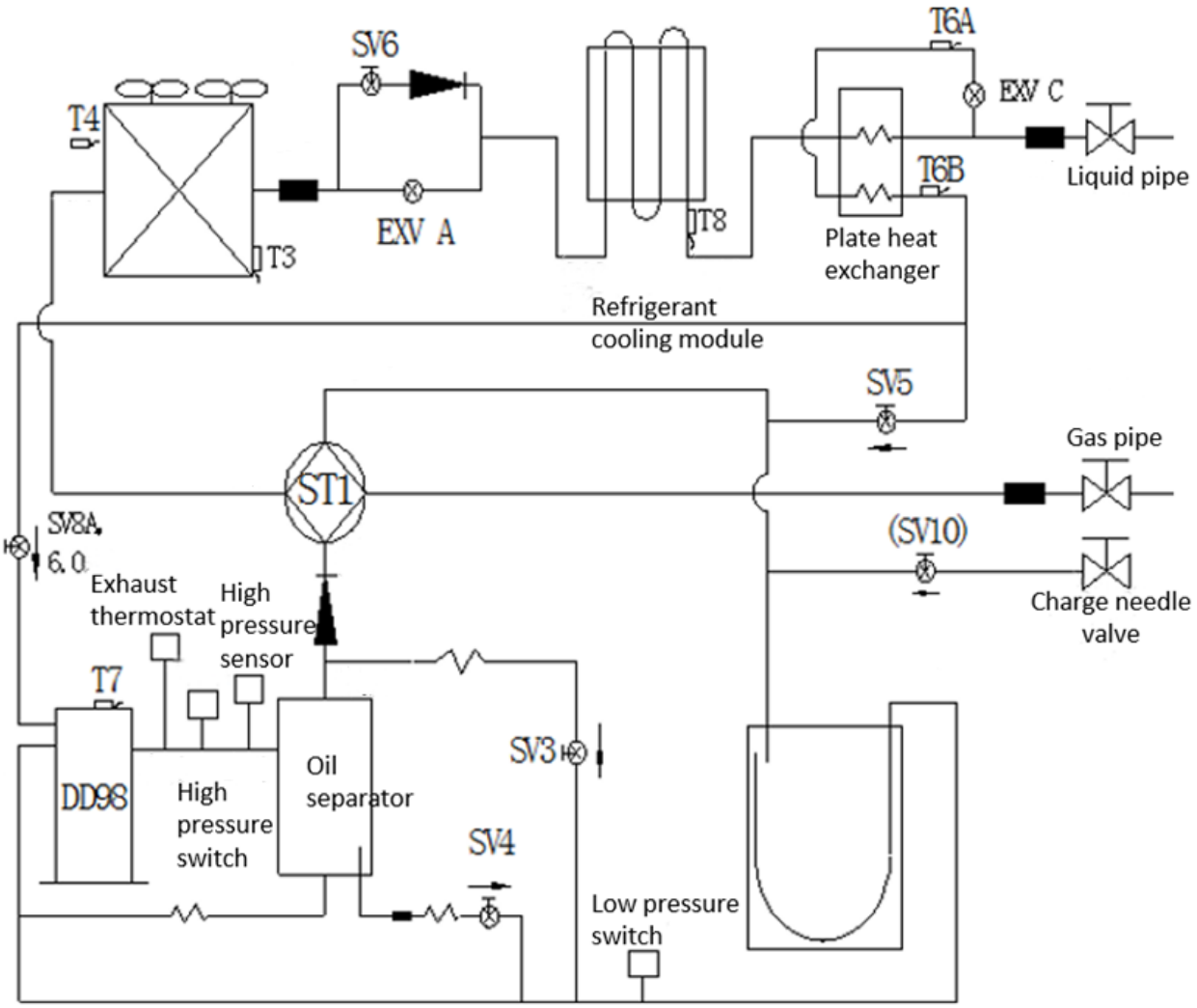
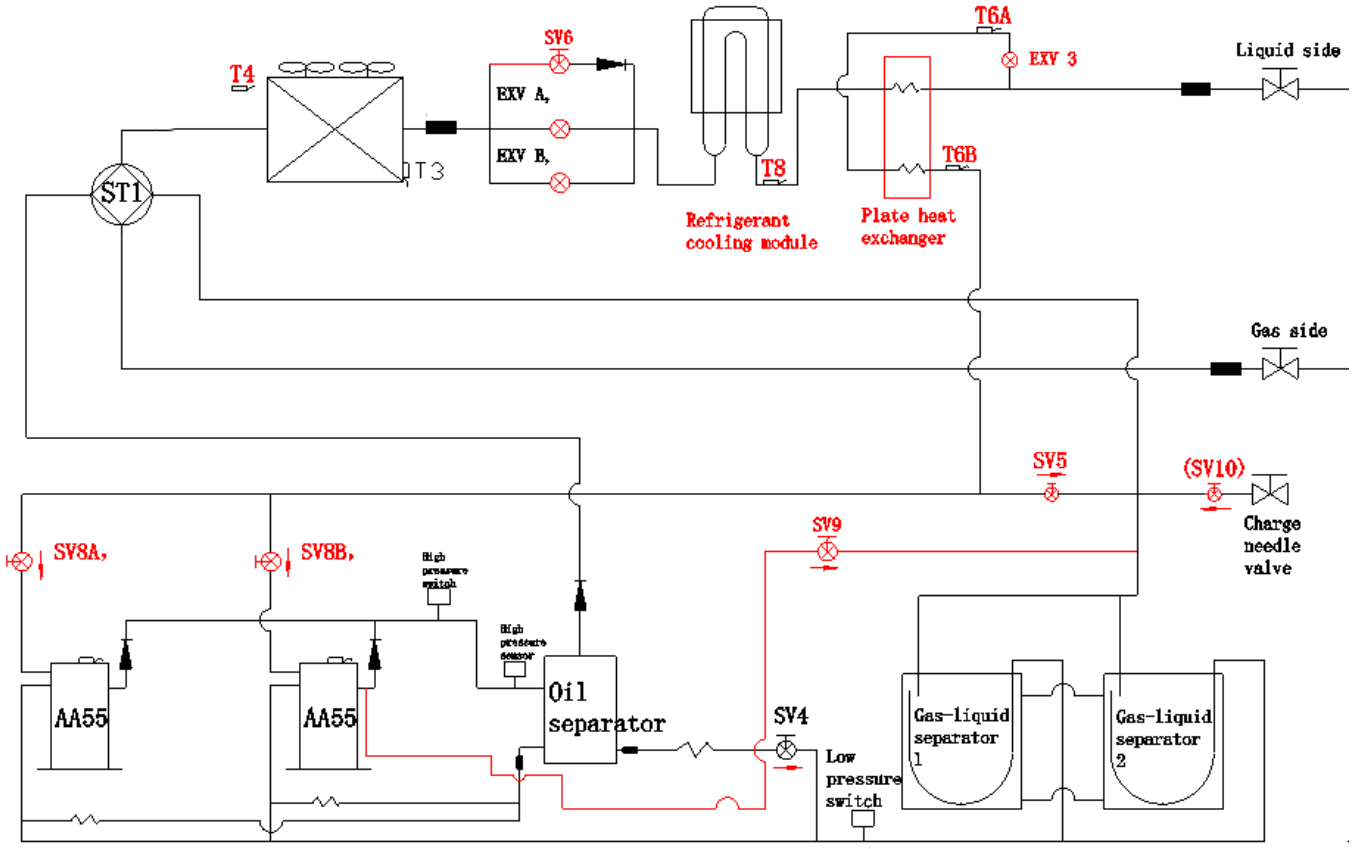
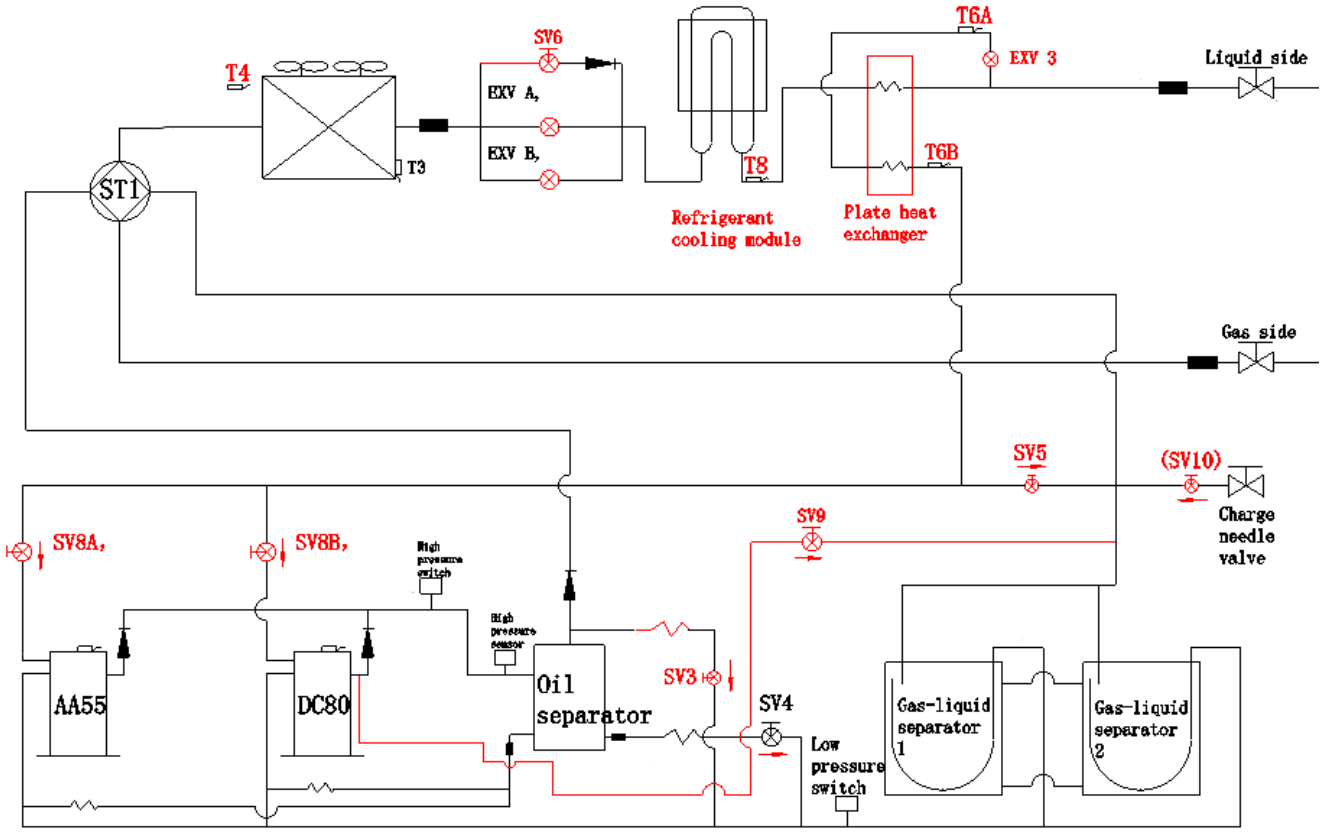


3.5 VMEP022(24,26)Q7A



3.6 VMEP028(29)Q7A



4 Key parts

4.1 Oil Separator

It is used to separate oil from high pressure & temperature gas refrigerant that is pumped out from compressor.

4.2 Gas-liquid separator

It is used to store the liquid refrigerant and oil, it can protect the compressor from liquid hammer.

4.3 Four-way valve (ST)

Closes in cooling mode and opens in heating mode

4.4 EXV (Electronic expansion valve)

a) Max.opening degree is 480 pulse.

b) Generally when system is electrified the EXV closes 700pulse first, then opens to 350 pulse and stand by. Then the unit is started, it opens to the right pulse.

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

d) VMEP008(9,10,12,14,16,18,20,22)Q7A unit has one EXV, VMEP024(26,28,29)Q7A unit has two EXV.

4.5 SV4

a) Oil return valve.

b) Opens after the DC inverter compressor has been run for 5 minutes and then closes 15 minutes later. (For the system has only one outdoor unit).

c) Every 20 minutes, SV4 of each outdoor unit opens for 3 minutes. (For the system has more than one outdoor unit)

4.6 SV5

a) It is used for defrosting.

b) In defrosting mode, the opening of SV5 can cut the refrigerant flowing circle, so the defrosting process will takes less time.

c) In cooling mode, it is always off.

4.7 SV6

a) By-pass valve.

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

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

4.8 SV10

a) Auto charge valve.

b) Customize this valve when need this function.

4.9 High pressure sensor

To detect the discharge pressure of the compressor and to control the DC fan speed.

5 Key functions

5.1 Oil return program

a) When system start up for 140 minutes, oil return program will run. After that, every 8 hours continued operating this program will run.

b) The program will last for 3 minutes.

c) All the outdoor EXV open to 480 pulse and SV6 is on.

d) Action of indoor Fan and EXV.

		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	300 pulse	/
	Fan	Anti-cold wind	Keep off	/

5.2 All outdoor units cycle operation

a) Balance the lifespan among outdoor units in one system.

b) In cooling mode, outdoor units will change the start order when

i. Room temperature gets to the set point or

ii. After oil return program.

c) In heating mode, outdoor units will change the start order when

i. Room temperature gets to the set point, or

ii. After oil return program, or

iii. After defrost program.

5.3 Forced cooling program

a) After pressing it once, all indoor units and outdoor units will start cooling, no matter what mode they are running on, no matter whether they are ON or OFF.

b) The forced cooling function is available for master unit only.

c) During forced cooling mode.

i. All indoor EXVs open to 300 pulses.

ii. All indoor fans are in high speed.

iii. All compressors are ON.

iv. All outdoor fan motors are ON

v. Outdoor EXVs opens to 480 pulses

vi. SV6 is ON

d) When program starts:

i. All the compressors are on

ii. Indoor fan is running at high speed

e) When the process lasts for 1h or the button is pressed again, program will quit.

5.4 Defrost program

a) When any module's condenser temperature (T3) < 0, last for 40minutes, this outdoor unit sends defrost order to master unit.

b) Before defrost, save current EXV opening pulses. EXV opening pulses will be recover when defrost program ends.

c) During defrosting.

i. All indoor EXVs open to 480 pulses.

ii. All indoor fans are OFF.

iii. All compressors are ON.

iv. All outdoor fan motors are OFF

v. Outdoor EXVs open to 480 pulses

vi. SV6 is ON

d) It ends when in the following conditions:

i. The defrosting time is up to 10 minutes.

ii. All module's condenser temperature (T3)≥15 ℃.

iii. System stops, or switches to non-heating mode.

e) After defrost.

i. All indoor units' EXV recover to former pulse.

ii. All indoor fans return to normal control.

iii. All compressors return to normal control.

iv. All outdoor fan motors return to normal control.

v. Outdoor EXVs return to normal control.

vi. SV6 is OFF

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

5.5 Mode confliction

a) 6 kinds of mode restriction

i. First start indoor unit priority mode

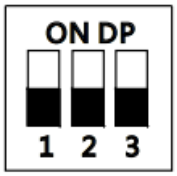
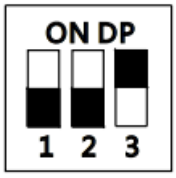
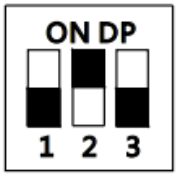
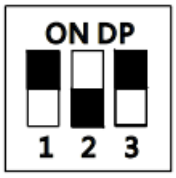
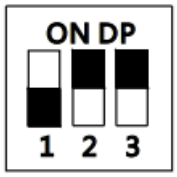
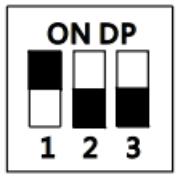
ii. Heatingpriority mode

iii. Coolingpriority mode

iv. Cooling only mode

v. Heating onlymode

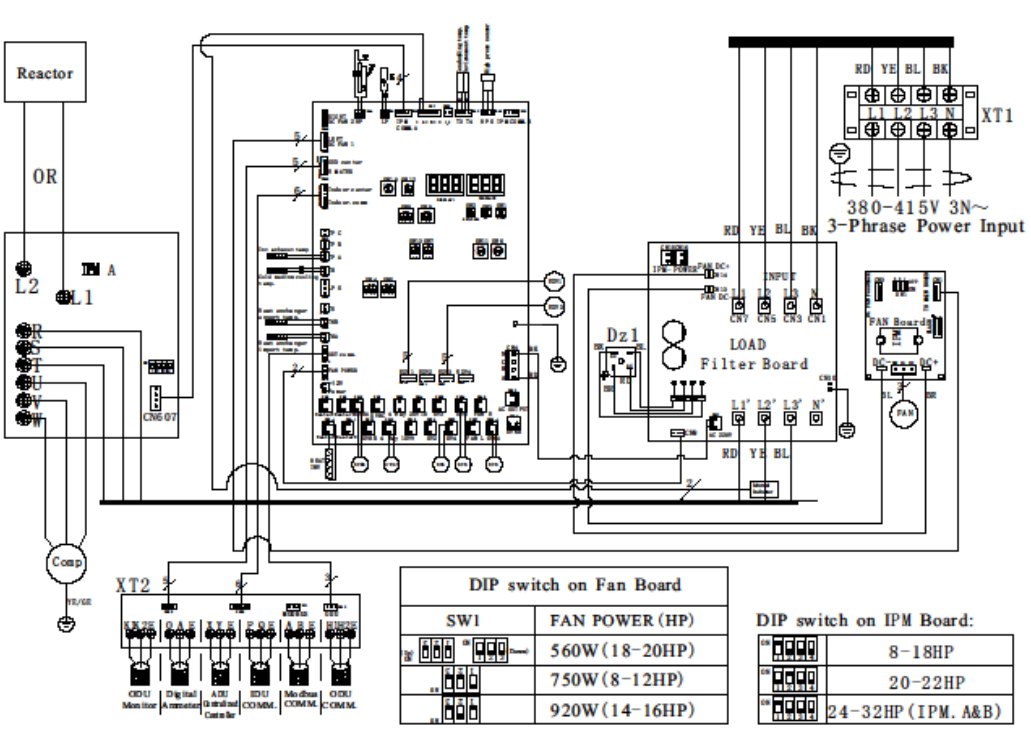
vi. VIP priority

					
First start priority (default)	Heating priority mode	Coolingpriority mode	VIP NO.63 priority	Heating onlymode	Cooling only mode

