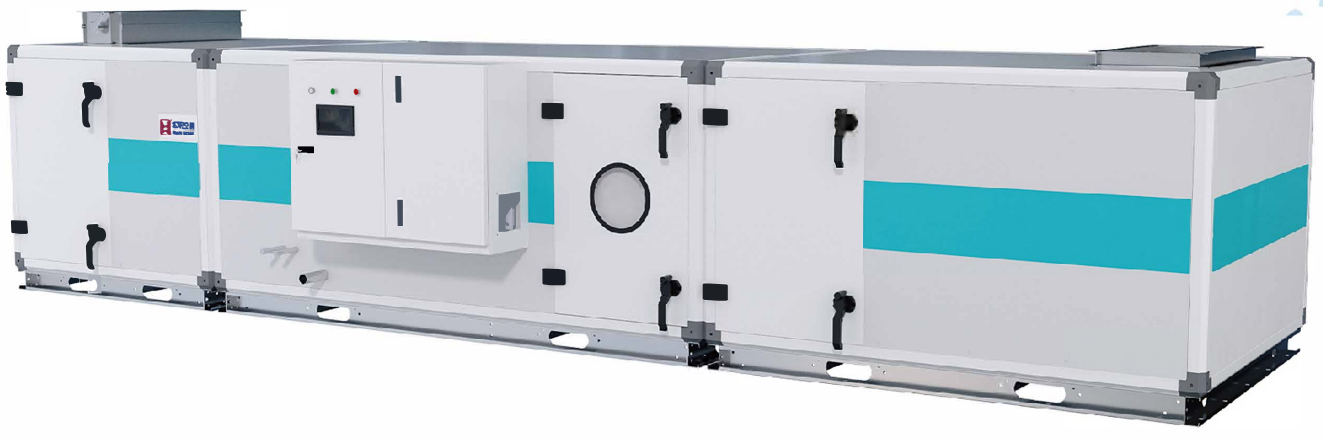
宏明空调
HON MING



组合直膨式净化空调机组

Direct Expansion Air Handling Unit

企业简介

ENTERPRISE INTRODUCTION

宏明空调
HON MING

源自香港 SINCE 1993

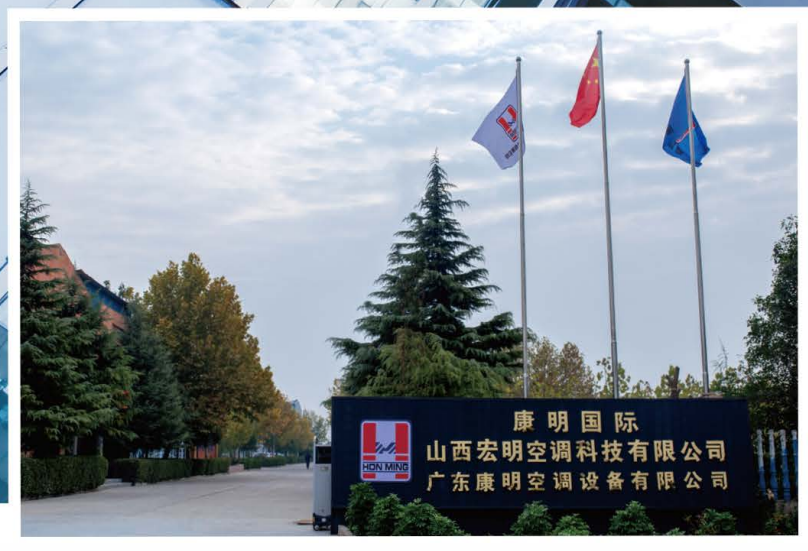
Founded in HONG KONG 1993, HON MING TECHNOLOGY GROUP is a professional comfortable & energy-saving air conditioner and cooling tower manufacturer which can provide full range of energy system solutions. Our cooling technology is widely used in many key projects in all over the world, such as Egypt, Philippines, Bangladesh, Vietnam, America, Singapore,UAE etc.

HON MING TECHNOLOGY GROUP' s production base is located in Salt Lake Industrial Zone, Yuncheng City, Shanxi Province. The group provide high energy efficiency, high quality, green and pro-environment cooling tower, air conditioner equipment and energy systems to market. HON MING is specialized in the design, production and sales of various air conditioner, air handling unit, SS304 cooling tower, closed/open, cross flow, counter flow square cooling tower, FRP industrial cooling tower etc. HON MING integrates the energy system design, equipment installation, maintenance, energy management service.

HON MING HVAC products: air cooled / water cooled chiller unit, air cooled heat pump unit, DX Modular Air Handling Unit,integrated double high-efficiency water cooled chiller(heat pump) unit, air-cooled screw chiller(heat pump) unit, Flooded Type screw chiller(heat pump) unit, high-efficiency centrifugal chiller unit and low-temperature chiller unit. Terminal products: combined type air handling unit, fan coil unit, cabinet type air handling unit,fresh air air handling unit. Industrial purifying field: air-cooled / water-cooled DX constant temperature and humidity air handling unit, medical purifying combined type air handling unit, heat recovery fresh air handling unit, etc. The products had passed ISO 9001 quality management system certification, ISO 14001 environmental management system certification, OHSAS18001 occupational health and safety system certification.HON MING faith is "Innovation based, quality orientation", development idea is "self-development, self-innovation".

HON MING cooperated with Tianjin University, Tianjin Chengjian university, etc. HON MING insist "Focus on quality,R&D as innovation and high-quality service to win the market".

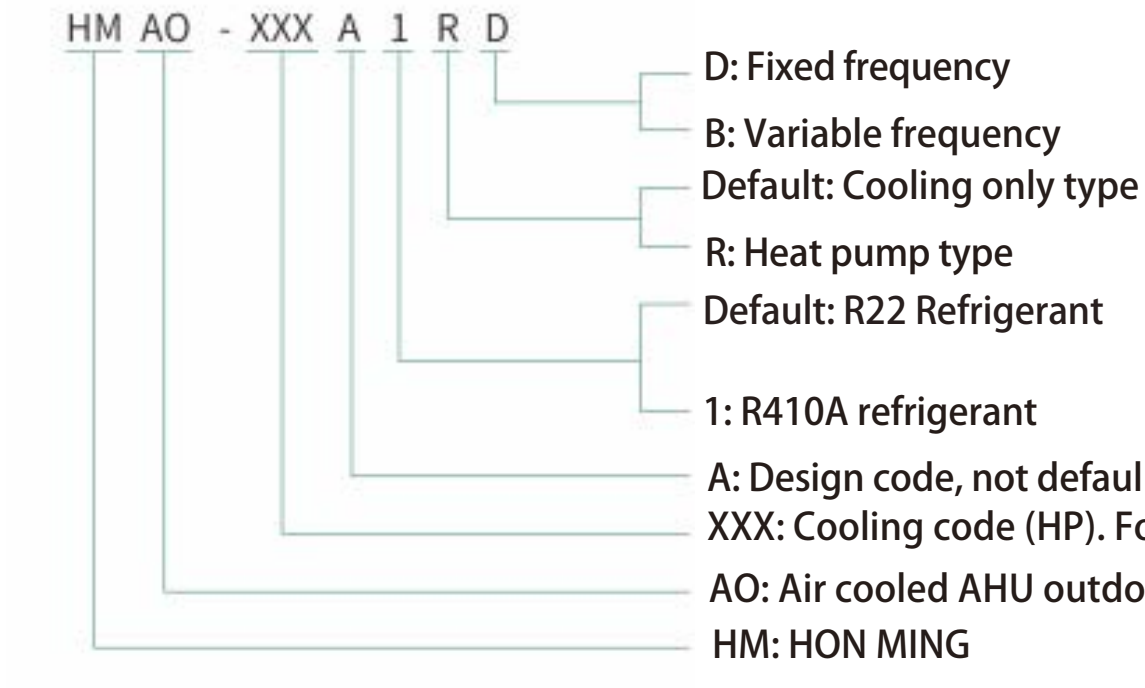
HON MING always adhere to people-oriented, attract excellent talents, create high efficiency, energetic and responsible team. With high efficiency, energy-saving and pro-environment products bring better life for human! Welcome partners from all over the world join with HON MING to contributions the energy saving and emission reduction!



目录 list

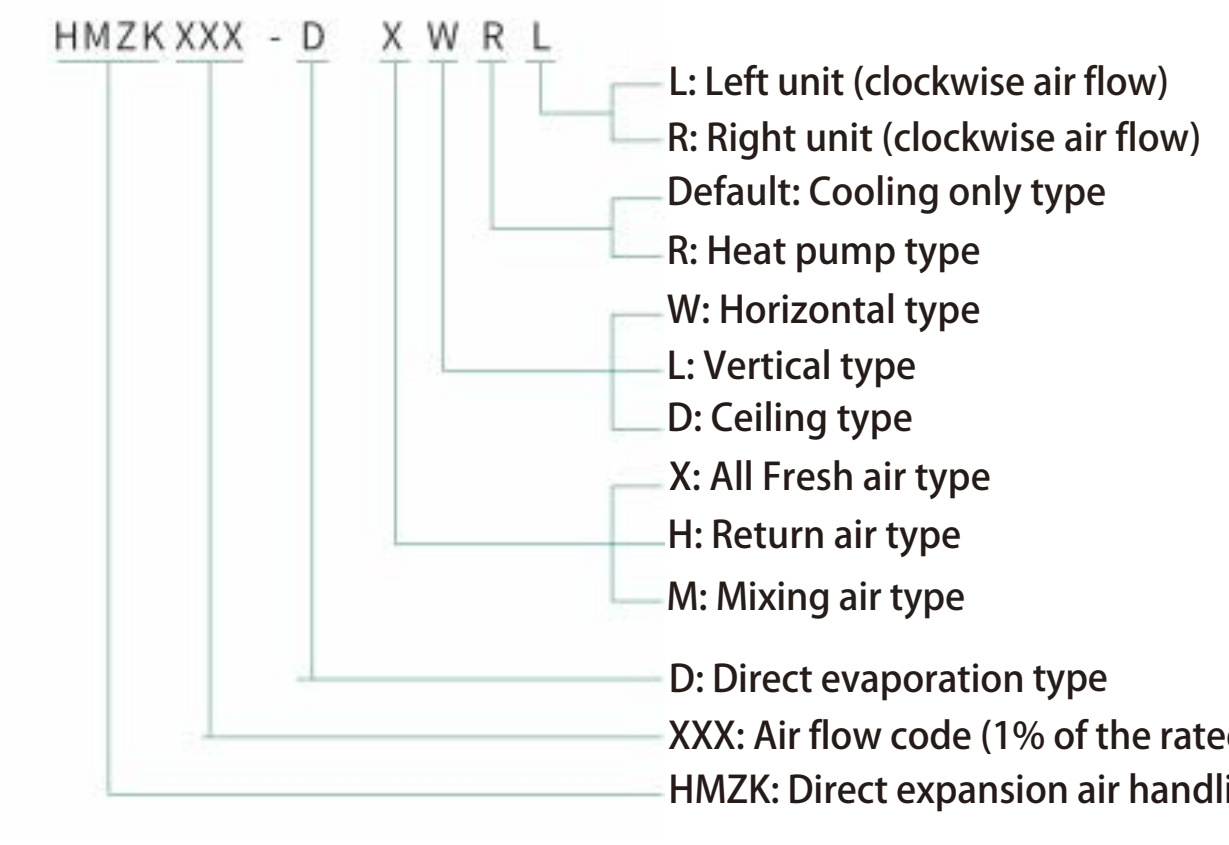
Model Naming

Outdoor unit model naming



Model example
HMAO-100A1: Air-cooled outdoor unit, cooling capacity is 10HP, use R410A environment-friendly refrigerant.

Indoor unit model naming

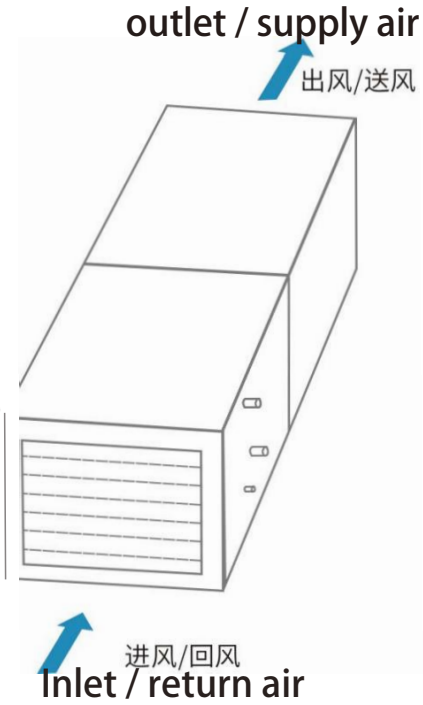


Model example
HMZK-100DXWL: Horizontal all fresh air direct expansion air handling unit, air flow is 10000m3/h, faces the clockwise air flow direction, left piping.

AHU left and right type distinguish(as shown on the right)

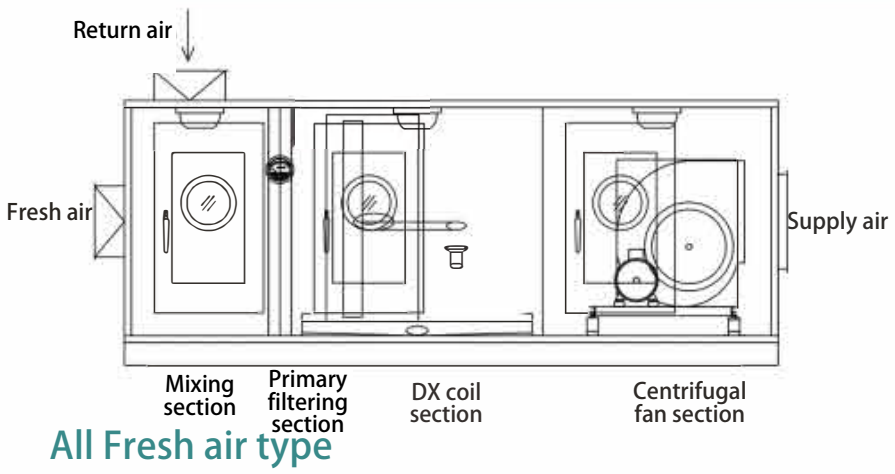
1. Without plate or wheel heat recovery, clockwise air flow direction, piping on the right side, it is right unit, otherwise it is left unit.
2. With plate or wheel heat recovery, clockwise fresh air flow direction, piping on the right side, it is right unit, otherwise it is left unit.