4. Outdoor unit wiring diagramsand field wiring

4.1 Wiring diagram

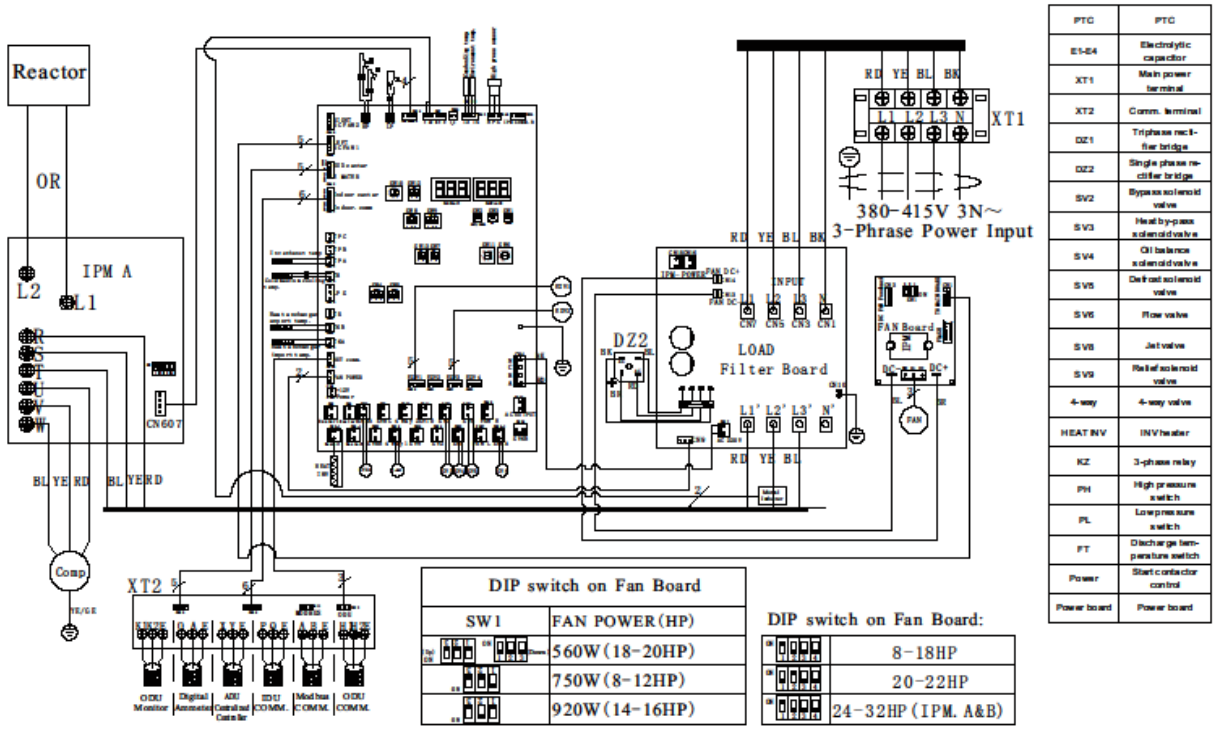
4.1.1 VMEP008(9,10)Q7A



PTC	PTC
E1-E4	Electrolytic capacitor
XT1	Main power terminal
XT2	Comm. terminal
DZ1	Triphase 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
PT	Discharge temperature switch
Power	Start contactor control
Power board	Power board

Caution: 1. *The Mutual reactors must be through with power cord.*

4.1.2 VMEP012(14)Q7A



PTC	PTC
E1-E4	Electrolytic capacitor
XT1	Main power terminal
XT2	Comm. terminal
DZ1	Triphase 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
PT	Discharge temperature switch
Power	Start contactor control
Power board	Power board

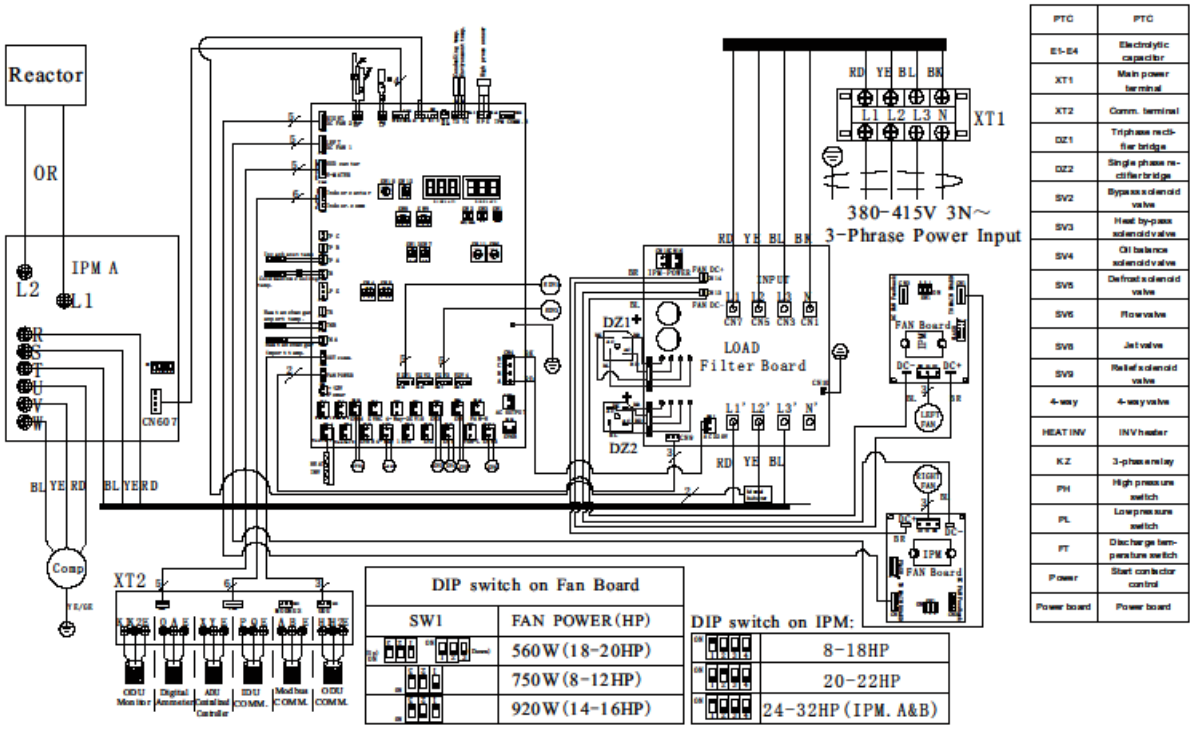
DIP switch on Fan Board	
SW1	FAN POWER(HP)
	560W(18-20HP)
	750W(8-12HP)
	920W(14-16HP)

DIP switch on Fan Board:

	8-18HP
	20-22HP
	24-32HP(IPM. A&B)

Caution: 1. *The Mutual reactors must be through with power cord.*

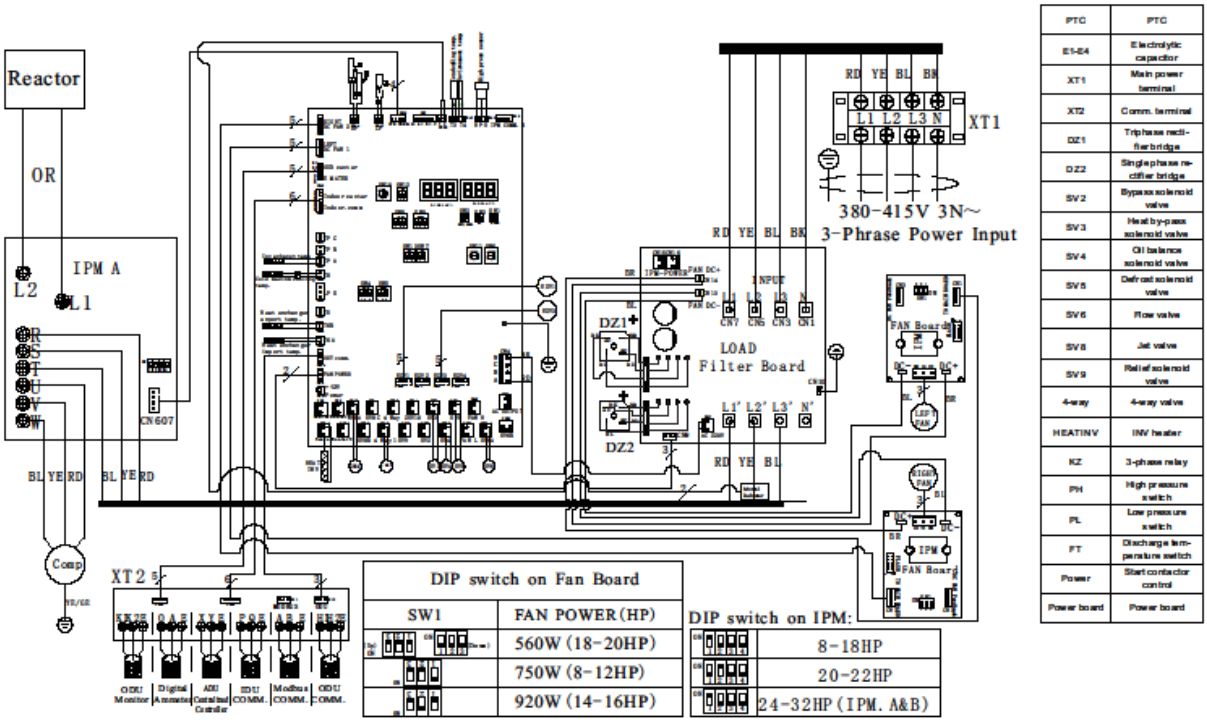
4.1.3 VMEP016Q7A



PTC	PTC
E1-E4	Electrolytic capacitor
XT1	Main power terminal
XT2	Comm. terminal
DZ1	Triphase 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
PT	Discharge temperature switch
Power	Start contactor control
Power board	Power board

Caution: 1.*The Mutual reactors must be through with power cord.*

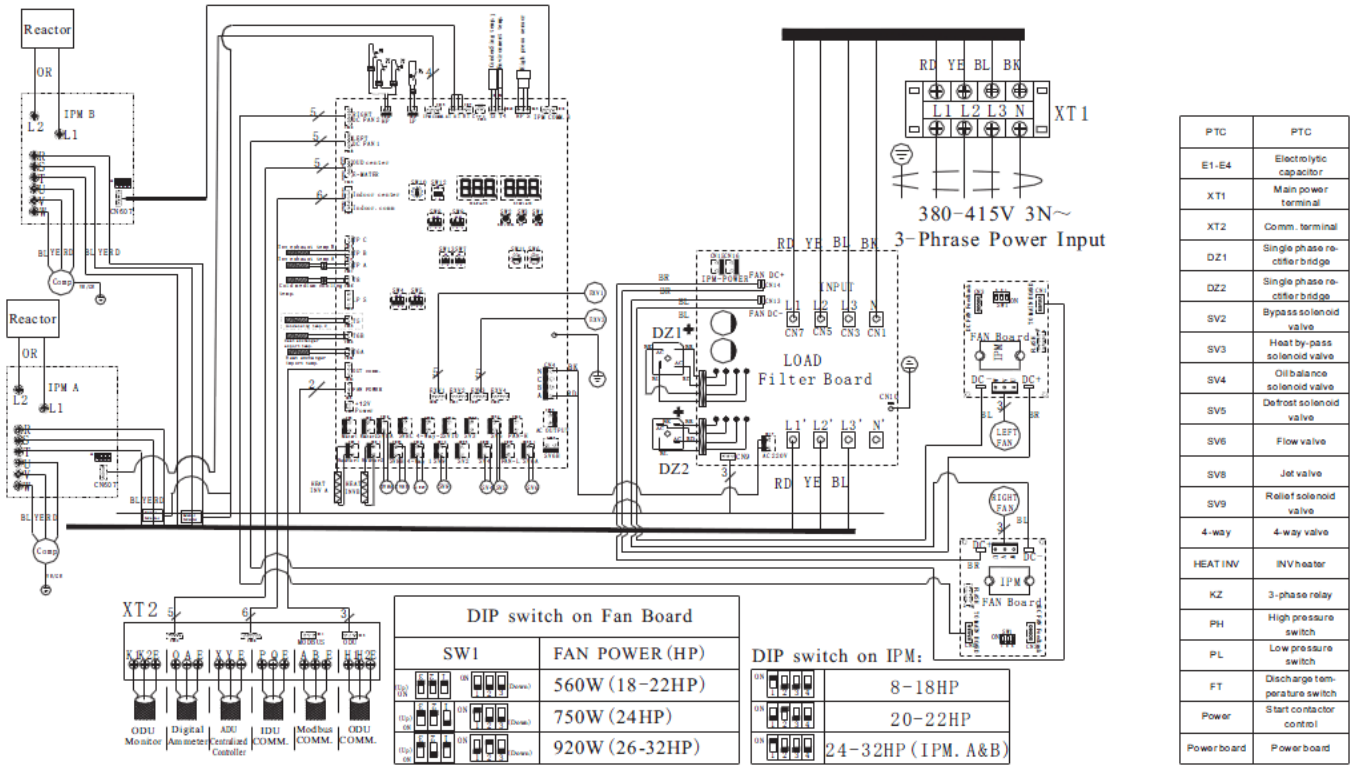
4.1.4 VMEP018(20)Q7A



PTC	PTC
E1-E4	Electrolytic capacitor
XT1	Main power terminal
XT2	Comm. terminal
DZ1	Triphase recti-fierbridge
DZ2	Singlephase re-ctifier bridge
SV2	Bypass solenoid valve
SV3	Heatby-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
HEATINV	INV heater
KZ	3-phase relay
PH	High pressure switch
PL	Low pressure switch
PT	Discharge tem-perature switch
Power	Start contactor control
Power board	Power board