This unit is right type

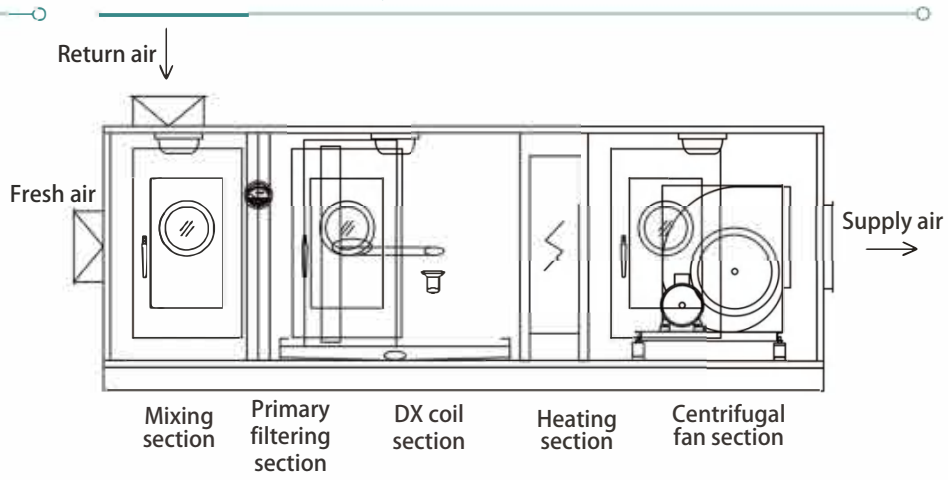


DX AHU Section Combination Mode

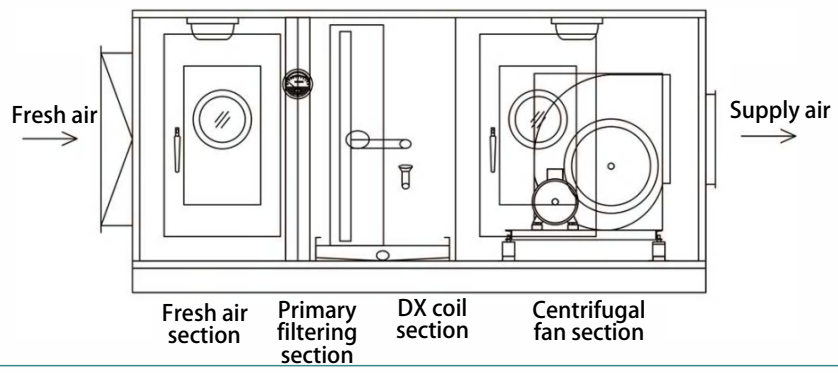
Cooling only (heat pump) type



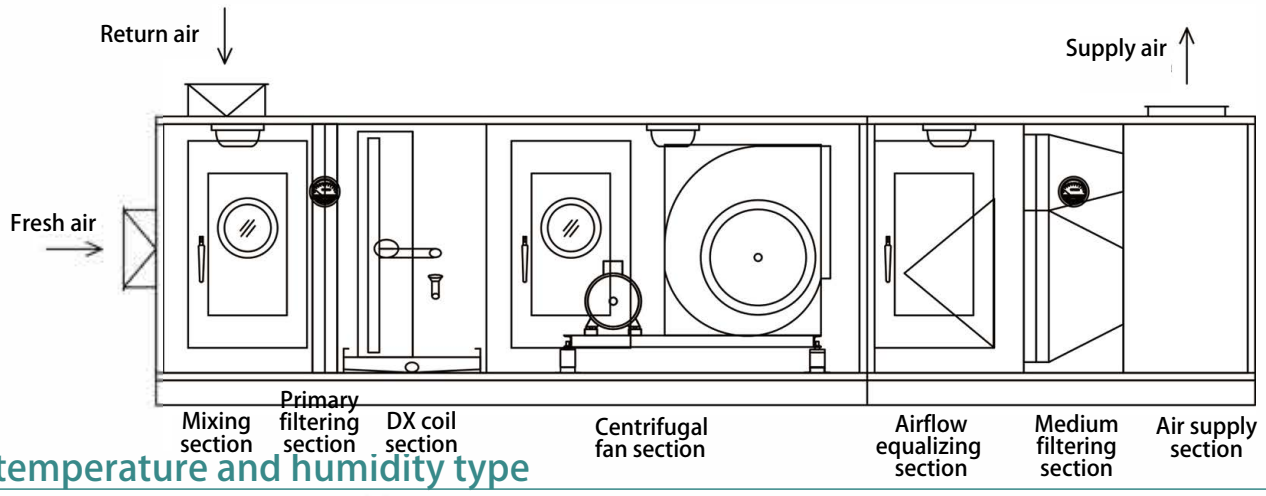
Electric heating type



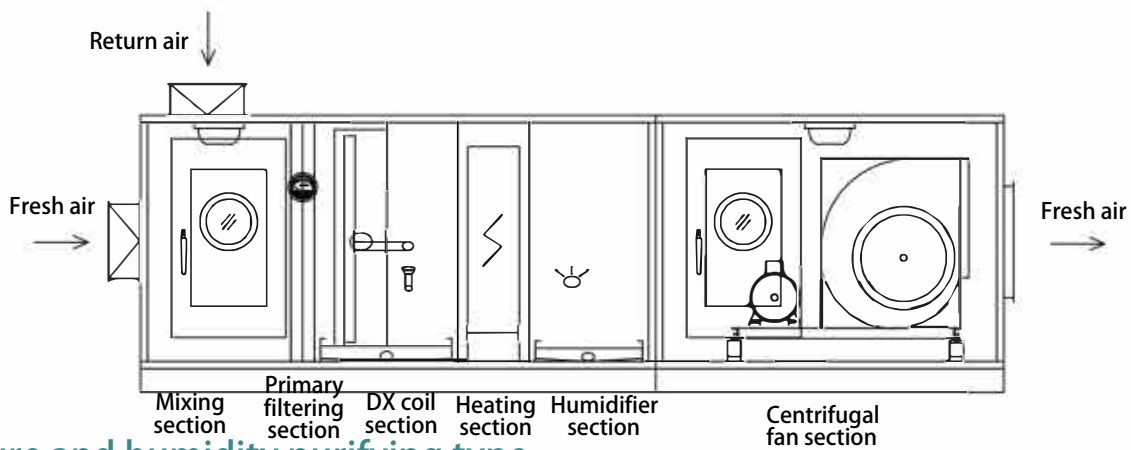
All Fresh air type



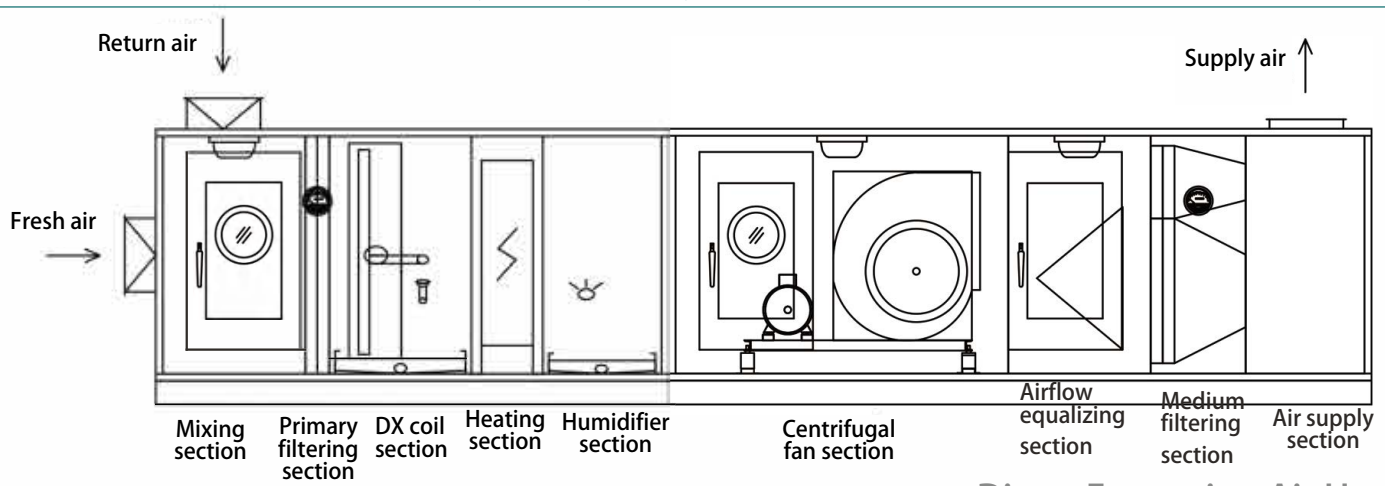
Purifying type



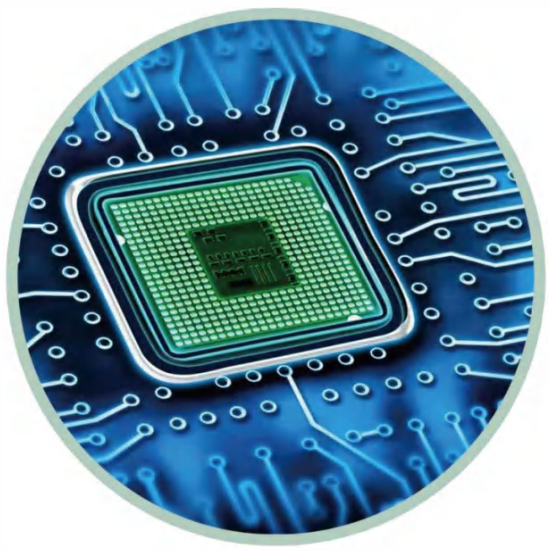
Constant temperature and humidity type



Constant temperature and humidity purifying type



Product Description



Energy saving and high efficiency

With cold & hot source, integrates air handling & automatic control. Less investment, simple system, high efficiency.

Save space

Air cooled design, no need machine room, saves space.

Simple maintenance

Each system can independent maintenance, other systems can run normally.

Low investment

Indoor and outdoor unit use copper pipe connection, no need cooling tower, cooling water pump, chiller water pump and connecting pipe. Simple control, low cost.

Easy installation

Plug and play

HON MING HMZK-D series DX AHU adopts latest air source compression & condensation and air handling technology. Especially suitable for medical care and public health, bio-pharmaceutical, micro-electronics, automobile manufacturing, experimental research, food processing, schools, etc. The unit technical advantages: Built-in cold source, customized air handling, and control integration. The simplified system structure can realize flexible distributed applications, save engineering construction and operation costs, simple and high efficiency.

HMZK-D series DX AHU is composed of indoor combined air handling unit and outdoor chiller unit. Including: Cooling only type, heat pump type, purifying type, constant temperature and humidity type, fresh air type, etc. Indoor combined air handling unit can customized according special air handing needs of all walks of life.

宏明空调
HON MING
源自香港1993

Professional Model Selection Software

National Certificate

Strong R&D Team

Product Features

Modular design

Indoor combined air handling unit adopts modular design, each module 100 mm, can flexibly design the height and width according to installation site conditions, flexible installation. AHU can be delivered as a whole, or assembled on site as required.

Unique cooling bridge aluminum alloy frame

High quality T6 aluminum alloy extrusion molding, excellent strength, beautiful appearance

Double layer panel, excellent heat insulation

Adopt 30-50mm thickened double layer panel.
Panel material can adopts high quality color steel plate, galvanized steel plate, stainless steel plate, or Zn-Mg-Al coated steel plate.
Intermediate rigid polyurethane environmental protection material overall foaming molding, has best performance in heat insulation, sound insulation, fire prevention, strength, service life, cleanliness.

High quality components, high efficiency&low noise

Outdoor chiller unit adopts famous brand fully enclosed scroll compressor, high efficiency, low noise and strong liquid impact resist. Indoor combined air handling unit adopts high quality double air inlet centrifugal fan (AMCA certified fan) or plenum fan (optional) or EC fan (optional). Fan impeller and belt tested by dynamic and static balance before leaving the factory, and equipped with anti-vibration measures, Low vibration, low noise operation, and longer life.

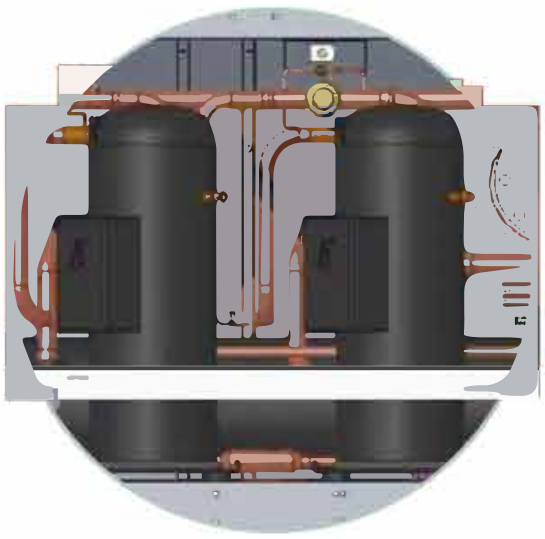
Product Features

Advanced control, reliable operation

Using SCM or PLC control system, operation panel can choose text manual operate or LCD touch screen, controller built-in fuzzy control or PID control, user-friendly interface, easy operation, high reliability. Main electrical components adopt international famous brands Siemens etc, low failure rate and long life, can provide RS485 communication interface for remote monitoring.

Excellent quality heat exchanger

Optimized and improved coil gap and copper tube matching aluminum fin structure, with high heat exchange efficiency and large heat exchange coefficient, ensure excellent heat transfer performance. Specially treated aluminum fins improve fins anti-corrosion performance and heat exchanger durability.



Excellent internal pipeline structure

Using pipeline simulation design technology, perfect stress data analysis to prevent leakage. It effectively avoid the resonance cause by pipeline and transportation vibration, reduce pipeline damage, increase pipeline noise absorption ability and reduce operation noise.

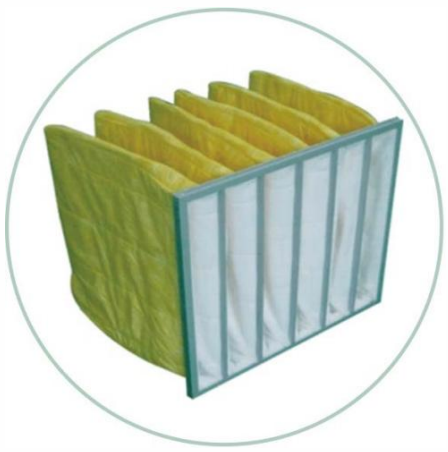
Humanized design

Adopt full frame structure. All panels are detachable for easy installation and maintenance. With access door for quick inspection and maintenance of internal components. All maintenance work on the single side, no need to reserve another side maintenance space. All components sharp angle passivation treatment.

International famous brand filters

Various filter levels are optional. Reasonable filter levels configuration can ensure best effect of each level filter. Optional: Chemical filter, Electronic purification filter.