Caution: 1. *The Mutual reactors must be through with power cord.*

4.1.5 VMEP022(24,26,28,29)Q7A



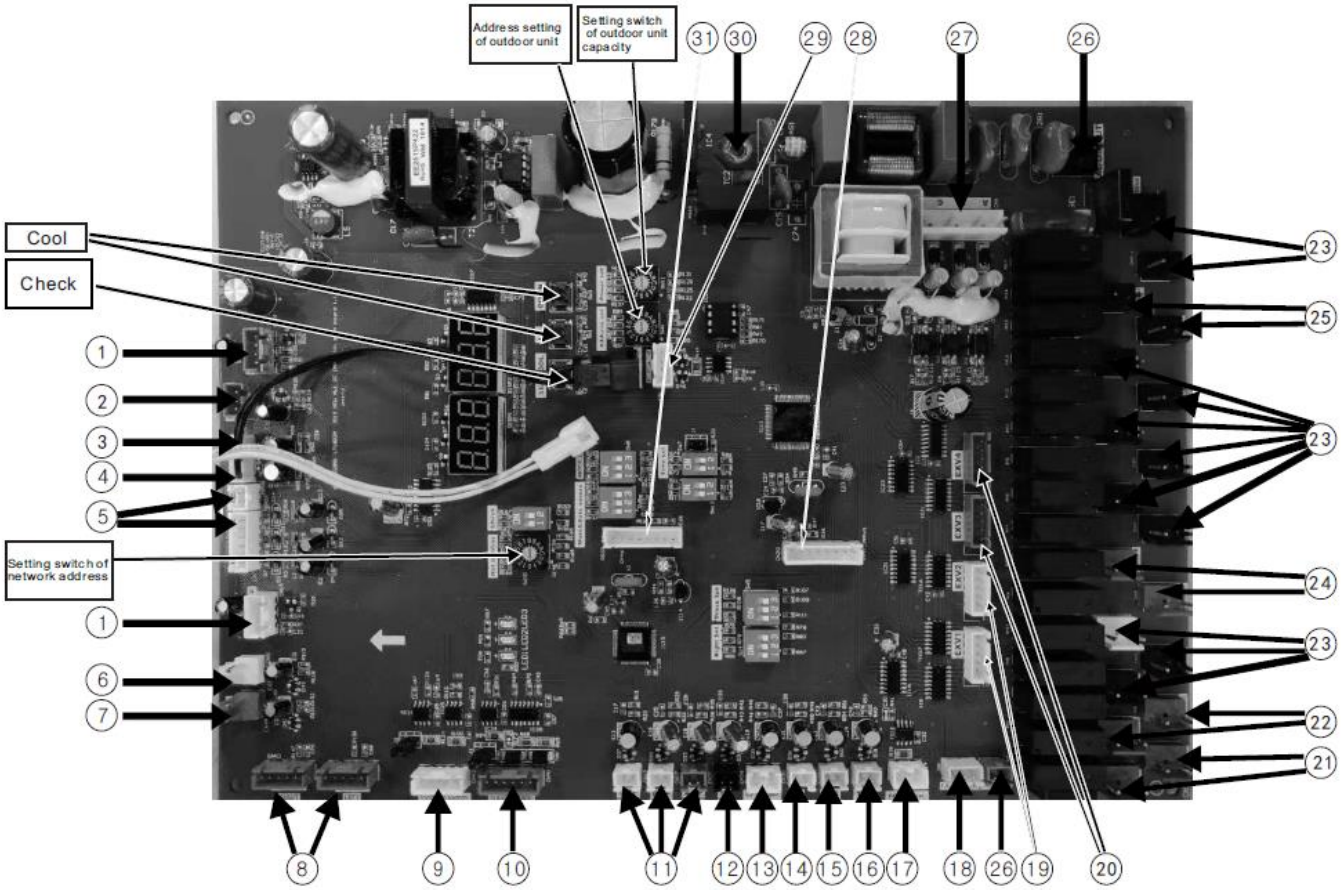
PTC	PTC
E1-E4	Electrolytic capacitor
XT1	Main power terminal
XT2	Comm. terminal
DZ1	Single phase rectifier bridge
DZ2	Single phase rectifier bridge
SV2	Bypass solenoid valve
SV3	Heat by-pass solenoid valve
SV4	Oil balance solenoid valve
SV5	Defrost solenoid valve
SV6	Flow valve
SV8	Jet valve
SV9	Relief 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

Caution: 1. *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*

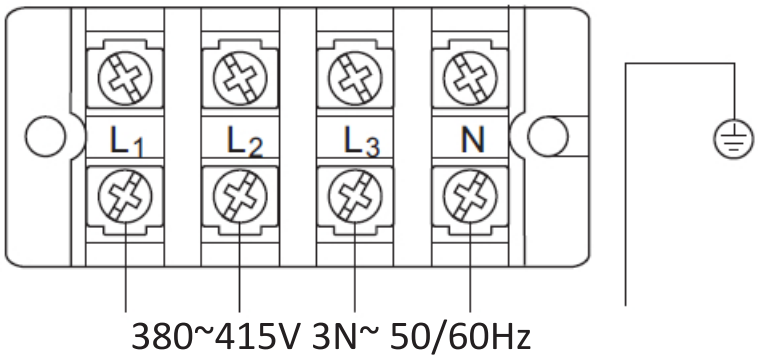
4.1.6 Main PCB



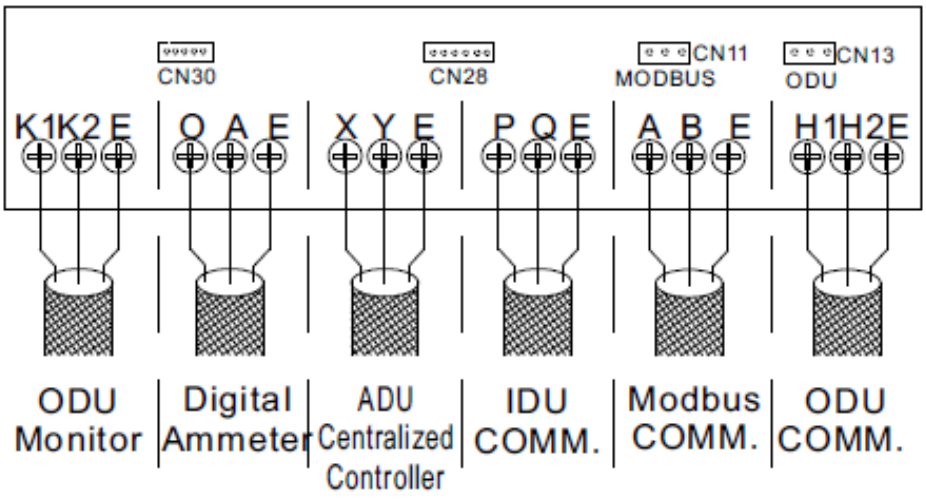
1	Module board communication port
2	Input port for detection of the system high pressure
3	Interface for detection of the outdoor ambient temperature
4	Interface for detection of the condenser coil temperature
5	Port to detect the primary side current for the compressors
6	Input port for signal of the 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)

4.2 Field wiring

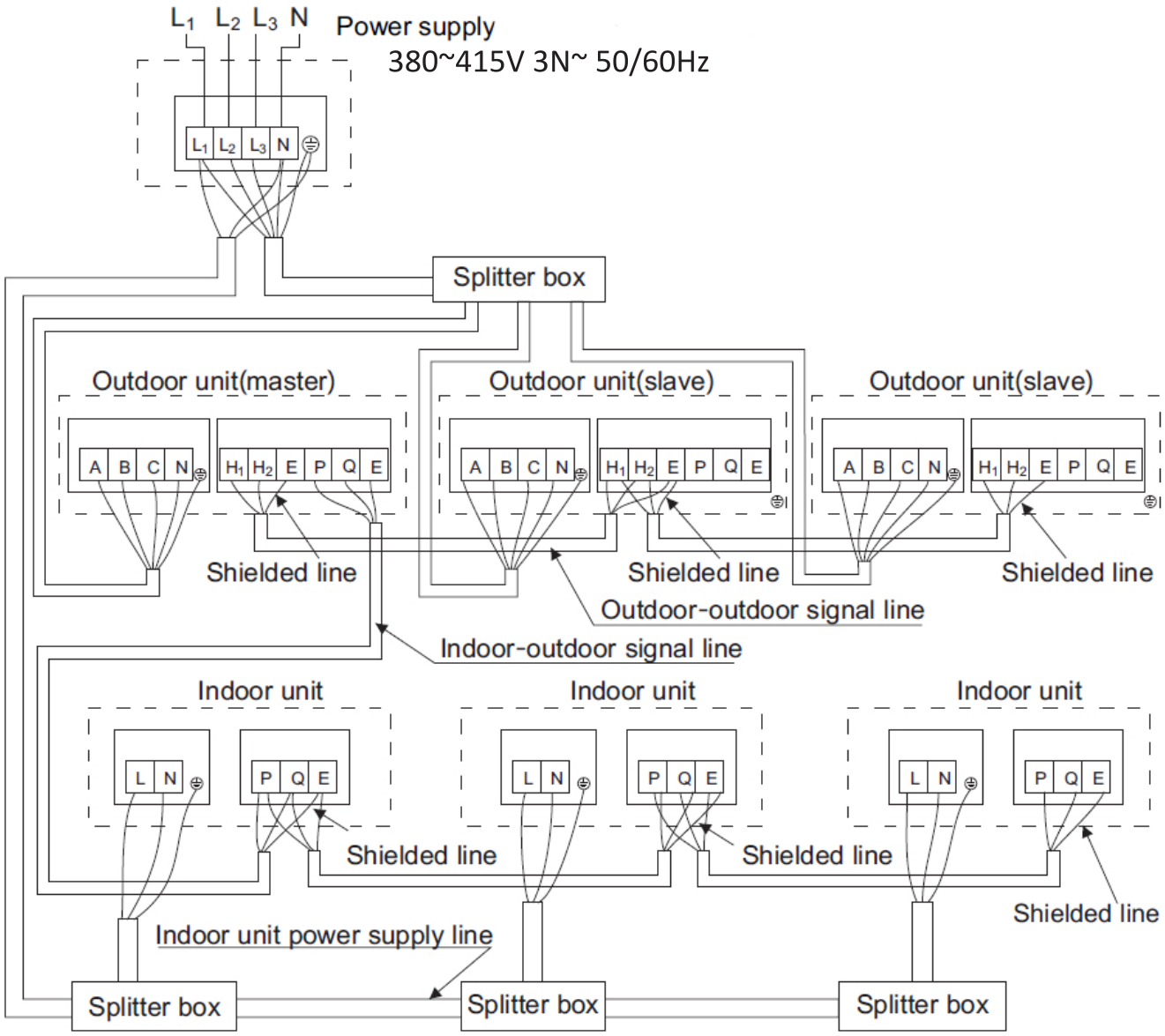
1) Power supply terminals



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 mm^2.

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'sforbidden to connect 200V or above high-volt live wire to the communication terminal.

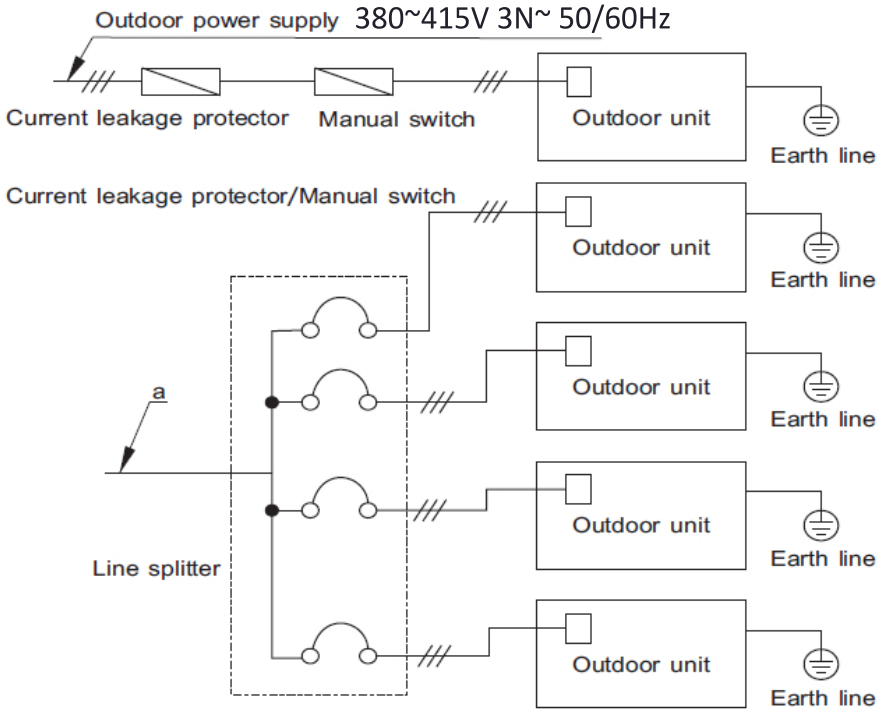
4.3 Outdoor unit power wiring

4.3.1Separately power supply (without power facility)

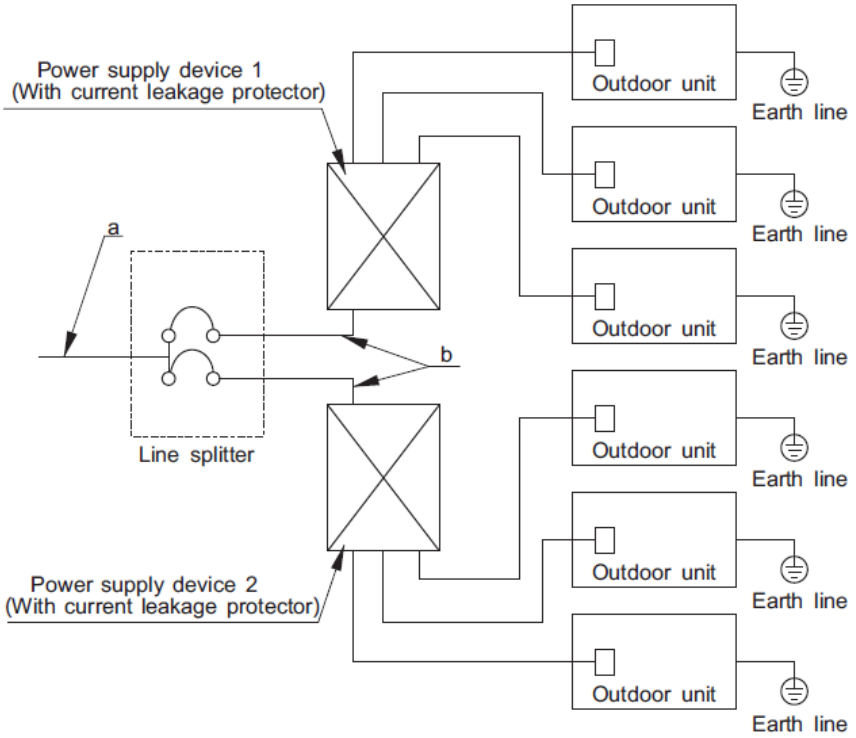
Model name	Power supply	Minimum power cable diameter (L is cable length)		Manual switch		Circuit breaker
		Size (mm^2)	Ground wire (mm^2)	Capacity (A)	Fuse (A)	
VMEP008Q7A-G14V252	380V~415V 3 phase 50/60Hz	6*4 (L ≤20m) 10*4 (20 < L ≤ 50m)	6	32	32	0.1A under 0.1second
VMEP009Q7A-G16V280						
VMEP010Q7A-G19V335						
VMEP012Q7A-G23V400		10*4 (L ≤20m) 16*4 (20 < L ≤ 50m)	10	50	50	
VMEP014Q7A-G26V450						
VMEP016Q7A-G29V500		16*4 (L ≤20m) 25*4 (20 < L ≤ 50m)	16	63	60	
VMEP018Q7A-G33V560						
VMEP020Q7A-G36V614						
VMEP022Q7A-G39V670						
VMEP024Q7A-G43V730						
VMEP026Q7A-G46V785						
VMEP028Q7A-G50V850		25*4 (L ≤20m) 35*4 (20 < L ≤ 50m)	25	80	80	
VMEP029Q7A-G50V900						

4.3.2With 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.*

4.3.3Reference table of the cable size for each capacity

Total capacity (HP)	Minimum wire diameter (mm^2)		Total capacity (HP)	Minimum wire diameter (mm^2)	
	Wire length ≤ 20m	20m<Wire length≤ 50m		Wire length ≤ 20m	20m<Wire length≤ 50m
8	6	10	44	35	50
10	6	10	46	50	70
12	6	10	48	50	70
14	10	16	50	50	70
16	10	16	52	70	95
18	16	25	54	70	95
20	16	25	56	70	95
22	16	25	58	70	95
24	16	25	60	95	120
26	16	25	62	95	120
28	16	25	64	95	120
30	25	35	66	95	120
32	25	35	68	95	120
34	25	35	70	120	150
36	35	50	72	120	150
38	35	50	74-76	120	150
40	35	50	78-88	150	185
42	35	50	90-96	150	185

Remark:

- *The above selection is for reference.*
- *For an actual electrical project, it should be considered that the cable layout, space between cable and surroundings, etc.*

4.3.4 Power wire selection

Power wiring includes the **main wire(a)** connecting to branch box and the **wire (b)** between branch box and power facilities.

Please select the wire diameter according to the following requirement.

a) Diameter of **mainwire (a)**: depends on the total horse power (HP) of outdoor unit (See 4.3.3).

Example:

In system: (8HP×1 unit+8HP×1 unit+10HP×1 unit)

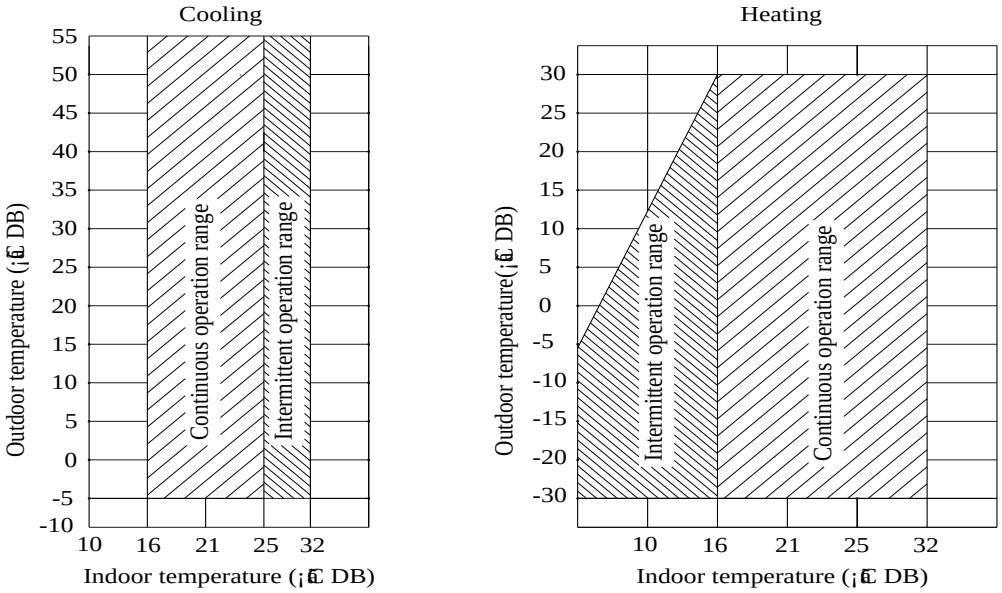
So totally 26HP → **See 4.3.3** → size of wire is 16mm^2 (within 20m)

b) Diameter of **wire (b):** depends on the number of combined outdoor unit.

If outdoor unit quantity ≤ 5, the **wire (b)** diameter selection is same as **main wire (a)** selection (See 4.3.3).

If outdoor unit quantity > 5, there will be 2 electric control boxes, the **wire (b)** diameter selection depends on the total horse power (HP) of outdoor units connecting to each electric control box (See 4.3.3).

5 Operation limits



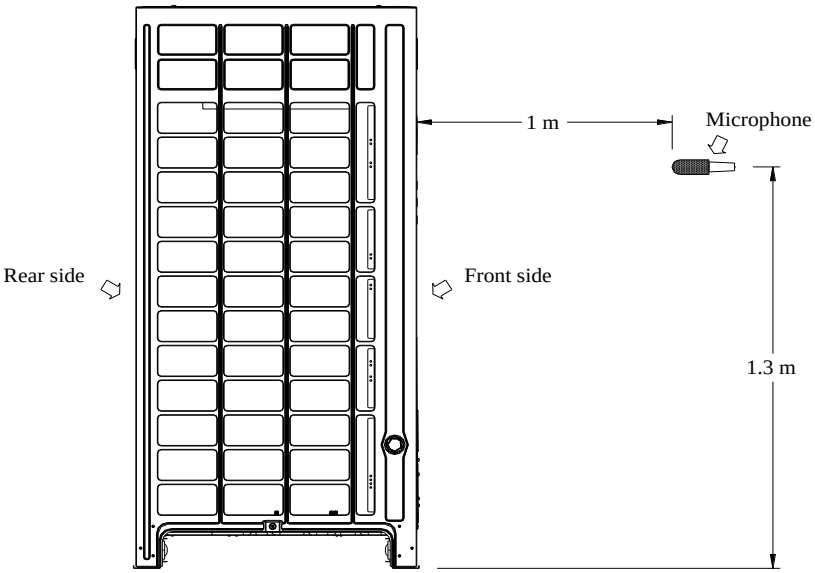
Operation mode	Outdoor temperature	Indoor temperature
Cooling	-5°C ~ 55°C	16°C ~ 32°C
Heating	-30°C ~ 30°C	16°C ~32°C

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.*

6 Operation sound Levels

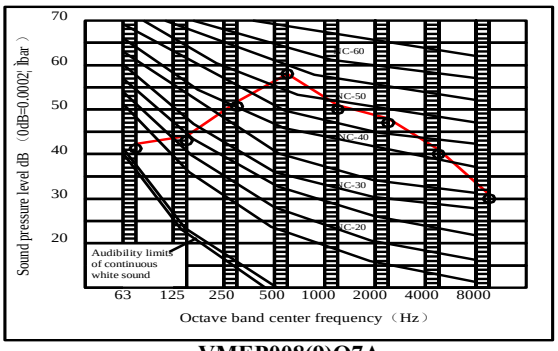
6.1 Testing method and sound levels



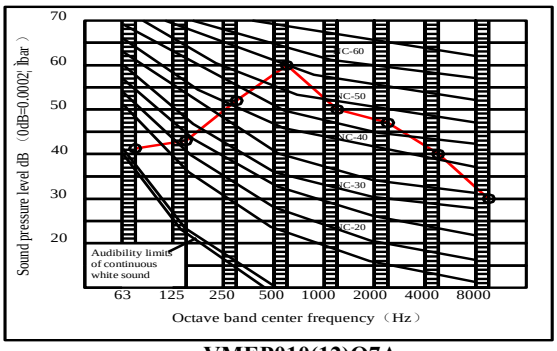
Test value

Outdoor unit	Sound level dB(A)
VMEP008Q7A	58
VMEP009Q7A	58
VMEP010Q7A	60
VMEP012Q7A	60
VMEP014Q7A	61
VMEP016Q7A	62
VMEP018Q7A	63
VMEP020Q7A	63
VMEP022Q7A	62
VMEP024Q7A	63
VMEP026Q7A	63
VMEP028Q7A	64
VMEP029Q7A	64

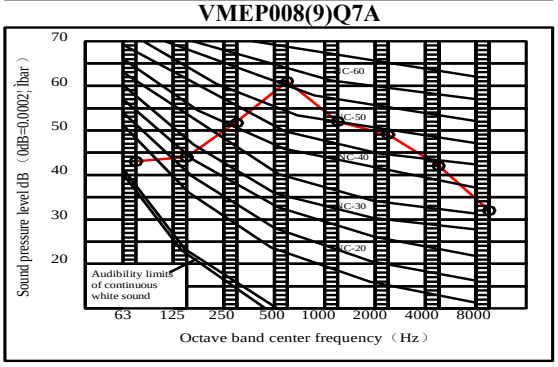
6.2 NC curve



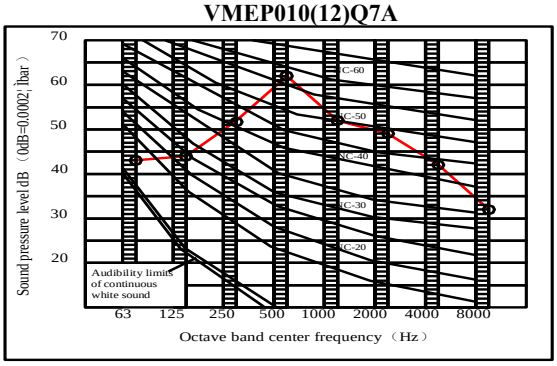
VMEP008(9)Q7A



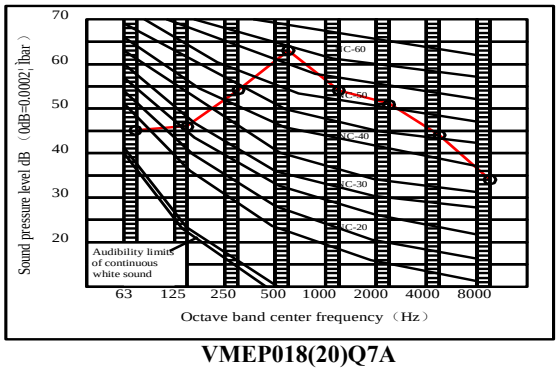
VMEP010(12)Q7A



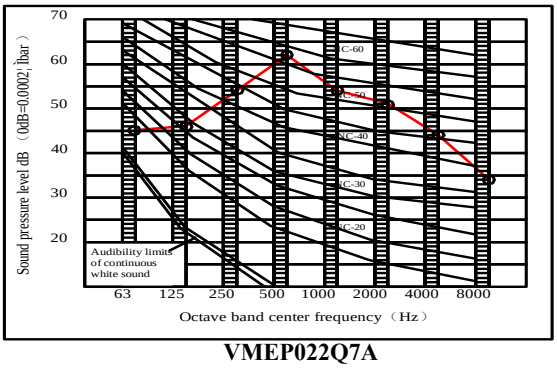
VMEP014Q7A



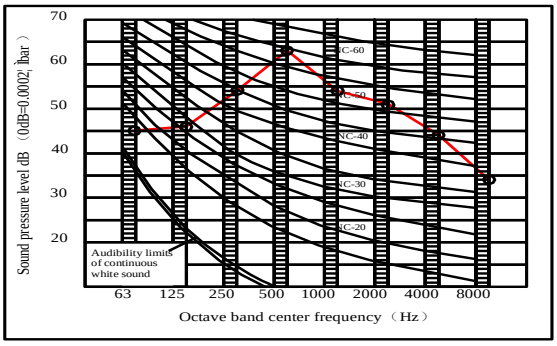
VMEP016Q7A



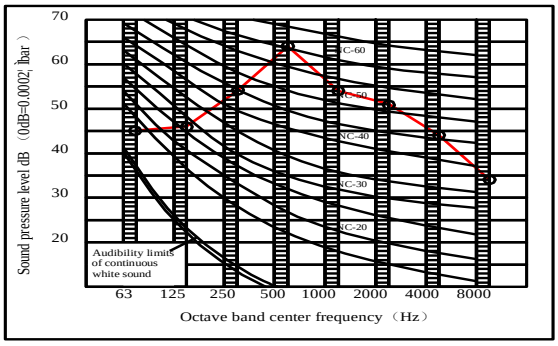
VMEP018(20)Q7A



VMEP022Q7A



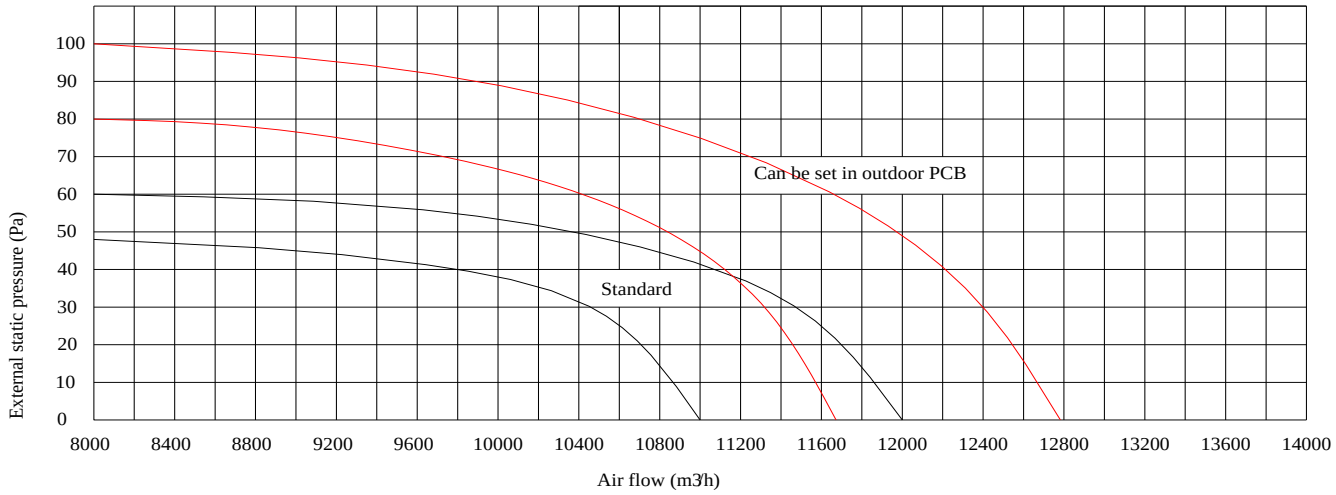
VMEP024(26)Q7A



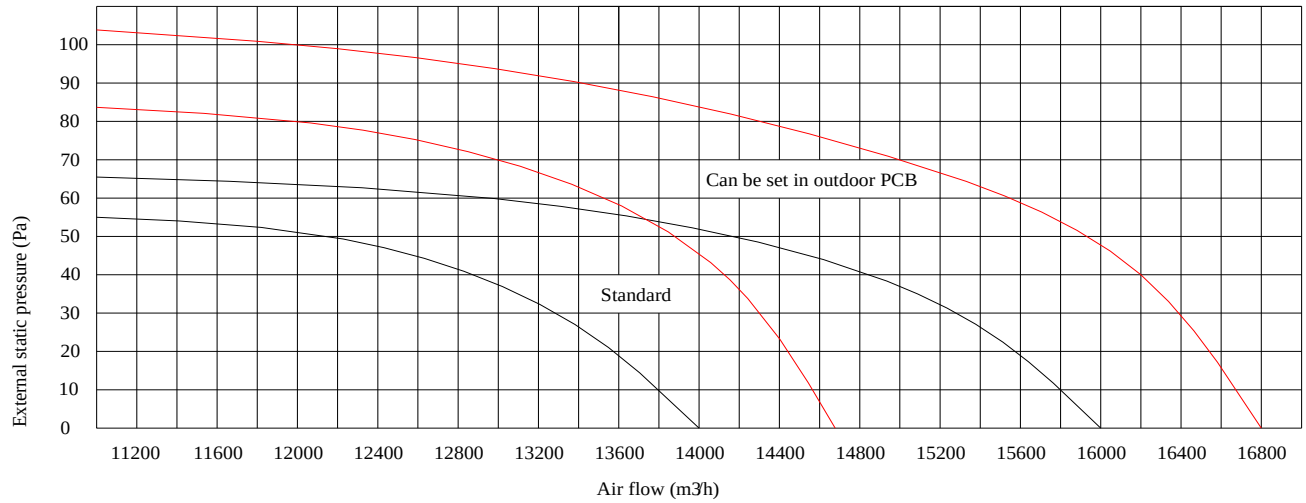
VMEP028(29)Q7A

7 Outdoor fan performance

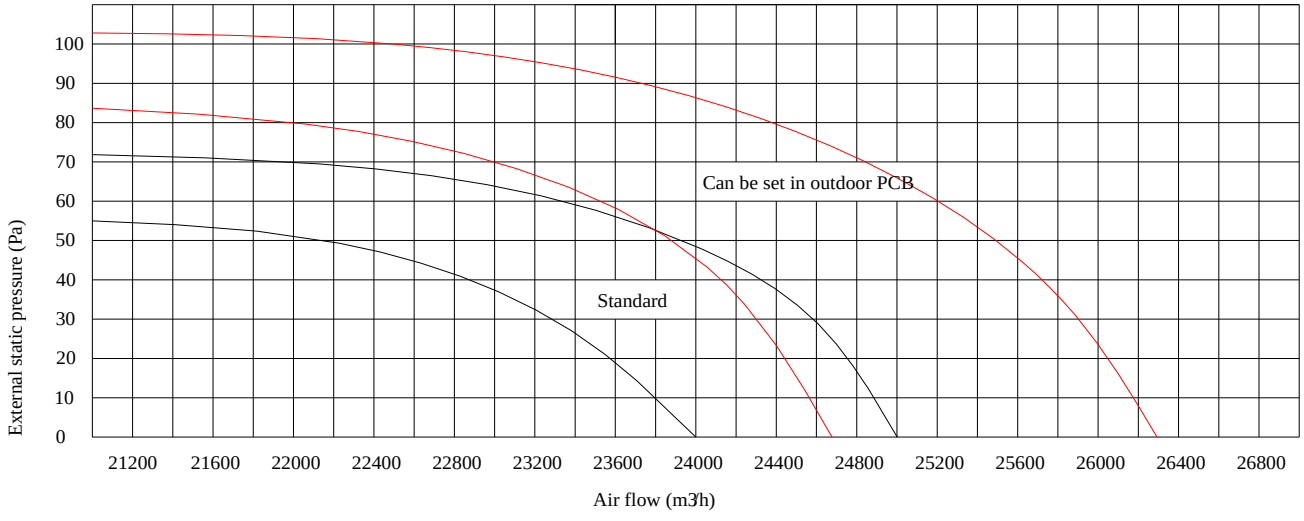
7.1 VMEP008(9,10)Q7A air-flow-external-static-pressure curve