High voltage electrostatic filter

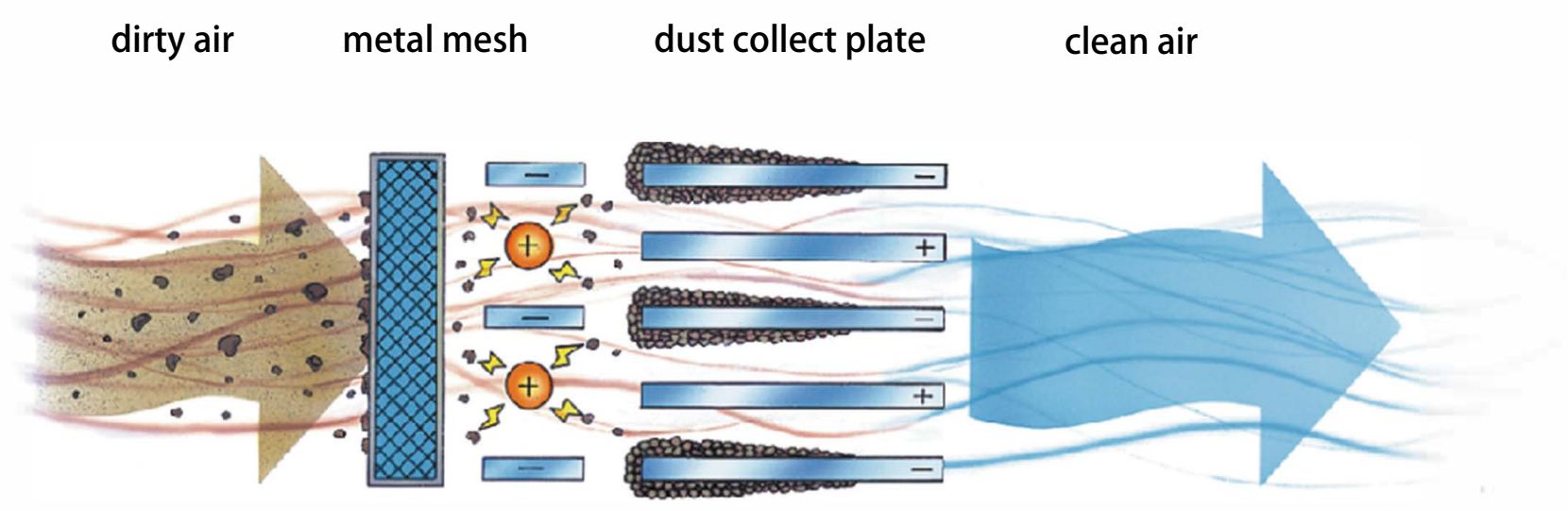


bag filter

plate filter

roller filter

chemical filter



Electronic Purification Principle

DX AHU (Heat Pump Type) Parameters

Model												
Indoor unit			HMZK060 DHWR	HMZK070 DHWR	HMZK090 DHWR	HMZK110 DHWR	HMZK130 DHWR	HMZK160 DHWR	HMZK180 DHWR	HMZK260 DHWR	HMZK300 DHWR	HMZK410 DHWR	HMZK490 DHWR
	Outdoor unit	Model	HMAO100	HMAO120	HMAO170	HMAO200	HMAO240	HMAO300	HMAO360	HMAO480	HMAO600	HMAO720	HMAO960
		Qty	1	1	1	1	1	2	2	2	3	3	4
Cooling capacity		kW	28.2	34.2	51	59.2	68.8	86.5	102.3	132.4	171.1	199.5	266
Heating capacity (Heat pump type)		kW	30.4	36.6	54.4	62.2	72.6	92.6	107.4	142.8	182.4	214.1	282
Indoor unit	Air flow	m^3/h	6100	7100	9100	11000	13000	16000	18000	25400	30000	41300	48600
	Size	L (mm)	Depending on the function section quantity										
		W (mm)	1260	1460	1460	1660	1660	1860	1960	2160	2360	2460	3000
		H (mm)	960	960	1160	1260	1460	1460	1560	1760	2060	2360	2500
	Excess pressure	Pa	700	700	700	700	700	700	700	700	700	700	700
	Motor power	kW	4	5.5	5.5	7.5	11	11	11	15	18.5	22	30
Temperature control range		-	16-30°C										
Outdoor unit	Compressor type		Fully closed vortex compressor										
	Size	L (mm)	1100	1100	1250	1250	1250	1250(1100)	1250(1100)	1250	1250(1100)	1250	1250
		W (mm)	1050	1050	1200	1200	1200	1200(1050)	1200(1050)	1200	1200(1050)	1200	1200
		H (mm)	1174	1174	1365	1365	1365	1365(1174)	1365(1174)	1365	1365(1174)	1365	1365
	Voltage	-	380V /3N~50Hz										
	Power	kW	9.3	11	14.2	18.9	21.5	28.4	32.3	45.8	55.4	68.7	94.6
	Weight	kg	265	295	350	540	570	605	1490	1940	2260	2300	3000
Refrigerant	Type	-	R22										
	Charger	kg	3.75*2	4.5*2	6*2	7.5*2	9*2	9*2+3.75	9*3	9*4	9*5	9*6	9*8
Connecting pipe	Liquid pipe	Dia.Φ(mm)	12.7	12.7	15.88	15.88	15.88	15.88	15.88	15.88	15.88	15.88	15.88
		Qty	2	2	2	2	2	3	3	4	5	6	8
	Steam pipe	Dia.Φ(mm)	19.05	19.05	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6
		Qty	2	2	2	2	2	3	3	4	5	6	8
	Condensate pan pipe dia.	DN	25	25	25	25	25	25	32	32	32	32	32

Note

1 Cooling capacity is measured at air flow, indoor dry/wet bulb temperature is 27/19.5℃, outdoor dry bulb temperature is 35℃ condition determination.

2 Heating capacity is measured at air flow, indoor dry/wet bulb temperature is 20/ 15℃, outdoor dry/wet bulb temperature is 7/6℃condition determination.

3 Cooling capacity does not consider heating loss of fan motor, air flow refers to operating air flow under standard condition.

4 Outdoor unit has been charged with refrigerant before leaving the factory, specific charger is subject to the nameplate.

5 If the evaporation section adds water baffle, the length adds 200mm on the original basis.

6 Reference section length does not include access door length.

7 AHU performance test piping conditions: equivalent refrigerant pipe length is 7.5m (horizontal piping).

8 All models cannot be used for winter cooling.

9 All AHU are suitable for working conditions with fresh air ratio<15%. If the fresh air flow is not within this range,parameters will change.

10 Parameters are subject to change without prior notice due to improvements, please refer to AHU nameplate.

DX AHU (Constant Temperature and Humidity Type) Parameters

Model			HMZK060 DMWR	HMZK070 DMWR	HMZK090 DMWR	HMZK110 DMWR	HMZK130 DMWR	HMZK160 DMWR	HMZK180 DMWR	HMZK260 DMWR	HMZK300 DMWR	HMZK410 DMWR	HMZK490 DMWR
	Indoor unit												
	Outdoor unit	Model	HMAO100	HMAO120	HMAO170	HMAO200	HMAO240	HMAO300	HMAO360	HMAO480	HMAO600	HMAO720	HMAO960
		Qty	1	1	1	1	1	2	2	2	3	3	4
Cooling capacity		kW	26.2	31.8	51	54.6	64.6	80	95.1	123	160.3	190.2	253.6
Electric heating capacity		kW	18	21	27	31.5	40.5	45	54	76.5	90	120	144
Indoor unit	Air flow	m^3/h	6100	7100	9100	11000	13000	16000	18000	25400	30000	41300	48600
	Humidifier	Type	Electrode humidifier										
		Capacity (kg/h)	9	9	9	9	15	15	15	22	30	45	60
		Power (kW)	6.75	6.75	6.75	6.75	11.25	11.25	11.25	16.5	22.5	33.75	45
		Pipe dia. (DN)	DN15										
	Size	L (mm)	Depending on the function section quantity										
		W (mm)	1260	1460	1460	1660	1660	1860	1960	2160	2360	2460	3000
		H (mm)	960	960	1160	1260	1460	1460	1560	1760	2060	2360	2500
	Excess pressure	Pa	700	700	700	700	700	700	700	700	700	700	700
	Motor power	kW	4	5.5	5.5	7.5	11	11	11	15	18.5	22	30
Temperature control range		-	16-27℃ ±1℃										
Humidity control range		-	45-65% ±5%										
Outdoor unit	Compressor type		Fully closed vortex compressor										
	Size	L (mm)	1100	1100	1250	1250	1250	1250 (1100)	1250 (1100)	1250	1250 (1100)	1250	1250
		W (mm)	1050	1050	1200	1200	1200	1200 (1050)	1200 (1050)	1200	1200 (1050)	1200	1200
		H (mm)	1174	1174	1365	1365	1365	1365 (1174)	1365 (1174)	1365	1365 (1174)	1365	1365
	Voltage	-	380V /3N~50Hz										
	Power	kW	9.3	11	14.2	18.9	21.5	28.4	32.3	45.8	55.4	68.7	94.6
	Weight	kg	265	295	350	540	570	605	1490	1940	2260	2300	3000
Refrigerant	Type	-	R22										
	Charger	kg	3.75*2	4.5*2	6*2	7.5*2	9*2	9*2+3.75	9*3	9*4	9*5	9*6	9*8
Connecting pipe	Liquid pipe	Dia.Φ(mm)	12.7	12.7	15.88	15.88	15.88	15.88	15.88	15.88	15.88	15.88	15.88
		Qty	2	2	2	2	2	3	3	4	5	6	8
	Steam pipe	Dia.Φ(mm)	19.05	19.05	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6
		Qty	2	2	2	2	2	3	3	4	5	6	8
	Condensate pan pipe dia.	DN	25	25	25	25	25	25	32	32	32	32	32

Note

1 Cooling capacity is measured at air flow, indoor dry/wet bulb temperature is 23/17℃, outdoor dry bulb temperature is 35℃ condition determination.
2 If working conditions change, parameters will change, please contact HON MING for specific parameters.
3 Cooling capacity does not consider the heating loss of fan motor, air flow refers to operating air flow under standard condition.
4 Standard configuration is electric heating, also can use hot water coil or steam coil heating according to customer requirements.
5 Standard electric heating is auxiliary electric heating, secondary heating in winter needs to be calculated separately.
6 Outdoor unit has been charged with refrigerant before leaving the factory, specific charger is subject to the nameplate.
7 If the cooling coil section adds water baffle, the section length adds 200mm.
8 Reference section length does not include access door length.
9 AHU performance test piping conditions: equivalent refrigerant pipe length is 7.5m (horizontal piping).
10 Parameters are subject to change without prior notice due to improvements, please refer to AHU nameplate.