7.2 VMEP012(14,16,18,20)Q7A air-flow-external-static-pressure curve



7.3 VMEP022(24,26,28,29)Q7A air-flow-external-static-pressure curve



8. Functional parts and safety devices

Table 1:

Item	Symbol	Name		VMEP008Q7A-G14V252	VMEP009Q7A-G16V280	VMEP010Q7A-G19V335
Compressor	Inverter	Inverter compressor		AA55PHDG-D1Y2	AA55PHDG-D1Y2	AA55PHDG-D1Y2
	CCH	Crank case heater		35W for each inverter compressor		
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(±1.5)kg/cm^2 ON:35(±2)kg/cm^2		
	LP	Low pressure switch		OFF:0.5(±0.3)kg/cm^2 ON:1.5(±0.5)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: 90°C OFF: 120°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		UKV-32D210(Φ3.2)/TS632C03(Φ3.2)(Sanhua / Hualu)		
	4-W/V	4-way valve		STF-22*19-R1(A) (Sanhua / Dunan)		

Table 2:

Item	Symbol	Name		VMEP012Q7A-G23V400	VMEP014Q7A-G26V450	VMEP016Q7A-G29V500
Compressor	Inverter Compressor	Inverter compressor		DC80PHDG-D1Y2	DC80PHDG-D1Y2	DC80PHDG-D1Y2
	CCH	Crank case heater		40W for each inverter compressor		
Motor and security devices	Motor	Fan motor	Model	DR-310-920-8		DR-310-560-8-1*2
			Output power	920W		560W*2
		Safety thermostat	On	110°C		
			Off	/		
	HP	High pressure switch		OFF:45(±1.5)kg/cm^2 ON:35(±2)kg/cm^2		
	LP	Low pressure switch		OFF:0.5(±0.3)kg/cm^2 ON:1.5(±0.5)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: 90°C OFF: 120°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		DPF-W9.52*W9.52-4.5-T\(Φ4.5) (Sanhua)		
	4-W/V	4-way valve		STF-22*19-R1(A) (Sanhua / Dunan)		

Table 3:

Item	Symbol	Name		VMEP018Q7A-G33V560	VMEP020Q7A-G36V615
Compressor	Inverter Compressor	Inverter compressor		DD98PHDG-D1Y2	DD98PHDG-D1Y2
	CCH	Crank case heater		40W for each inverter compressor	
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(±1.5)kg/cm^2 ON:35(±2)kg/cm^2	
	LP	Low pressure switch		OFF:0.5(±0.3)kg/cm^2 ON:1.5(±0.5)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:90°C OFF: 120°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		DPF-W9.52*W9.52-4.5-T\(Φ4.5) (Sanhua)	
	4-W/V	4-way valve		STF-22*19-R1(A) (Sanhua / Dunan)	

Table 4:

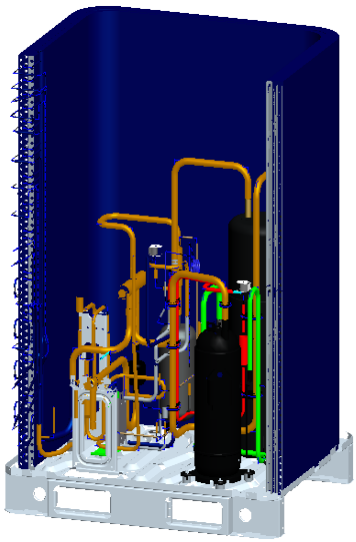
Item	Symbol	Name		VMEP022Q7A-G39V670	VMEP024Q7A-G43V730	VMEP026Q7A-G46V785
Compressor	Inverter Compressor	Inverter compressor		AA55PHDG-D1Y2*2		
	CCH	Crank case heater		35W for each inverter compressor		
Motor and security devices	Motor	Fan motor	Model	DR-310-750-8-1*2	DR-310-920-8*2	
			Output power	750W*2	920*2	
		Safety thermostat	On	110°C		
			Off	/		
	HP	High pressure switch		OFF:45(±1.5)kg/cm^2 ON:35(±2)kg/cm^2		
	LP	Low pressure switch		OFF:0.5(±0.3)kg/cm^2 ON:1.5(±0.5)kg/cm^2		
Temperature sensor	T3,T4	Temperature sensor (condenser outlet/ambient temperature)		25°C=5KΩ		
	Discharge thermostat	Thermostat (Inverter/Fixed discharge)		BW130°C ON:85°C OFF: 130°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		DPF-W9.52*W9.52-4.5-T\(Φ4.5) (Sanhua)	DPF-N12.7*N12.7-6.1-T\(Φ6.1)	
	4-W/V	4-way valve		STF-22*19-R1(A) (Sanhua / Dunan)	STF-32*25.4-R1\SHF (L)-70-810(Sanhua)	

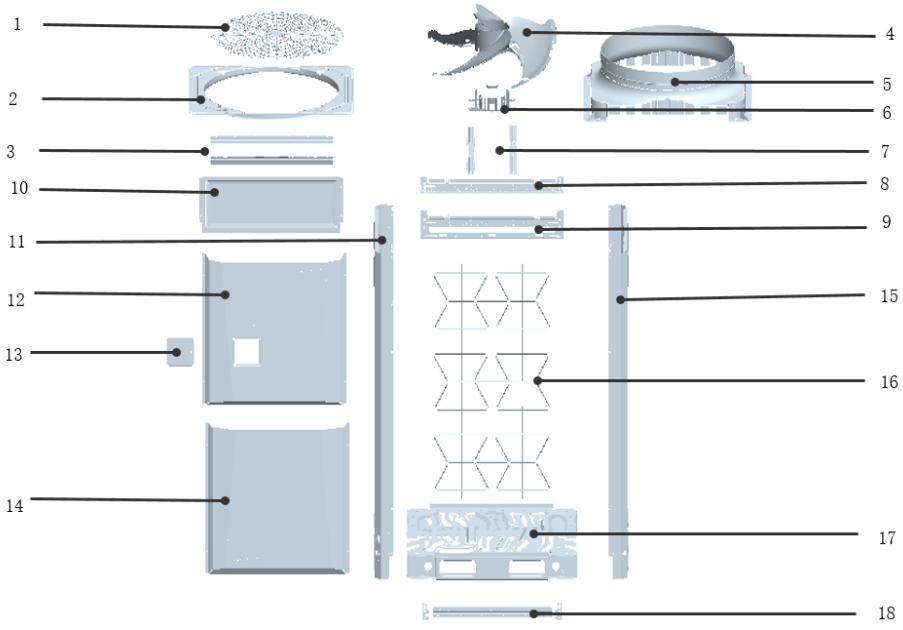
Table 5:

Item	Symbol	Name		VMEP028Q7A-G50V850	VMEP029Q7A-G50V900
Compressor	Inverter Compressor	Inverter compressor		AA55PHDG-D1Y2 DC80PHDG-D1Y2	
	CCH	Crank case heater		35W+40W	
Motor and security devices	Motor	Fan motor	Model	DR-310-920-8*2	
			Output power	920W*2	
		Safety thermostat	On	110°C	
			Off	/	
	HP	High pressure switch		OFF:45(±1.5)kg/cm^2 ON:35(±2)kg/cm^2	
	LP	Low pressure switch		OFF:0.5(±0.3)kg/cm^2 ON:1.5(±0.5)kg/cm^2	
Temperature sensor	T3,T4	Temperature sensor (condenser outlet/ambient temperature)		25°C=5KΩ	
	Discharge thermostat	Thermostat (Inverter/Fixed discharge)		BW130°C ON:85°C OFF: 130°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		DPF-N12.7*N12.7-6.1-T\(Φ6.1)	
	4-W/V	4-way valve		STF-32*25.4-R1\SHF(L)-70-810(Sanhua)	

9. Exploded views

9.1 VMEP008(9,10)Q7A



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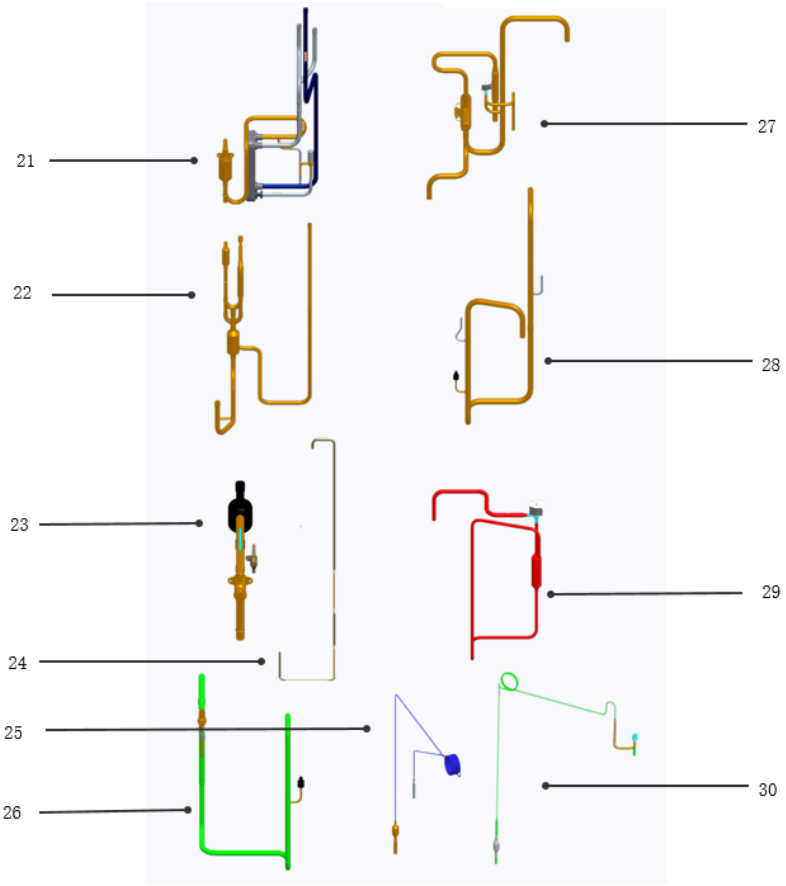
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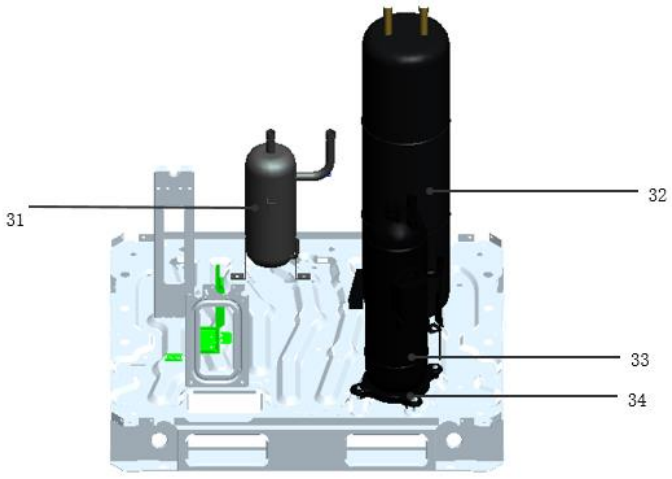
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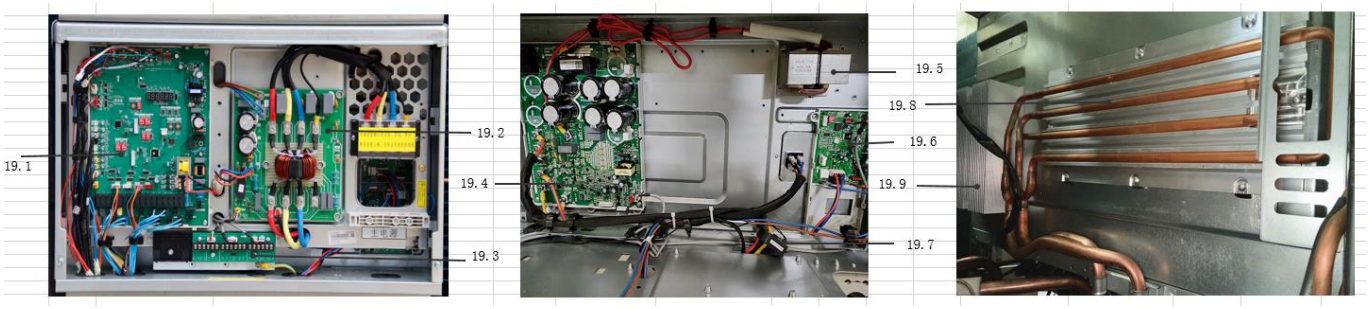
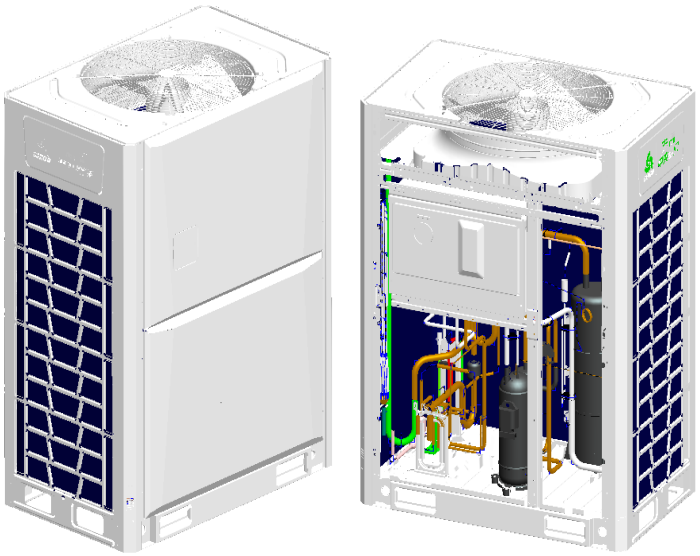
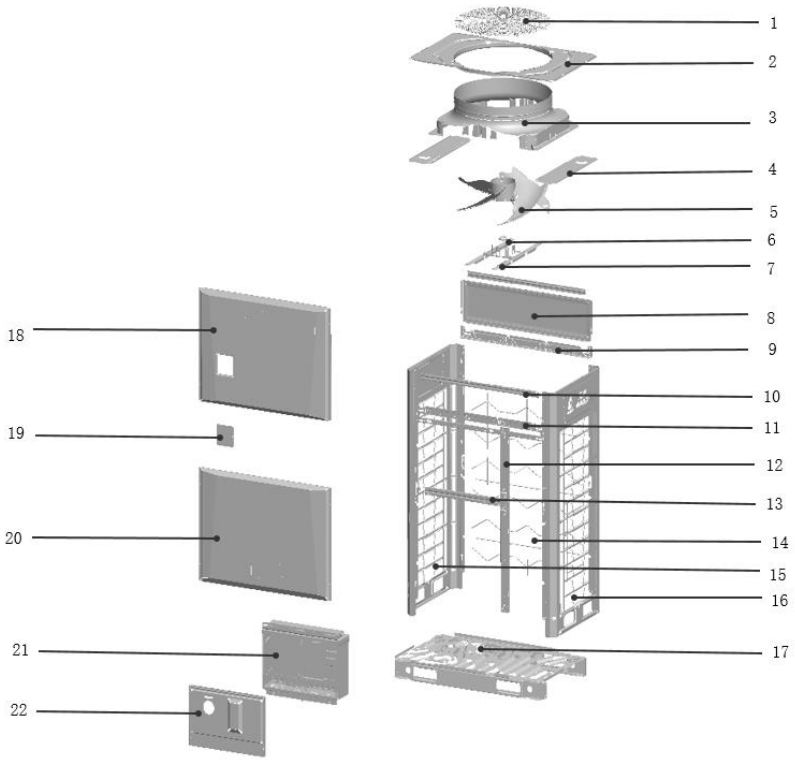


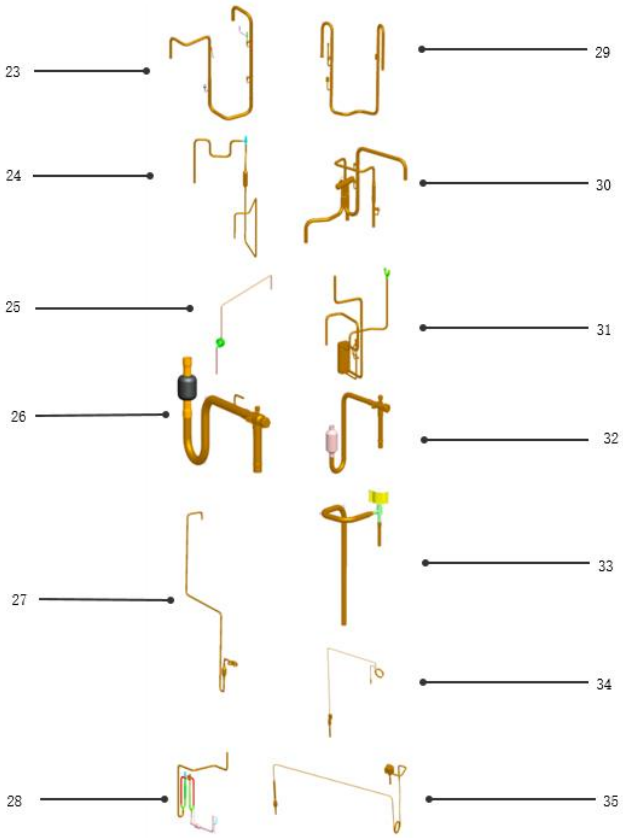
No.	Partname	Quantity	No.	Partname	Quantity
1	Top net	1	21.2	EXV	1
2	Top cover	1	22	High pressure liquid pipe assembly	1
3	Top crossbeam	2	22.1	EXV assembly	1
4	Axial flow leaf	1	22.1.1	EXV	1
5	Air guide ring assembly	1	22.1.2	EXV coil	2
6	Single shaft fan motor	1	22.1.3	Solenoid valve	1
7	Fan motor crossbeam	2	23	Low pressure stop valve assembly	1
8	Rear motor beam support plate assembly	1	24	Needle valve assembly	1
9	Front motor beam support plate assembly	1	25	Compressor oil return capillary assembly	1
10	Back plate	1	26	Exhaust assembly	1
11	Left side panel assembly	1	26.1	High pressure switch	1
12	Upper panel	1	26.2	High pressure sensor	1
13	Spot check window assembly	1	27	4-way valve assembly	1
14	Lower board	1	27.1	4-way valve	1
15	Right side panel	1	27.2	4-way valve coil	1
16	Back net	1	27.3	Solenoid valve	1
17	Chassis assembly	1	28	Gas return pipe assembly	1
18	Electric control box support plate	1	28.1	Low pressure switch	1
19	Electronic control components	1	29	Injection pipe assembly	1
19.1	Outdoor main PCB board	1	29.1	Solenoid valve	1
19.2	Three-phase filter and fan power board	1	30	SV4 solenoid valve assembly	1
19.3	Communication terminal board	1	31	Oil separator	1
19.4	IPM module board	1	32	Gas-liquid separator	1
19.5	Reactor	1	33	Inverter compressor	1
19.6	Fan module board assembly	1	34	Crankshaft heater belt	1
19.7	Current transformer	1	35	Ambient temperature sensor (T4)	1
19.8	Refrigerant cooling assembly	1	36	Exhaust temperature sensor	1
19.9	Fan module heat sink	1	37	Condenser temperature sensor (T3)	1
19.10	Single phase rectifier bridge	1	38	Plate heat exchanger pipe	2

				temperature sensor (T6A/T6B)	
20	Condenser components	1	39	Refrigerant cooling pipe temperature sensor (T8)	1
21	Plate heat exchanger assembly	1	40	Exhaust thermostat	1
21.1	Plate heat exchanger	1			

9.2 VMEP012(14)Q7A



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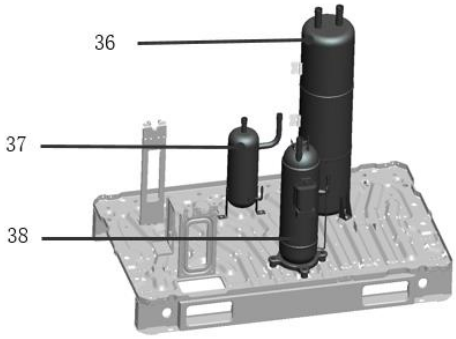
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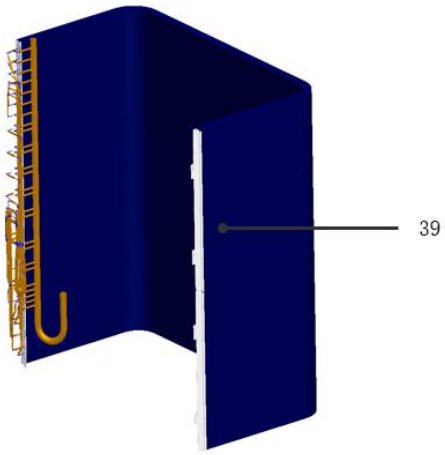
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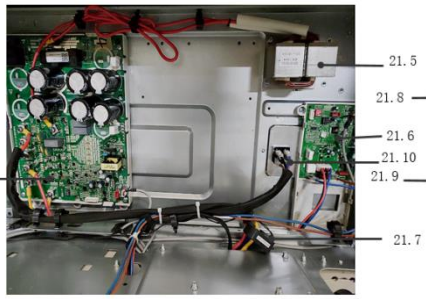
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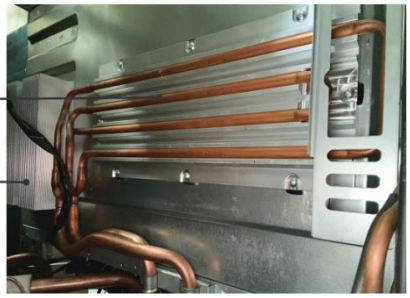
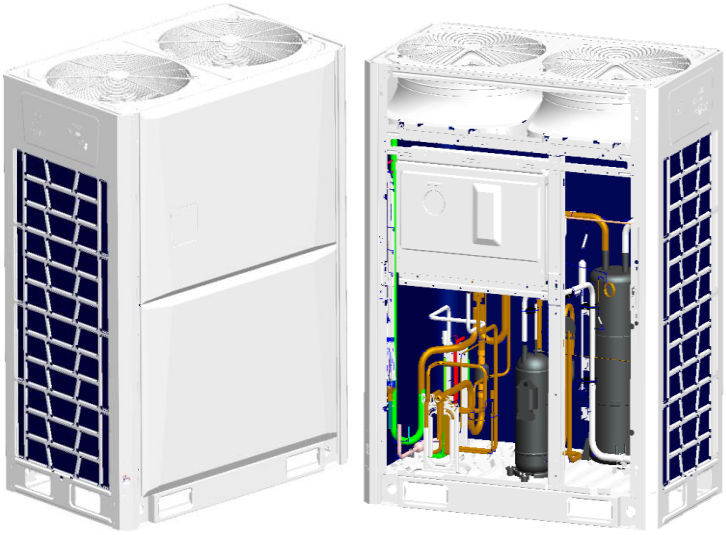
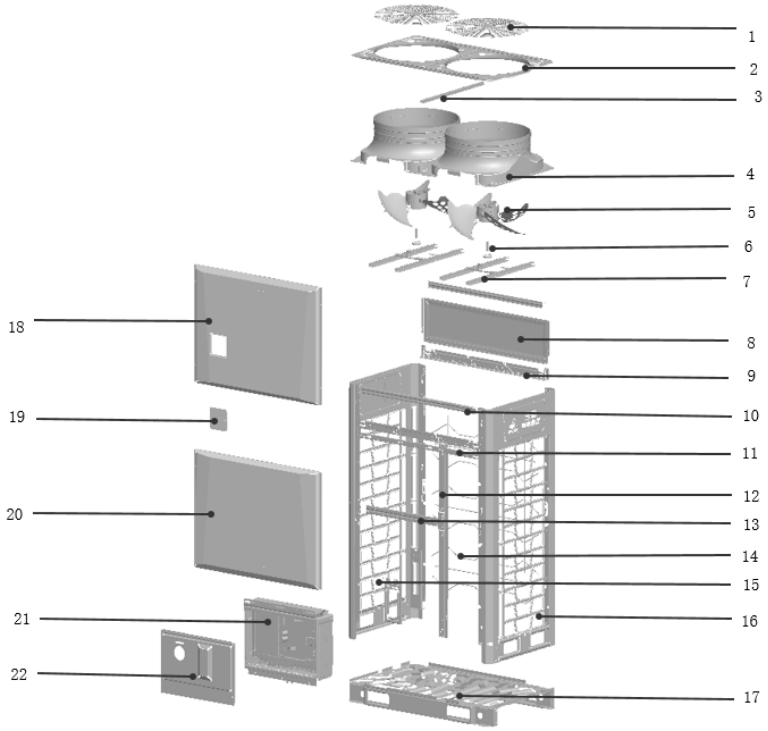


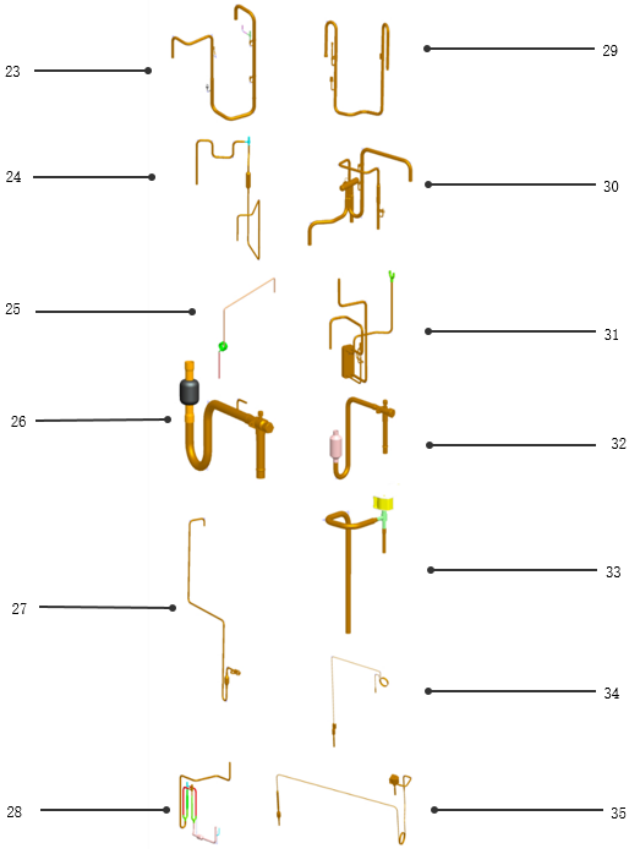
No.	Part name	Quantity	No.	Part name	Quantity
1	Top net	1	24.1	Solenoid valve	1
2	Top cover	1	25	SV3 connection pipe assembly	1
3	Air guide ring assembly	1	26	Low pressure stop valve assembly	1
4	Condenser sealing plate	2	27	Needle valve assembly	1
5	Axial flow leaf	1	28	High pressure liquid pipe assembly	1
6	Single shaft fan motor	1	28.1	EXV assembly	1
7	Fan motor crossbeam	2	28.1.1	Solenoid valve	1
8	Back plate	1	28.1.2	EXV	1
9	Rear motor beam support plate assembly	1	28.2	Filter	1
10	Top crossbeam	2	29	Compressor exhaust assembly	1
11	Front motor beam support plate assembly	1	29.1	High pressure switch	1
12	Front middle column	1	30	4-way valve assembly	1
13	Electric control box support plate	1	30.1	4-way valve	1
14	Back net	1	31	Plate heat exchanger assembly	1
15	Right side panel	1	31.1	Plate heat exchanger	1
16	Right side panel	1	31.2	EXV	1
17	Chassis assembly	1	32	High pressure stop valve assembly	1
18	Upper panel	1	33	SV5 solenoid valve	1
19	Spot check window assembly	1	33.1	Solenoid valve	1
20	Lower board	1	34	Compressor oil return capillary assembly	1
21	Electronic control components	1	35	SV4 solenoid valve assembly	1
21.1	Outdoor main PCB board	1	35.1	Solenoid valve	1
21.2	Three-phase filter and fan power board	1	36	Gas-liquid separator	1
21.3	Communication terminal board	1	37	Oil separator	1
21.4	IPM module board	1	38	Compressor	1
21.5	Reactor	1	39	Crankshaft heater belt	1
21.6	Fan module board assembly	1	40	Condenser components	1
21.7	Current transformer	1	41	EXV coil	1
21.8	Refrigerant cooling assembly	1	42	4-way valve coil	1
21.9	Fan module heat sink	1	43	EXV coil	1
21.10	Single phase rectifier bridge	1	44	Ambient temperature sensor (T4)	1
22	Electronic box cover	1	45	Exhaust temperature sensor	1
23	Gas return pipe assembly	1	46	Condenser temperature sensor (T3)	1
23.1	Solenoid valve	1	47	Plate heat exchanger pipe temperature sensor (T6A/T6B)	1
23.2	Low pressure switch	1	48	Refrigerant cooling pipe temperature sensor (T8)	1