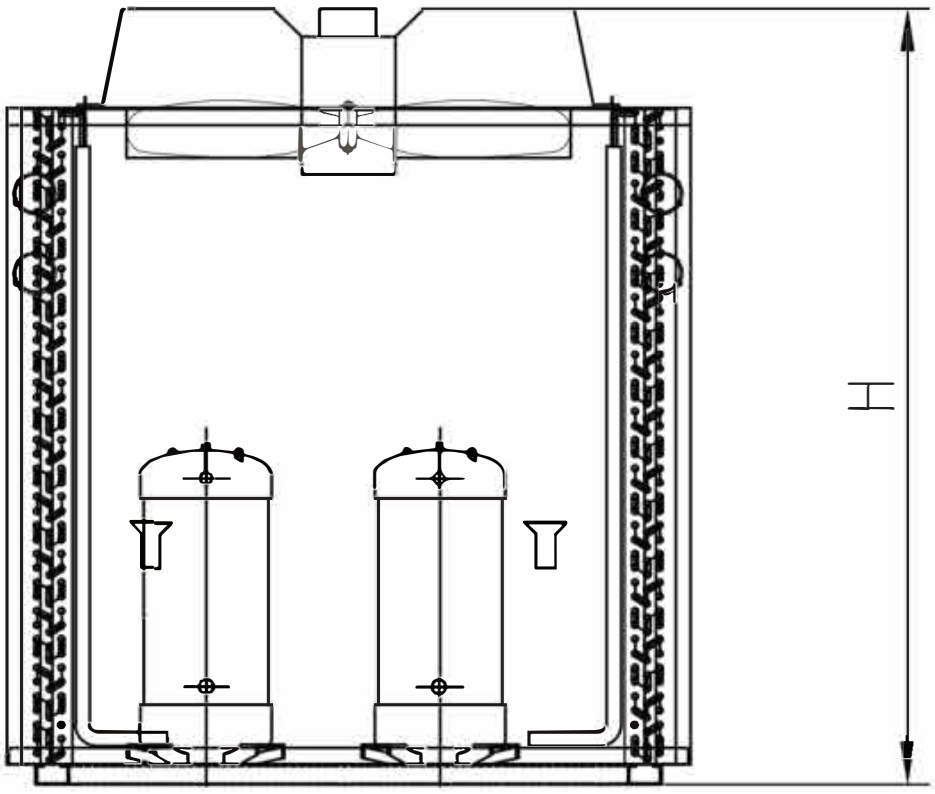
DX AHU (All Fresh Air Type) Parameters

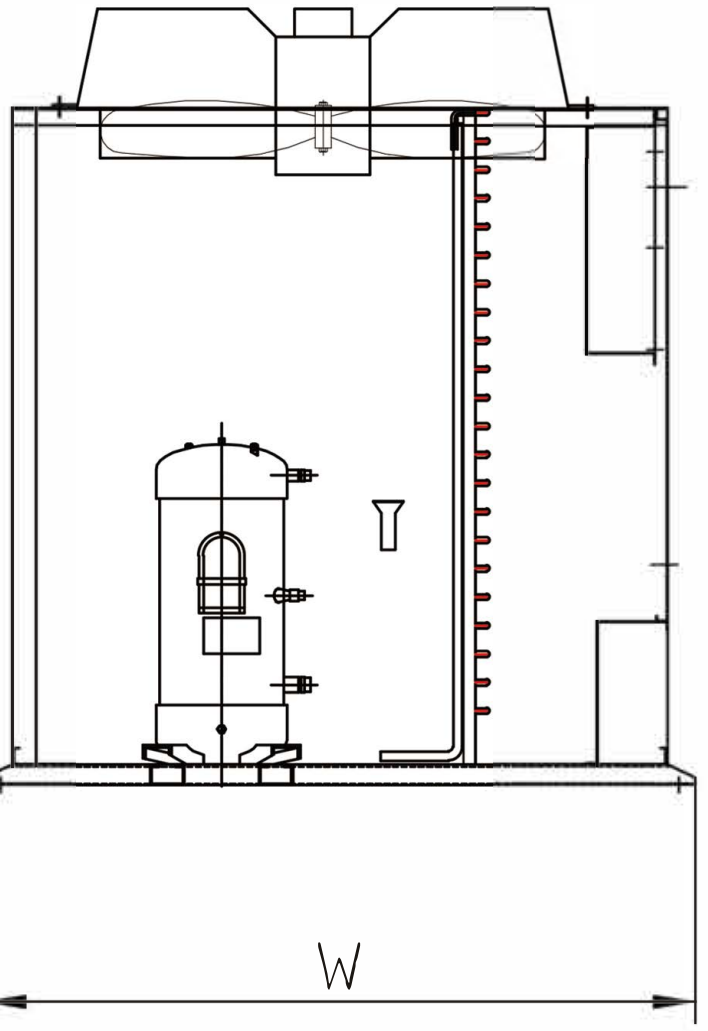
Model											
	Indoor unit		HMZK060 DXWR	HMZK070 DXWR	HMZK090 DXWR	HMZK110 DXWR	HMZK130 DXWR	HMZK160 DXWR	HMZK180 DXWR	HMZK260 DXWR	HMZK300 DXWR	HMZK410 DXWR
	Outdoor unit	Model	HMAO100	HMAO120	HMAO170	HMAO200	HMAO240	HMAO300	HMAO360	HMAO480	HMAO600	HMAO720
		Qty	1	1	1	1	1	2	2	2	3	3
Cooling capacity		kW	32.3	38.3	51	66.9	77.5	98	114.9	155.1	200.7	232.6
Heating capacity		kW	28.3	34.4	54.4	59.7	68.6	89.6	91.9	138.6	173.7	207.9
Indoor unit	Air flow	m^3/h	2800	3300	4300	5800	6700	8400	9800	14000	18000	20000
	Size	L (mm)	Depending on the function section quantity									
		W (mm)	860	1060	1160	1460	1260	1560	1660	1860	2160	2160
		H (mm)	860	860	960	960	1160	1160	1260	1460	1560	1760
	Excess pressure	Pa	700	700	700	700	700	700	700	700	700	700
	Motor power	kW	3	4	5.5	5.5	7.5	11	11	15	15	18.5
Temperature control range		-	16-30℃									
Outdoor unit	Compressor type		Fully closed vortex compressor									
	Size	L (mm)	1100	1050	1250	1250	1250	1250 (1100)	1250 (1100)	1250	1250 (1100)	1250
		W (mm)	1050	1100	1200	1200	1200	1200 (1050)	1200 (1050)	1200	1200 (1050)	1200
		H (mm)	1174	1174	1365	1365	1365	1365 (1174)	1365 (1174)	1365	1365 (1174)	1365
	Voltage	-	380V/3N~50Hz									
	Power	kW	9.3	11	14.2	18.9	21.5	28.4	32.3	45.8	55.4	68.7
	Weight	kg	265	295	350	540	570	605	1490	1940	2260	2300
Refrigerant	Type	-	R22									
	Charger	kg	3.75*2	4.5*2	6*2	7.5*2	9*2	9*2+3.75	9*3	9*4	9*5	9*6
Connecting pipe	Liquid pipe	Dia.Φ(mm)	12.7	12.7	15.88	15.88	15.88	15.88	15.88	15.88	15.88	15.88
		Qty	2	2	2	2	2	3	3	4	5	6
	Steam pipe	Dia.Φ(mm)	19.05	19.05	28.6	28.6	28.6	28.6	28.6	28.6	28.6	28.6
		Qty	2	2	2	2	2	3	3	4	5	6
	Condensate pan pipe dia.	DN	25	25	25	25	25	25	32	32	32	32

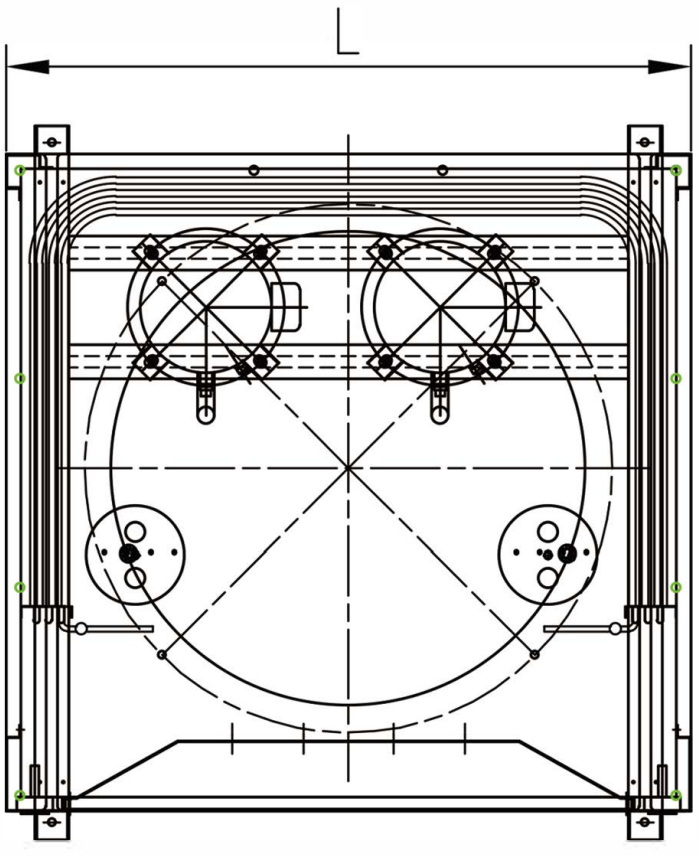
Note

1 Cooling capacity is measured at air flow, outdoor dry/wet bulb temperature is 35/28℃ condition determination.
2 Heating capacity is measured at air flow, outdoor dry/wet bulb temperature is 7/6℃condition determination.
3 Heating capacity does not consider the heating loss of fan motor, air flow refers to operating air flow under standard condition.
4 Outdoor unit has been charged with refrigerant before leaving the factory,specific charger is subject to nameplate.
5 If the evaporation section adds water baffle, the length adds 200mm.
6 Electric heating is optional. When adopts electric preheat for fresh air, indoor unit length adds 300mm.
7 Reference section length does not include access door length.
8 AHU performance test piping conditions: equivalent refrigerant pipe length is 7.5m (horizontal piping).
9 Fresh air unit only use for pretreat fresh air.
10 Parameters are subject to change without prior notice due to improvements, please refer to AHU nameplate.

Outdoor Chiller Unit Dimension Drawing







Model	L（mm）	W （mm）	H （mm）
HMAO -100	1050	1100	1174
HMAO -120	1050	1100	1174
HMAO -170	1200	1250	1363
HMAO -200	1200	1250	1363
HMAO -240	1200	1250	1363

AHU Performance Change Table

Elbow and Oil Storage Equivalent Length Table

Gas connecting pipe outer diameter	ϕ12.7	ϕ15.88	ϕ19.1	ϕ22.2	ϕ28.6	ϕ35	ϕ42
Elbow	0.25	0.3	0.35	0.4	0.5	0.55	0.6
Oil Storage elbow	2	2.2	2.4	3	3.7	4.1	4.8

Outdoor chiller unit connect pipe length and installation height difference will affect the cooling capacity (Refer to the table below)

			Cooling capacity correction factor									
Equivalent Total Length (m)		5	10	15	20	25	30	35	40	45	50	60
Height difference (outdoor unit higher than indoor unit)	0	1	0.98	0.96	0.94	0.92	0.90	0.88	0.86	0.84	0.82	0.8
	5	1	0.97	0.95	0.93	0.91	0.89	0.87	0.85	0.83	0.81	0.79
	10	-	0.96	0.94	0.92	0.90	0.88	0.86	0.84	0.82	0.80	0.78
	15	-	-	0.93	0.91	0.89	0.87	0.85	0.83	0.81	0.79	0.77
	20	-	-	-	0.90	0.88	0.86	0.84	0.82	0.80	0.78	0.76
	25	-	-	-	-	0.87	0.85	0.83	0.81	0.79	0.77	0.75
Height difference (outdoor unit lower than indoor unit)	0	1	0.98	0.96	0.94	0.92	0.90	0.88	0.86	0.84	0.82	0.80
	5	1	0.98	0.96	0.94	0.92	0.90	0.88	0.86	0.84	0.82	0.80
	10	-	0.98	0.96	0.94	0.92	0.90	0.88	0.86	0.84	0.82	0.80
	15	-	-	0.96	0.94	0.92	0.90	0.88	0.86	0.84	0.82	0.80
	20	-	-	-	0.94	0.92	0.90	0.88	0.86	0.84	0.82	0.80
	25	-	-	-	-	0.92	0.90	0.88	0.86	0.84	0.82	0.80

Purifying type/Constant temperature and humidity type

No.	Outdoor chiller unit	Oil replenishment			Note
	Model	⩾10m,One-time refill of oil (L)	⩾10m,Oil replenish per meter (L)	⩾10m,Refrigeration replenish per meter (kg)	
1	HMAO -100	0.45	0.015	0.11	Values in the table are the charger for a single system
2	HMAO -120	0.45	0.015	0.18	
3	HMAO -170	0.45	0.015	0.18	
4	HMAO -200	0.55	0.015	0.18	
5	HMAO -240	0.55	0.015	0.26	
6	HMAO -300	0.55	0.015	0.26	
7	HMAO -360	0.55	0.015	0.26	
8	HMAO -480	0.65	0.015	0.32	
9	HMAO -600	0.75	0.015	0.37	
10	HMAO -720	0.85	0.015	0.41	
11	HMAO -960	0.85	0.015	0.47	

AHU Performance Change Table

The influence of indoor and outdoor variable conditions on cooling and heating operation

Heat pump type (cooling)