24	SV8 solenoid valve	1	49	Exhaust thermostat	1

9.3 VMEP016(18)Q7A



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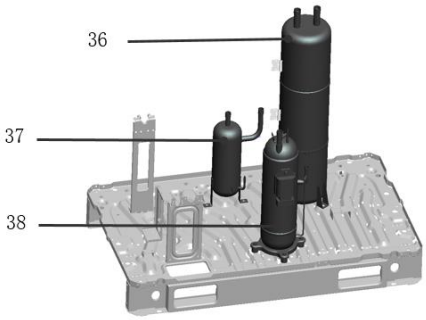
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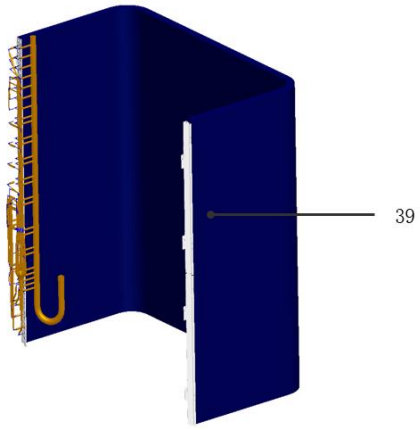
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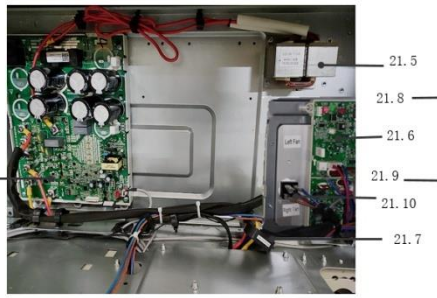
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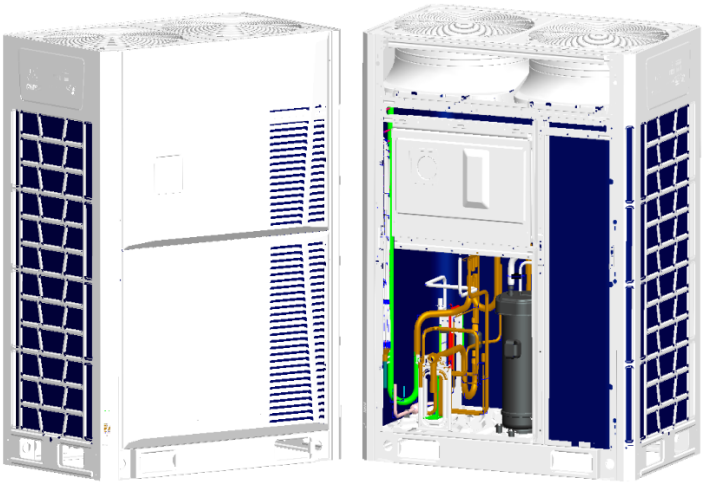
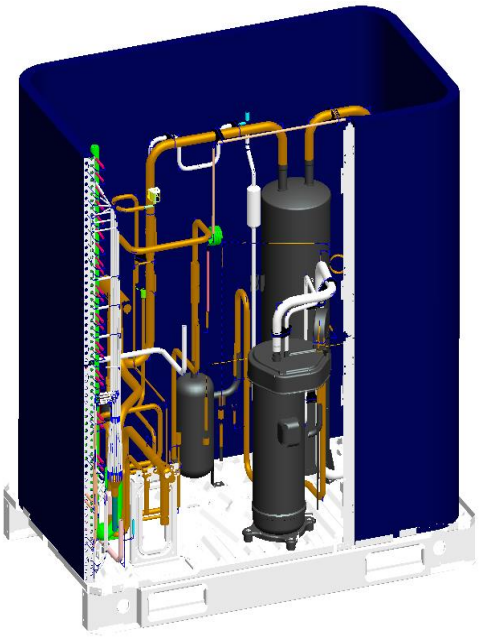
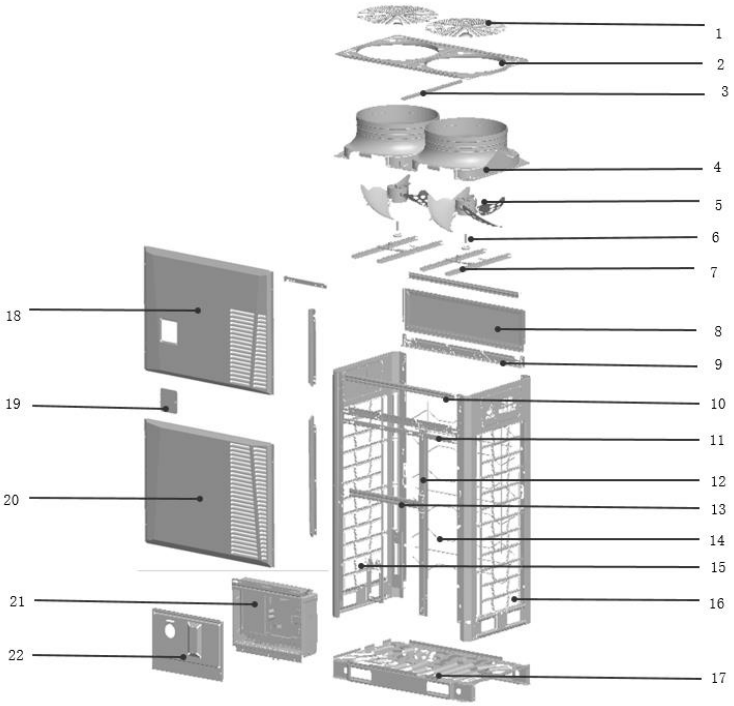
No.	Part name	Quantity	No.	Part name	Quantity
1	Top net	2	24.1	Solenoid valve	1
2	Top cover	1	25	SV3 connection pipe assembly	2
3	Air guide ring assembly	1	26	Low pressure stop valve assembly	2
4	Air guide ring assembly	2	27	Needle valve assembly	1
5.1	Axial flow leaf (three blades)	1	28	High pressure liquid pipe assembly	1
5.2	Axial flow leaf (four blades)	1	28.1	EXV assembly	1
6	Single shaft fan motor	2	28.1.1	Solenoid valve	1
7	Fan motor crossbeam	4	28.1.2	EXV	1
8	Back plate	1	28.2	Filter	1
9	Rear motor beam support plate assembly	1	29	Compressor exhaust assembly	1
10	Top crossbeam	2	29.1	High pressure switch	1
11	Front motor beam support plate assembly	1	30	4-way valve assembly	1
12	Front middle column	1	30.1	4-way valve	1
13	Electric control box support plate	1	31	Plate heat exchanger assembly	1
14	Back net	1	31.1	Plate heat exchanger	1
15	Right side panel	2	31.2	EXV	1
16	Right side panel	1	32	High pressure stop valve assembly	1
17	Chassis assembly	1	33	SV5 solenoid valve	1
18	Upper panel	1	33.1	Solenoid valve	1
19	Spot check window assembly	1	34	Compressor oil return capillary assembly	1
20	Lower board	1	35	SV4 solenoid valve assembly	1
21	Electronic control components	1	35.1	Solenoid valve	1
21.1	Outdoor main PCB board	1	36	Gas-liquid separator	1
21.2	Three-phase filter and fan power board	1	37	Oil separator	1
21.3	Communication terminal board	1	38	Compressor	1
21.4	IPM module board	1	39	Crankshaft heater belt	1
21.5	Reactor	1	40	Condenser components	1
21.6	Fan module board assembly	2	41	EXV coil	1
21.7	Current transformer	1	42	4-way valve coil	1
21.8	Refrigerant cooling assembly	1	43	EXV coil	1
21.9	Fan module heat sink	1	44	Ambient temperature sensor (T4)	1
21.10	Single phase rectifier bridge	2	45	Exhaust temperature sensor	1
22	Electronic box cover	1	46	Condenser temperature sensor (T3)	1
23	Gas return pipe assembly	1	47	Plate heat exchanger pipe temperature sensor (T6A/T6B)	1
23.1	Solenoid valve	1	48	Refrigerant cooling pipe temperature sensor (T8)	1

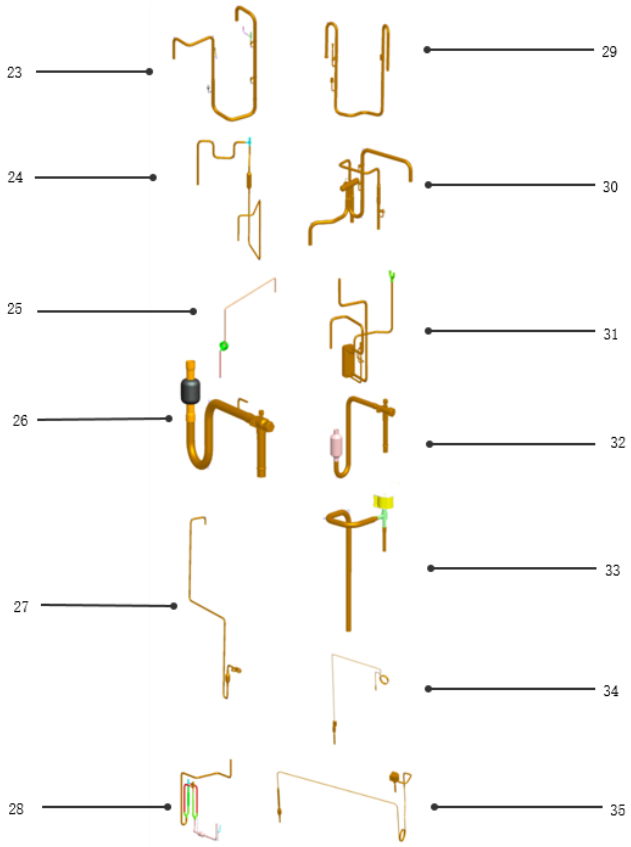
23.2	Low pressure switch	1	49	Exhaust thermostat	1
24	SV8 solenoid valve	1			

9.4 VMEP020Q7A





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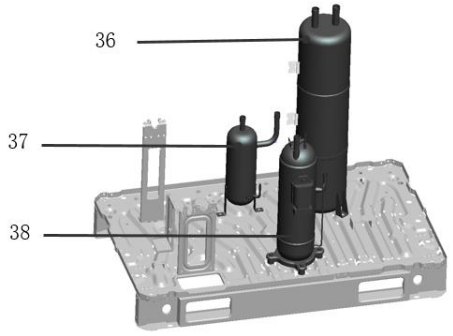
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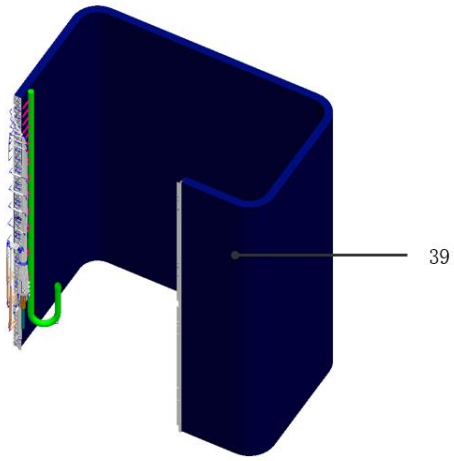
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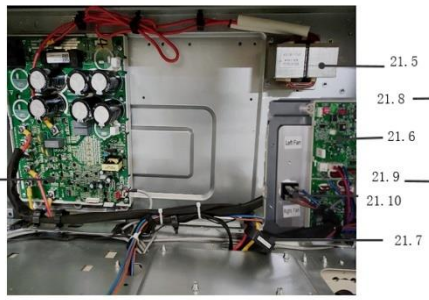
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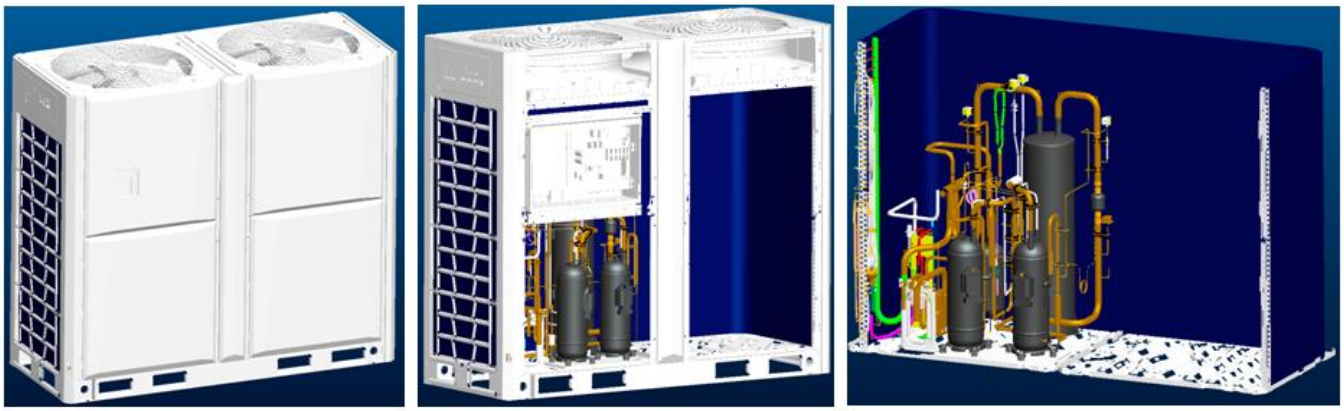
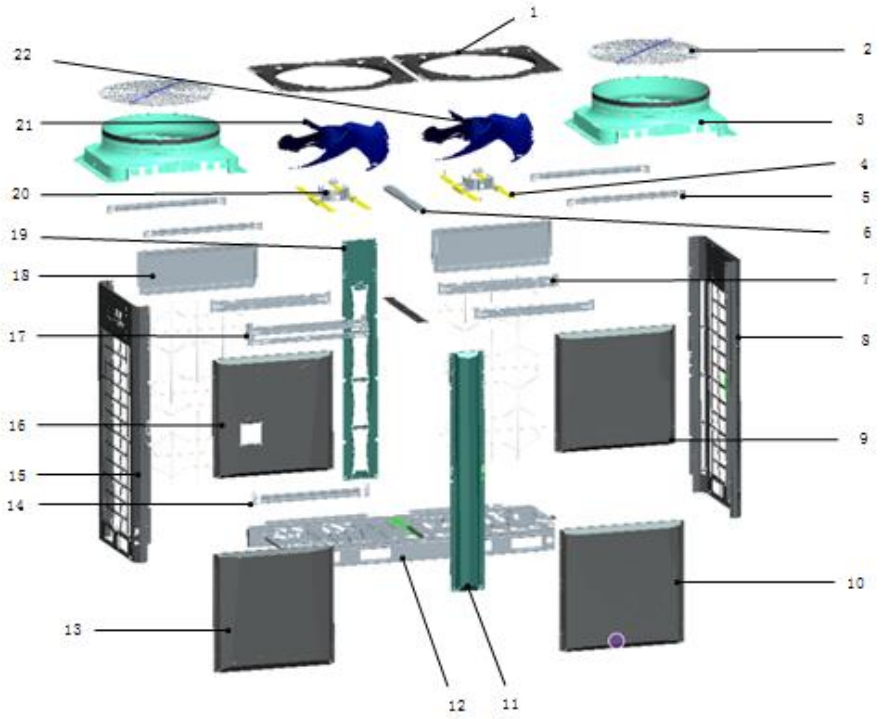
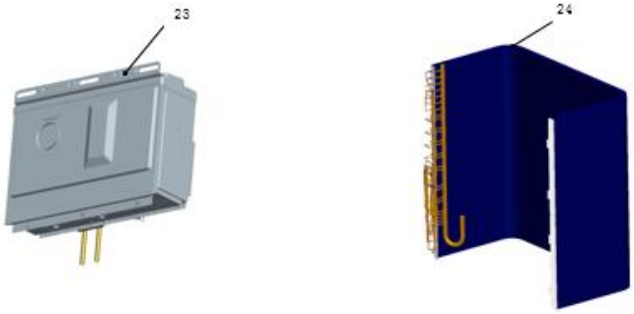
No.	Part name	Quantity	No.	Part name	Quantity
1	Top net	2	24.1	Solenoid valve	1
2	Top cover	1	25	SV3 connection pipe assembly	2
3	Air guide ring assembly	1	26	Low pressure stop valve assembly	2
4	Air guide ring assembly	2	27	Needle valve assembly	1
5.1	Axial flow leaf (three blades)	1	28	High pressure liquid pipe assembly	1
5.2	Axial flow leaf (four blades)	1	28.1	EXV assembly	1
6	Single shaft fan motor	2	28.1.1	Solenoid valve	1
7	Fan motor crossbeam	4	28.1.2	EXV	1
8	Back plate	1	28.2	Filter	1
9	Rear motor beam support plate assembly	1	29	Compressor exhaust assembly	1
10	Top crossbeam	2	29.1	High pressure switch	1
11	Front motor beam support plate assembly	1	30	4-way valve assembly	1
12	Front middle column	1	30.1	4-way valve	1
13	Electric control box support plate	1	31	Plate heat exchanger assembly	1
14	Back net	1	31.1	Plate heat exchanger	1
15	Right side panel	2	31.2	EXV	1
16	Right side panel	1	32	High pressure stop valve assembly	1
17	Chassis assembly	1	33	SV5 solenoid valve	1
18	Upper panel	1	33.1	Solenoid valve	1
19	Spot check window assembly	1	34	Compressor oil return capillary assembly	1
20	Lower board	1	35	SV4 solenoid valve assembly	1
21	Electronic control components	1	35.1	Solenoid valve	1
21.1	Outdoor main PCB board	1	36	Gas-liquid separator	1
21.2	Three-phase filter and fan power board	1	37	Oil separator	1
21.3	Communication terminal board	1	38	Compressor	1
21.4	IPM module board	1	39	Crankshaft heater belt	1
21.5	Reactor	1	40	Condenser components	1
21.6	Fan module board assembly	2	41	EXV coil	1
21.7	Current transformer	1	42	4-way valve coil	1
21.8	Refrigerant cooling assembly	1	43	EXV coil	1
21.9	Fan module heat sink	1	44	Ambient temperature sensor (T4)	1
21.10	Single phase rectifier bridge	2	45	Exhaust temperature sensor	1
22	Electronic box cover	1	46	Condenser temperature sensor (T3)	1
23	Gas return pipe assembly	1	47	Plate heat exchanger pipe temperature sensor (T6A/T6B)	1
23.1	Solenoid valve	1	48	Refrigerant cooling pipe temperature sensor (T8)	1

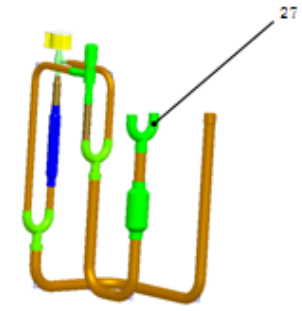
23.2	Low pressure switch	1	49	Exhaust thermostat	1
24	SV8 solenoid valve	1			

9.5 VMEP022Q7A





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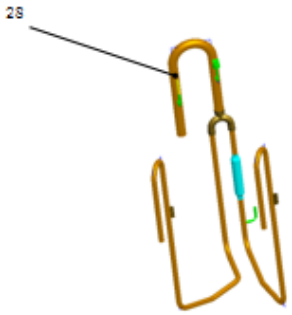
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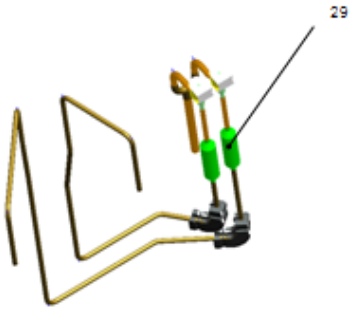
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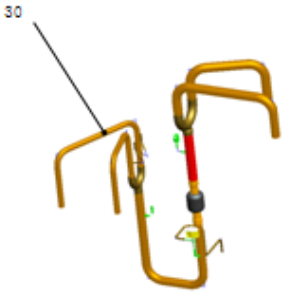
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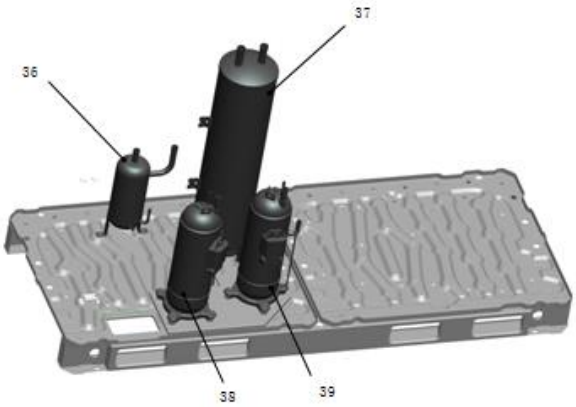
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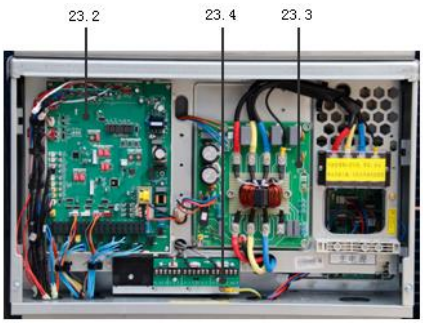
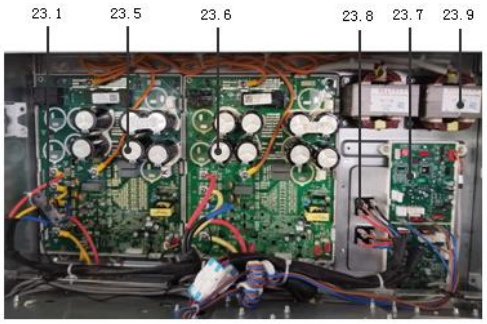
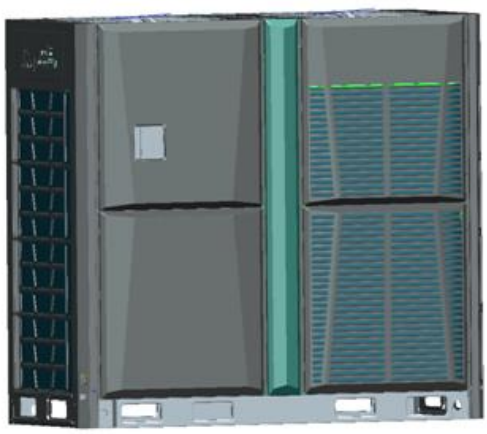


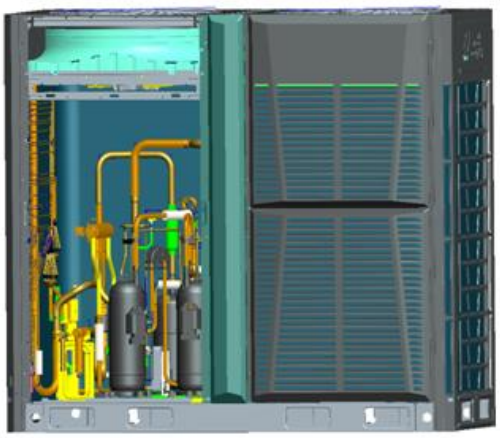


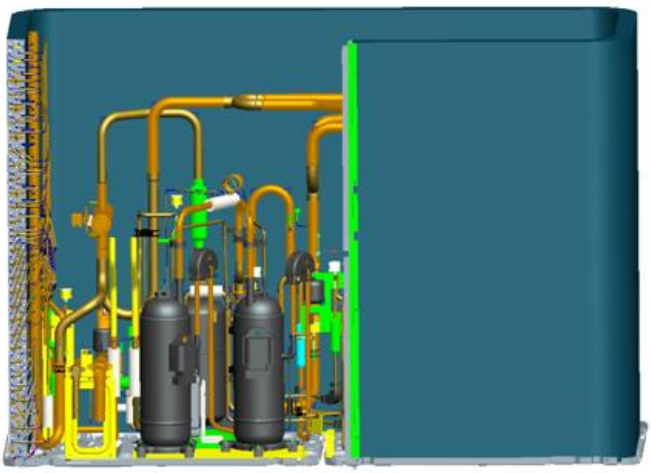
No.	Part name	Quantity	No.	Part name	Quantity
1	Top cover	2	23.11	Refrigerant cooling assembly	1
2	Top net	2	24	Condenser components	1
3	Air guide ring assembly	2	25	4-way valve components	1
4	Holder for fan motor	4	25.1	4-way valve coil	1
5	Holder for top cover	4	25.2	4-way valve	1
6	Holder for top cover	1	26	Plate heat exchanger components	1
7	Rear beam support assembly	3	26.1	Plate heat exchanger	1
8	Right side panel assembly	1	26.2	Electronic expansion valve	1
9	Upper panel	1	26.3	Electronic expansion valve coil	1
10	Lower panel	1	27	High pressure liquid pipe assembly	1
11	Front-middle post components	1	27.1	Electronic expansion valve coil	1
12	Chassis components	1	27.2	Electronic expansion valve	1
13	Lower panel	1	28	Compressor exhaust components	1
14	The lower-holder for electronic control box components	1	28.1	High pressure switch	1
15	Left side panel assembly	1	29.1	SV8A Solenoid valve components	1
16	Upper panel	1	29.2	SV8B Solenoid valve components	1
17	Front-holder components	1	30	Compressor suction pipe assembly	1
18	Back panel	2	30.1	Low pressure switch	1
19	Back-middle post	1	32	Needle valve components	1
20	DC fan motor	2	33	High pressure valve assembly	1
21	Axial fan blade	1	34	Oil return capillary components	1
22	Axial fan blade	1	35	SV4 Solenoid valve components	1
23	Electronic control components	1	36	Oil separator	1
23.1	Current Transformer	2	37	Gas-liquid separator	1
23.2	Outdoor Main PCB	1	38	Inverter compressor AA55	1
23.3	Filter board(60A)	1	39	Inverter compressor AA55	1
23.4	Communication terminal board	1	40	High pressure sensor	1
23.5	IPM board(HMD3W-8C00/AA55PHD G-D1Y2)	1	41	Exhaust temperature sensor-2 pins-red	1
23.6	IPM board(HMD3W-8C00/AA55PHD	1	42	Exhaust temperature sensor-2 pins-white	1

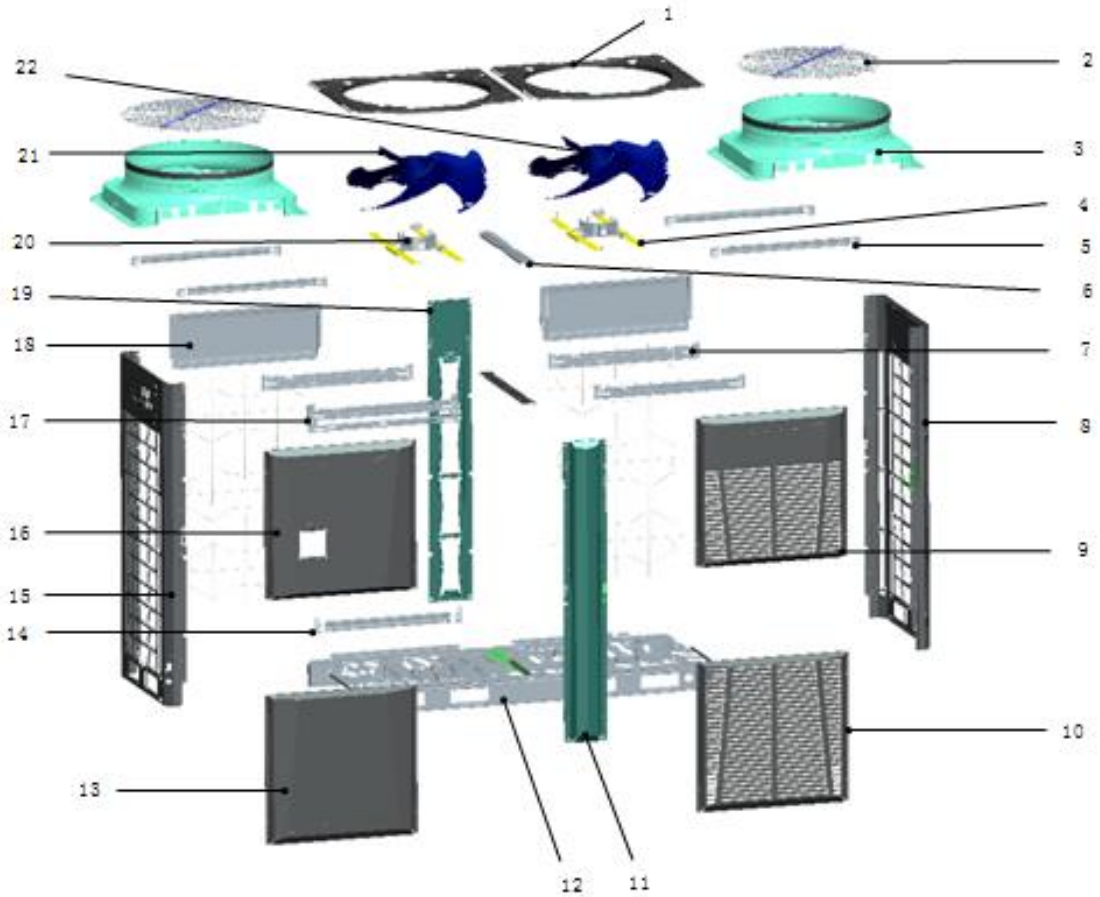
	G-D1Y2)				
23.7	Fan motor module board	2	43	Ambient temperature sensor-2 pins-white	1
23.8	Single-phase rectifier bridge	2	44	Condenser temperature sensor-3 pins-black	1
23.9	Reactor	2	45	Plate heat exchanger pipe temperature sensor (T6A/T6B)-2 pins-yellow	2
23.10	Fan module heat sink	1	46	Refrigerant cooling pipe temperature sensor-2 pins-black	1

9.6 VMEP024(26,28,29)Q7A







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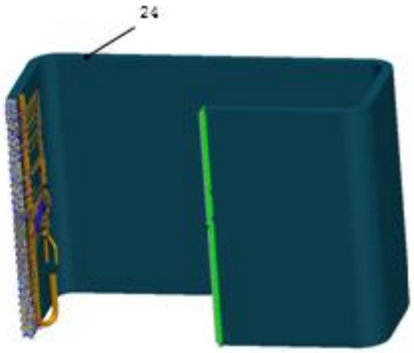
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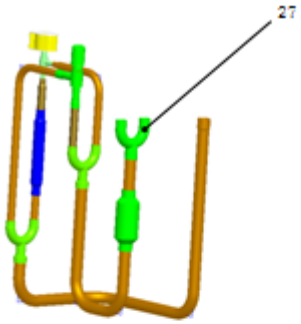
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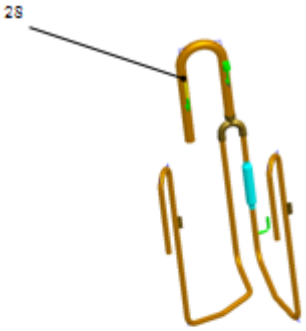
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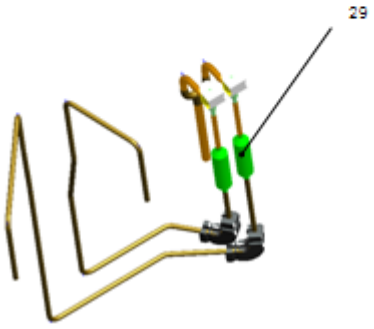
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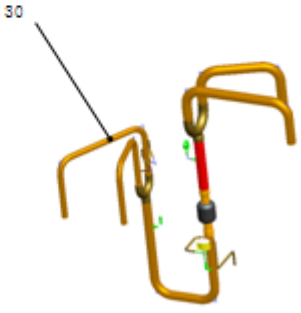
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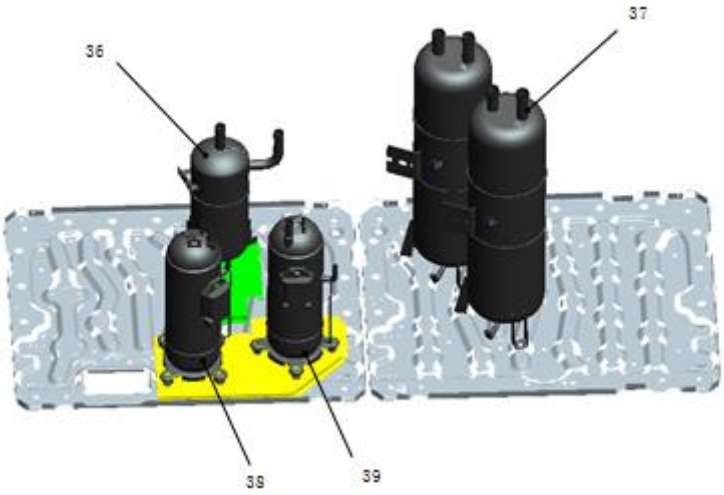
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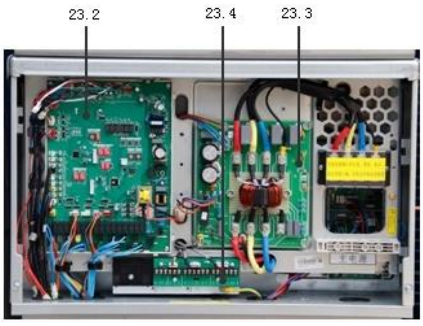
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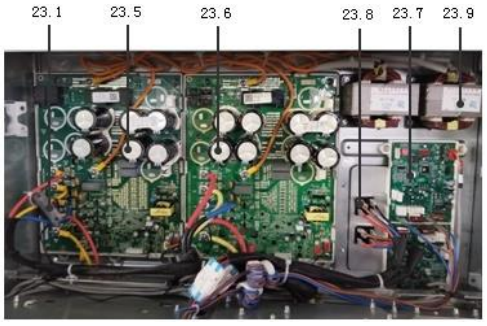
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No.	Part name	Quantity	No.	Part name	Quantity
1	Top cover	2	23.11	Refrigerant cooling assembly	1
2	Top net	2	24	Condenser components	1
3	Air guide ring assembly	2	25	4-way valve components	1
4	Holder for fan motor	4	25.1	4-way valve coil	1
5	Holder for top cover	4	25.2	4-way valve	1
6	Holder for top cover	1	26	Plate heat exchanger components	1
7	Rear beam support assembly	3	26.1	Plate heat exchanger	1
8	Right side panel assembly	1	26.2	Electronic expansion valve	1
9	Upper panel	1	26.3	Electronic expansion valve coil	1
10	Lower panel	1	27	High pressure liquid pipe assembly	1
11	Front-middle post components	1	27.1	Electronic expansion valve coil	1
12	Chassis components	1	27.2	Electronic expansion valve	1
13	Lower panel	1	28	Compressor exhaust components	1
14	The lower-holder for electronic control box components	1	28.1	High pressure switch	1
15	Left side panel assembly	1	29	SV8 Solenoid valve components	1
16	Upper panel	1	30	Compressor suction pipe assembly	1
17	Front-holder components	1	30.1	Low pressure switch	1
18	Back panel	2	31	Gas-liquid separator connection assembly	1
19	Back-middle post	1	32	Needle valve components	1
20	DC fan motor	2	33	High pressure valve assembly	1
21	Axial fan blade	1	34	Oil return capillary components	1
22	Axial fan blade	1	35	SV4 Solenoid valve components	1
23	Electronic control components	1	36	Oil separator	1
23.1	Current Transformer	2	37	Gas-liquid separator	2
23.2	Outdoor Main PCB	1	38	Inverter compressor	1
23.3	Filter board	1	39	Inverter compressor	1
23.4	Communication terminal board	1	40	High pressure sensor	1
23.5	IPM board	1	41	Temperature sensor-2 pins-white	1
23.6	IPM board	1	42	Exhaust temperature sensor-2 pins-red	1
23.7	Fan motor module board	2	43	Exhaust temperature sensor-2 pins-white	1
23.8	Single-phase rectifier bridge	2	44	Ambient temperature sensor-2 pins-white	1
23.9	Reactor	2	45	Condenser temperature sensor-3 pins-black	1
23.10	Fan module heat sink	1	46	Plate heat exchanger pipe temperature sensor (T6A/T6B)-2 pins-yellow	2
			46	Refrigerant cooling pipe temperature sensor-2 pins-black	1

OMEGA
ENVIRONMENTAL
TECHNOLOGIES LLC.

17702 Mitchell North, #101
Irvine, CA. 92614 .USA
Tel: 714 795 2830
Fax: 714 966 1646
info@omegavrf.com
www.omegavrf.com

OTEC™
AIR CONDITIONING

Showroom & Technology Center
11380 Interchange Circle North
Miramar,FL 33025 .USA
Tel: 305 901 1270
Fax: 954 212 8280
info@otecomega.com
www.otecomega.com

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