Cooling capacity correction coefficient table		Indoor wet bulb temperature℃							
		17	18	19	20	21	22	23	24
Outdoor dry bulb temperature℃	25	1.037	0.092	1.113	1.134	1.152	1.165	1.176	1.187
	30	1.000	1.033	1.065	1.092	1.112	1.135	1.152	1.169
	35	0.922	0.961	1.000	1.032	1.065	1.091	1.101	1.111
	40	0.826	0.877	0.921	0.965	1.000	1.031	1.064	1.097
	45	0.761	0.821	0.868	0.913	0.966	0.995	1.028	1.061

Heat pump type (Heating)

Cooling capacity correction coefficient table		Outdoor dry bulb temperature℃											
		14	12	10	8	6	4	2	0	-2	-4	-6	-8
Indoor dry bulb temperature℃	10	1.235	1.188	1.152	1.118	1.079	1.036	0.991	0.941	0.897	0.835	0.775	0.771
	15	1.194	1.166	1.125	1.086	1.041	0.995	0.948	0.895	0.841	0.785	0.721	0.657
	20	1.171	1.132	1.092	1.051	1.000	0.956	0.908	0.846	0.791	0.729	0.663	0.600
	25	1.138	1.097	1.055	1.012	0.957	0.910	0.856	0.800	0.737	0.672	0.600	0.538

Purifying type/Constant temperature and humidity type

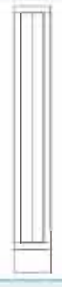
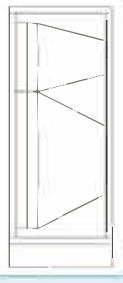
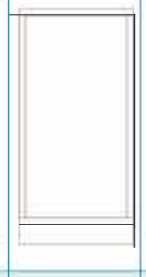
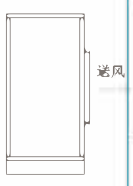
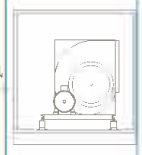
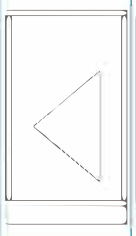
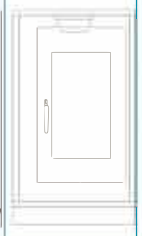
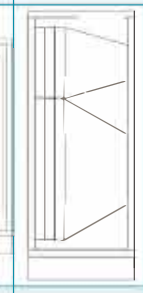
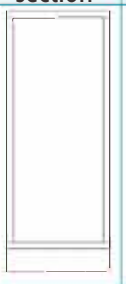
Cooling capacity correction coefficient table		Indoor wet bulb temperature℃							
		15	16	17	18	19	20	21	22
Outdoor dry bulb temperature℃	25	1.041	1.095	1.121	1.137	1.153	1.165	1.179	1.181
	30	1.000	1.039	1.071	1.095	1.119	1.131	1.147	1.155
	35	0.925	0.961	1.000	1.039	1.076	1.086	1.092	1.102
	40	0.857	0.910	0.931	0.957	1.000	1.044	1.063	1.074
	45	0.782	0.823	0.880	0.918	0.960	0.998	1.028	1.034

All Fresh air type (Cooling)

Cooling capacity correction coefficient table		Outdoor wet bulb temperature℃						
		16	17	20	24	26	30	34
Outdoor dry/wet bulb temperature℃	21/16	1.30	—	—	—	—	—	—
	24/17	—	1.25	—	—	—	—	—
	27/20	—	—	1.19	—	—	—	—
	30/24	—	—	—	1.12	—	—	—
	33/26	—	—	—	—	1.06	—	—
	36/30	—	—	—	—	—	0.97	—
	40/37	—	—	—	—	—	—	0.87

宏明空调
HON MING
源自香港1993

Other Section Length Parameters(Standard/Purifying/Constant Temperature and Humidity)

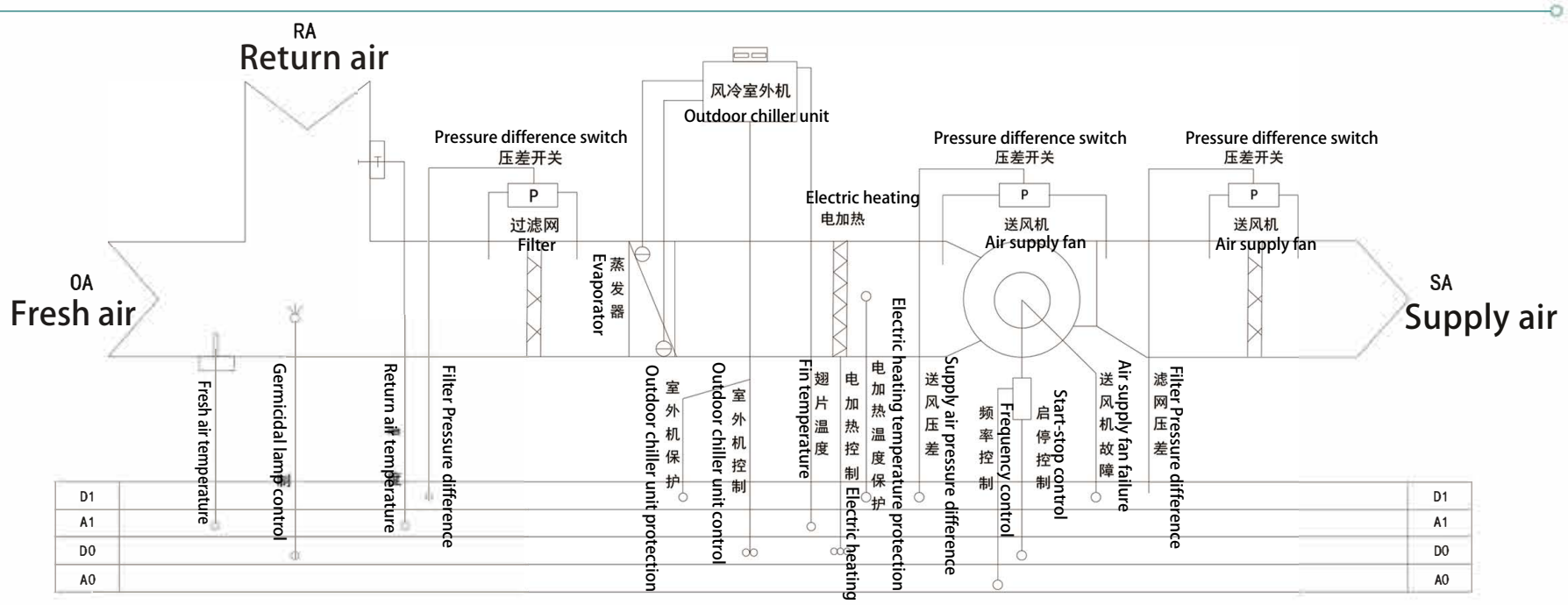
Model	Mixing section	Plate filter section	Bag filter section	Middle section	Heating section	Air outlet section	Fan section	Airflow equalizing section	Muffler section	Maintenance section	Primary and medium filter section	Electronic purification section	Humidifier section
Diagram													
ZK006	6	1	4	6	4	6	8	6	6	6	5	3	6
ZK007	6	1	4	6	4	6	8	6	6	6	5	3	6
ZK009	6	1	4	6	4	6	9	6	6	6	5	3	6
ZK011	7	1	4	6	4	7	12	6	6	6	5	3	6
ZK013	7	1	4	6	4	7	12	6	6	6	5	3	6
ZK016	7	1	4	6	4	7	12	6	6	6	5	3	6
ZK018	7	1	4	6	4	7	12	6	6	6	5	3	6
ZK020	7	1	4	6	4	7	14	6	6	6	5	3	6
ZK023	7	1	4	6	4	7	14	6	6	6	5	3	7
ZK026	7	1	4	6	4	7	14	6	6	6	5	3	7
ZK028	7	1	4	6	4	7	14	6	6	6	5	3	7
ZK030	7	1	4	6	4	7	15	6	6	6	5	3	7
ZK032	8	1	4	6	4	8	15	6	6	6	5	3	7
ZK038	8	1	4	6	4	8	15	6	6	6	5	3	7
ZK041	8	1	4	6	4	8	15	6	6	6	5	3	7
ZK042	8	1	4	6	4	8	15	6	6	6	5	3	8
ZK045	8	1	4	6	4	8	15	6	6	6	5	3	8
ZK049	8	1	4	6	4	8	15	6	6	6	5	3	8

Other Section Length Parameters (All Fresh air type)

Model	Air inlet section	Plate filter section	Bag filter section	Middle section	Heating section	Air outlet section	Fan section	Airflow equalizing section	Muffler section	Maintenance section	Primary and medium filter section	Electronic purification section	—
ZK003	6	1	4	6	4	6	8	6	6	6	5	3	
ZK004	6	1	4	6	4	6	8	6	6	6	5	3	
ZK005	6	1	4	6	4	6	8	6	6	6	5	3	
ZK006	6	1	4	6	4	6	8	6	6	6	5	3	
ZK007	6	1	4	6	4	6	8	6	6	6	5	3	
ZK008	7	1	4	6	4	7	12	6	6	6	5	3	
ZK010	7	1	4	6	4	7	12	6	6	6	5	3	
ZK012	7	1	4	6	4	7	12	6	6	6	5	3	
ZK014	7	1	4	6	4	7	12	6	6	6	5	3	
ZK018	7	1	4	6	4	7	14	6	6	6	5	3	
ZKO20	7	1	4	6	4	7	14	6	6	6	5	3	
ZK022	7	1	4	6	4	7	14	6	6	6	5	3	
ZK027	7	1	4	6	4	7	14	6	6	6	5	3	

Section Combination Control Diagram

Purifying Type DX AHU



Control Principle

- Summer cooling control: when return air temperature higher than set value, compressor starts cooling to meet set value requirements.
- Winter heating control: when return air temperature lower than set value, compressor starts the heat pump for heating to meet set value requirements. When the heat of heat pump is insufficient, start the electric heating.
- Intelligent defrosting: when detected fins frosted, unit will start defrost control and electric heating. Multi system operation will not defrost at the same time to avoid excessive room temperature fluctuations.
- Air supply fan frequency control: according to return air temperature, fan operates between 35-50Hz. When temperature≤expected value, fan frequency is 35Hz. When temperature＞expected value+precision value, fan frequency is 50Hz. When temperature is between expected value and expected value + precision value, fan frequency changes linearly.
- UV light sterilizer control:Can sets normally open or time switch,only can start after fan starts. It will delayed shutdown when the fan turned off, UV light sterilizer is linked with access door.

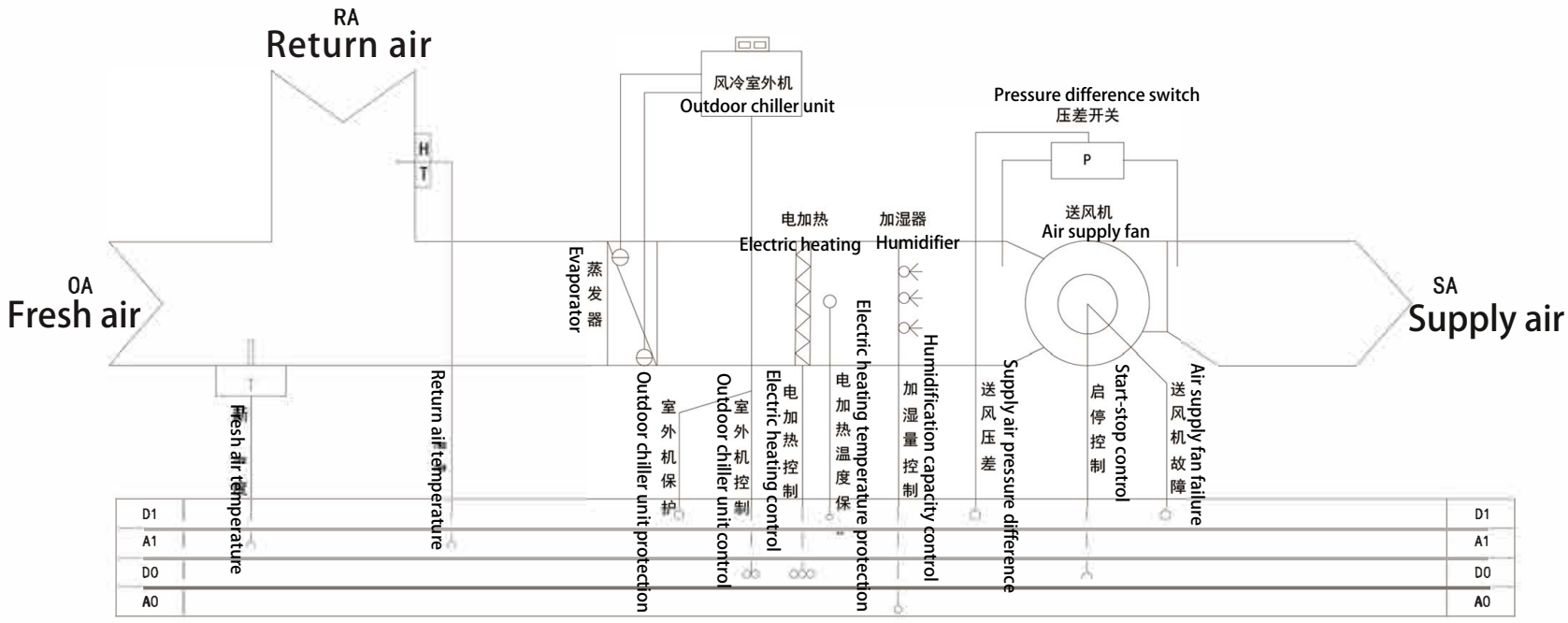
System Protection

- Air supply fan fault: system stops completely.
- Electric heating over temperature: power off heating.
- Air supply fan underwind protection: system stops completely.
- Filter pressure difference alarm: display alarm, does not affect the operation.
- Sensor fault: fresh air temperature sensor fault only display, return air temperature sensor fault cause system stops, fin temperature sensor fault cause corresponding compressor stops.
- Compressor high pressure, low pressure, overload, condensing fan overload, stop corresponding compressor and condensing fan.

Automatic Control Configuration

- AHU control system including human-machine interface, controller, sensor, etc.
- AHU is equipped with low-voltage electrical appliances, circuit breaker, contactor and thermal relay, etc.
- AHU can provide communication interface, support modbus-rtc Siemens S7, MP slave station, PROFIBUS-DP slave station and other protocols to meet remote monitoring requirements.

Purifying Type DX AHU



Control Principle

- Constant temperature and humidity control: when return air temperature or humidity is higher than set value, compressor starts cooling and dehumidification to meet set value requirements. In the process of dehumidification, if the temperature is lower than set value, adjust the heating capacity by electric heating to achieve heating. When return air humidity is lower than set value, turn on the humidifier for humidification, when fresh air temperature is lower than 18℃, stop the compressor cooling.

System Protection

- Air supply fan fault: system stops completely.
- Electric heating overtemperature: power off heating.
- Air supply fan underwind protection: system stops completely.
- Sensor fault: return air temperature and humidity sensor fault, system stops.
- Compressor high pressure, low pressure, overload, condensing fan overload, stop corresponding compressor and condensing fan.

Automatic Control Configuration

- AHU control system including human-machine interface, controller, sensor, etc.
- AHU is equipped with low-voltage electrical appliances, circuit breaker, contactor and thermal relay, etc.
- AHU can provide communication interface, support modbus-rtc Siemens S7, MP slave station, PROFIBUS-DP slave station and other protocols to meet remote monitoring requirements.

AHU Transportation, Carrying, Storage, Notes

Transportation and Carrying

● During carrying, choose correct carrying method according to packaging size, weight and final destination. Figures 1 to 4 list several suitable processing methods for reference.

● Figures 2 to 4 is hoisting: please use belt or sling to avoid damage to the outside. Firmly bind the base. If the site has handling bracket and cross arm, please adjust the balance to the correct position before lifting.

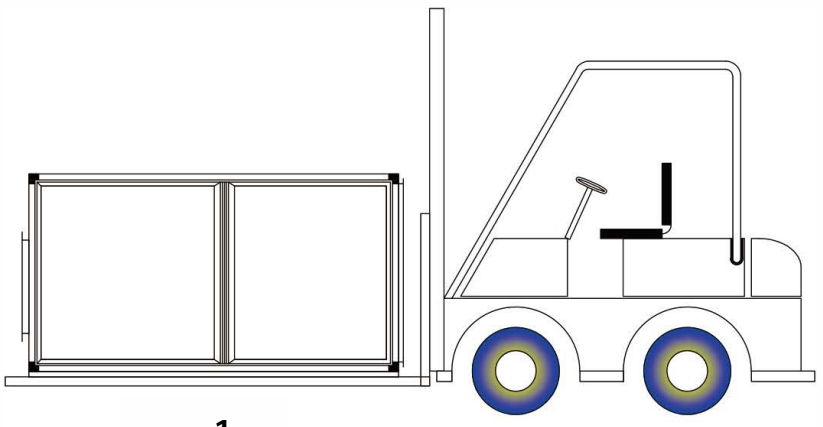
● In order not to damage the shell during lifting, please use spreader to ensure that the sling will not rub or wind with the frame and various external joints and control panel. Before lifting, test whether the lifting is strong enough and balanced. During lifting, avoid the left and right torsion and up and down shaking. When hoisting the fan section, must be careful. Almost all moving components in this section. All fans passed strict dynamic balance test before leaving the factory. Rough handling may cause the fan changes or shaft pin loose. Before the formal installation, should carefully check to ensure that above problems do not occur. Coil section and mixing section may have mufflers, also need careful care. All parts passed strict quality inspection before leaving the factory to ensure that no bolts, screws or other fixed parts are missing before delivery. After the arrival, immediately check whether there is loose or missing during transportation and report to HON MING in time.

Check and storage

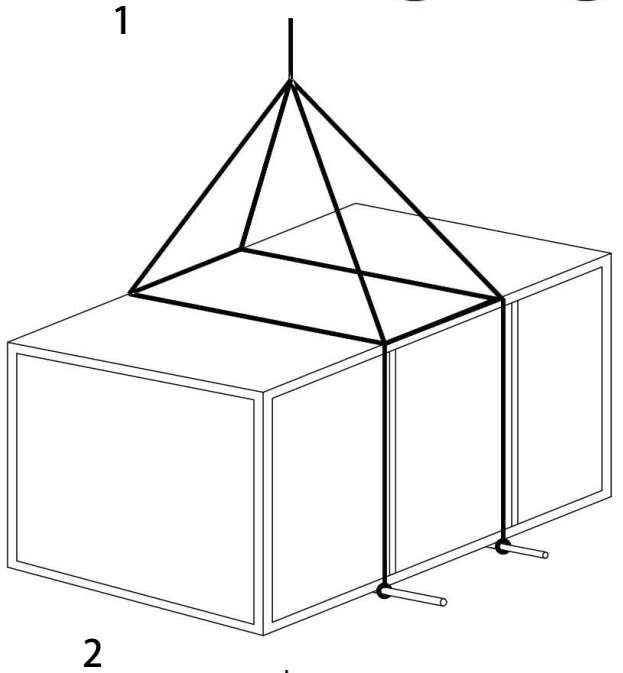
● Hand over and check immediately after the arrival. Receiver shoud check one by one according to the contract to ensure that all goods packed in wooden cases or cartons arrived and the outer packing is good.

● If there is obvious damage to the unit or outer packing, especially obvious mistake occurred in the transportation process, please list them one by one in the transportation receipt. Please send the signed reply letter describing the damage in detail to HON MING within 48 hours, and send the copy to project contractor or dealer.

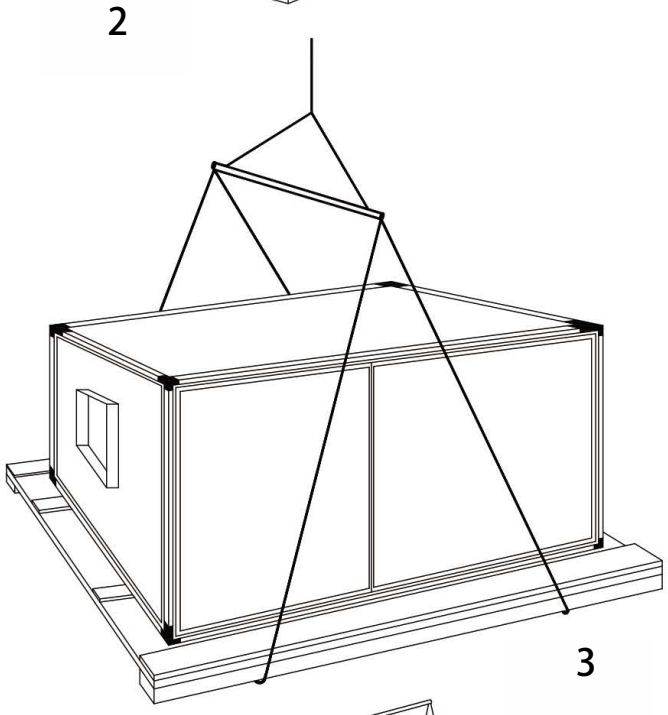
● If AHU does not need to be installed immediately, please keep the outer packing and store the goods in dry and clean place.



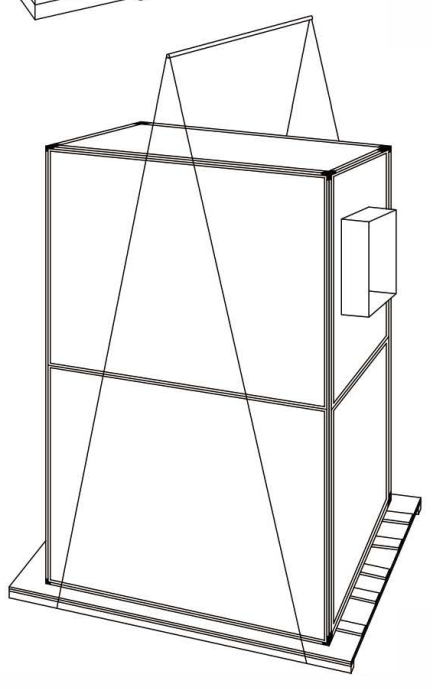
1



2



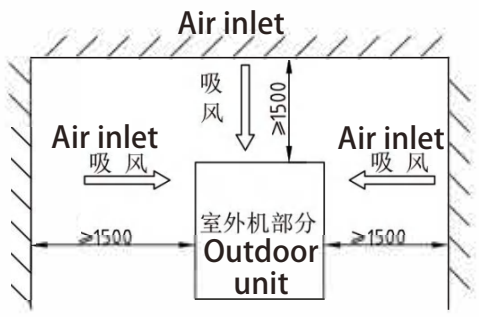
3

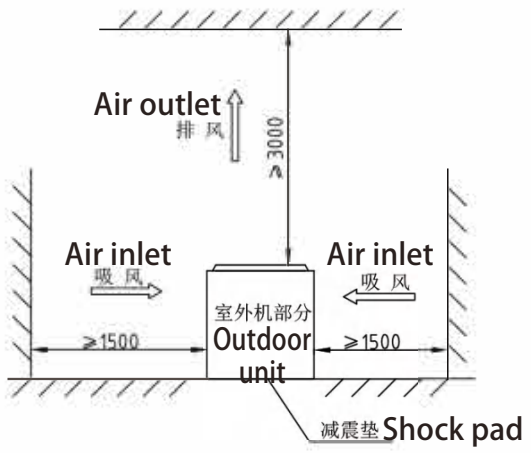


4

AHU Transportation, Carrying, Storage, Notes

Unit Layout





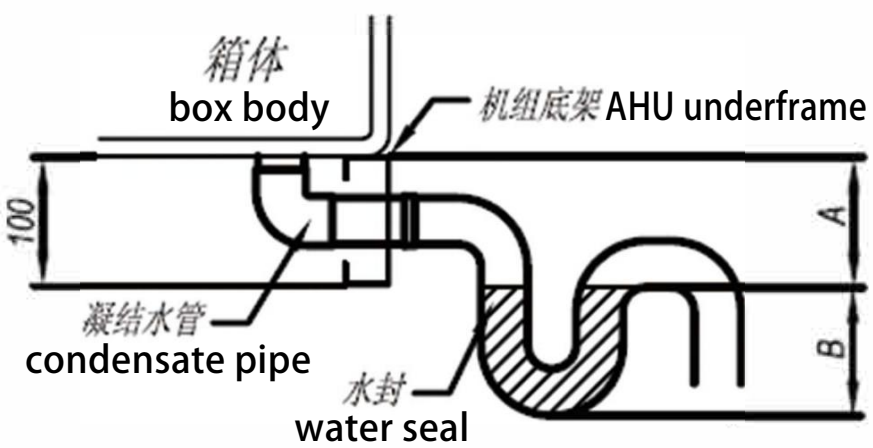
A. AHU can be installed on the roof, balcony and other clean, bright and well ventilated places. Avoid the influence of smoke, steam or other heat sources. Choose the place where noise, cold and hot air not affecting the surrounding environment and with convenient drainage and piping.
B. Condensing unit air outlet upward, should set shelter at the top to prevent rain and snow, which is easy to maintenance.
C. In order to ensure enough maintenance and ventilation space, there should be no obstacles within 2 meters, surrounding walls height should be lower than the bottom of condensing coil, ventilation space at the top should be more than 2 meters to avoid air flow short circuit.
D. Air inlet direction should avoid parallel to the monsoon direction as far as possible.
E. When connecting the air supply pipe, prefer to use soft joint to avoid the vibration. When opening air pipe hole on the foundation and floor, reserve operation space to facilitate the connection between air pipe and AHU. It is recommended that the length and width of the hole 150~200mm larger than that of air supply pipe. Air pipe connected with AHU must be properly fixed and supported to avoid force on AHU.
F. When there is height difference between indoor and outdoor units, set liquid check ring and oil return pipe when connect copper pipe.
G. Indoor unit can be installed on roof, ground or indoor, select corresponding configuration requirements.
H. The actual length of refrigerant piping between indoor and outdoor unit can reach 60m, vertical height difference can reach 25m. If need more than 60m, please consult HON-MING.

Foundation

● Ground foundation height should consider the height difference of trap water seal and the setting of the drainage pipe (see the figure below). Please set the floor drain in the computer room to discharge the condensate water and sewage when clean AHU.

● AHU four sides (especially filter and motor access door side) should have enough operation space to facilitate daily maintenance and overhaul.

● After installation, if the building decoration is still under construction, please do not damage the film packing to prevent the appearance and parts from being stained.



Piping

● Adopt flexible connection when connect external air inlet and outlet pipes to avoid vibration transmission and air pipe weight supported by AHU.

● It is recommended to use soft joint when connect external water inlet and outlet pipes, and balance the force when connect pipes. The piping of steam coil should be carried out according to professional specification to avoid permanent damage to the coil caused by thermal stress effect. Inlet and outlet piping of various coils should be connected in counter flow mode (flow direction of air and cold source is opposite).

● External drain pipe should be connected to "U" trap first to prevent condensate water drainage difficulty due to negative pressure. Set the height difference of trap water seal refer to twice height of negative pressure. See the figure below for water seal setting.

Coil on the negative pressure side: A≥P/10(mm),B≥P/20+10(mm)
Coil on the positive pressure side:A≥50(mm),B≥P/10+20(mm)
P - absolute value of static pressure in coil section (PA).

AHU Using and Maintenance

AHU Using

- Before operation, check the valves of refrigerant pipe and air duct and keep in normal operation.
- Regularly check and timely adjust the connection, movement and transmission of moving parts such as fan and motor.
- Clean the filter with water or cleaning agent according to dirt degree, cleaning frequency depends on the use environment.
- Filter creates resistance to air flow. The filter accumulates dust and the resistance increases. When the resistance increases to a certain value, the filter must be scrapped & replaced. Its judgment depends on the instrument, not the operator's feeling.

Recommended final resistance range

Filter efficiency specification	Recommended final resistance，pa
G3(primary efficiency)	100~200
G4(primary efficiency)	150~250
F5-F6(medium efficiency)	250~300
F7-F8(Medium and high efficiency)	300~400
F9-H12(Sub high efficiency)	400~450
H13-H14(high efficiency)	450~600

- Make sure the steam valve of steam coil closed before the fan stops.
- Make sure the steam valve of steam humidifier closed before the fan stops.
- Customer self-equipped electric control cabinet. Start the electric heating after the fan turned on. Close the electric heating and steam valve five minutes before the fan is stops. electric heating overheat protection switch should be connected to the electric heating protection circuit.
- Regularly check the electrical equipment to ensure there is no leakage.
- Regularly check whether the seal is aging or damaged, whether the fan joint is damaged. Replace it in time if it is damaged.
- Power line shoud be three-phase four wire system, and ensure reliable grounding.

AHU maintenance	Standard maintenance period			Notes
	Monthly	Quarter	Half a year	
Check whether the power line (from power distribution cabinet to AHU) is loose			○	
Check whether the condensate water drainage is normal		○	●	Whether it is installed according to piping drawing, whether it is dirty or blocked, whether the drainage is smooth, whether it causes overflow, etc
Check whether there is abnormal noise during operation	○		●	Abnormal noises such as sharp metal friction, roaring, obvious impact or resonance, significant electromagnetic noise and low frequency noise (can cause disgust)
Check whether the air side of heat exchanger needs cleaning (surface dust, debris, etc.)		○	●	Dust accumulation between fins, debris adheres to the air inlet side of coil, etc
Check whether the air filter is dirty or blocked, whether it needs to be cleaned or replaced	○	●		Differential pressure alarm, differential pressure gauge scale value reaches final resistance, etc

AHU Selection Requirement Table

Computer Selection

HON MING has professional AHU selection software and professional team. According to different design conditions and site conditions, HON MING can supply best quality, most economical, safest and most reliable solution. If you have any needs, please copy this page, fill it out carefully, and send it to HON MING. We will supply high quality, timely and complete services.

- Customer information

Company _____ Project (what is used for)_____

Company address_____ Project address _____

Tel _____ E -mail _____

Mobile _____ Contact _____

AHU model _____ Panel thickness ☐ 30mm ☐ 50mm

Air flow _____ ESP _____

Air outlet type : ☐Upward ☐Downward ☐ Forward ☐Backward

Access door direction ☐ Same side as the piping ☐ Opposite side as the piping

AHU type : ☐Fresh air ☐Mixing air ☐ Return air

AHU application ☐ Comfort ☐ Constant temperature and humidity

Indoor unit operating temperature range Cooling(DB): _____ °C _____ °C

Heating(DB): _____ °C _____ °C

Outdoor design parameters : Cooling outdoor temperature (DB) _____ °C

Cooling outdoor temperature (WB): _____ °C

Heating outdoor temperature (DB) _____ °C

Cooling outdoor temperature (WB): _____ °C

Max height difference between indoor & outdoor__M

Connecting pipe length ____M

Cooling capacity _____

Return air condition: Dry bulb temperature____ Wet bulb temperature or relative temperature _____

Fresh air condition: Dry bulb temperature____ Wet bulb temperature or relative temperature _____

Fresh return air ratio _____ Temperature after mixing (dry/wet bulb) _____

Inlet and outlet pipe direction : ☐Left ☐Right

Heating capacity _____

Return air condition: Dry bulb temperature____ Wet bulb temperature or relative temperature _____

Fresh air condition: Dry bulb temperature____ Wet bulb temperature or relative temperature _____

Fresh return air ratio_____ Temperature after mixing (dry/wet bulb) _____

Filter efficiency _____ Humidification capacity_____

Filter installation type : ☐ Slide ☐ Frame Humidifier: ☐Dry steam ☐ High pressure spray

Filter extraction direction : ☐ Side ☐ Front ☐ Wet film ☐ Electrode humidification

Electric heating power : _____ Electric heating group : _____

Control : _____

Function section : ☐Mixing section ☐Fan section ☐Surface cooling ☐ Airflow equalizing ☐ Hot coil ☐ Return (exhaust) air humidification section ☐Humidification ☐ Diversion section ☐ Muffler section ☐Exhaust section ☐ Electric heating ☐ Medium filtering section

Sketch:

Quality orientation

Make a comfortable life.

HON MING TECHNOLOGY GROUP

https://www.hm-ahu.com

Cooling tower Factory address:
No. 18 Sushui Ave.,salt lake industrial park, Yuncheng, Shanxi province, China.

AC Factory address:
No. 5, Zhenxing Avenue North Road, Salt lake High-tech Development Zone.
Yuncheng City, Shanxi Province,China.