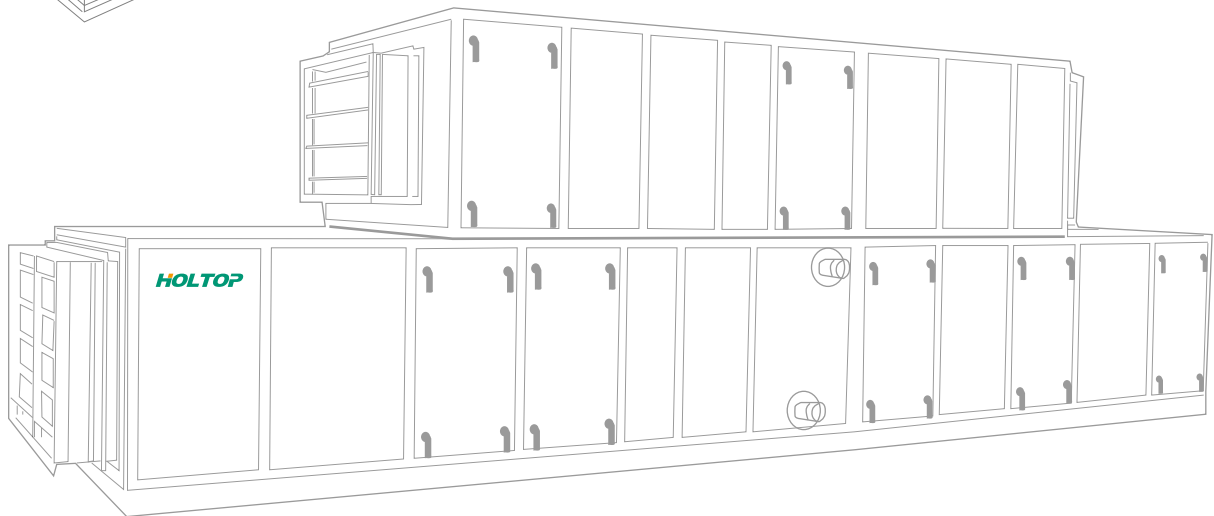
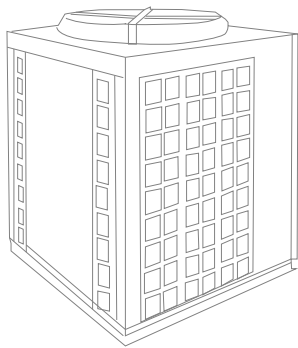


**HOLTOP**

# DX Heat Recovery Air Handling Unit



**Beijing Holtop Air Conditioning Co., Ltd.**



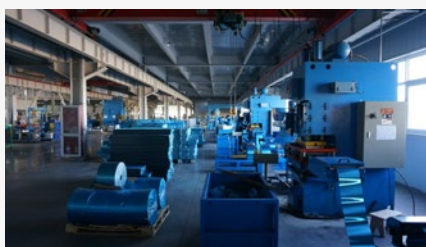
## COMPANY PROFILE

Holtop is the leading manufacturer in China specializing in the production of air to air heat recovery equipments. Founded in 2002, it is dedicated to the research and technology development in the field of heat recovery ventilation and energy saving air handling equipments for more than 15 years.

Holtop headquarters is located in the foot of Beijing Baiwangshan Mountain, covering area of 30,000 square meters. The manufacturing base is in Beijing's Badaling Economic Development Zone, covering an area of 60 acres, with an annual production capacity of 200,000 units of air heat recovery equipments. Holtop builds a sound certificate system of ISO9001, ISO14001 and OHSAS18001 as well as product certification systems. Moreover, it has a laboratory certified by nation authority. As a well-known manufacturer in the field of heat recovery, Holtop has a strong R&D team and possesses dozens of national invention patents, and has participated in the compilation work of several national standards, and is also certified as Zhongguancun High-Tech Enterprise.

Holtop has mastered the core technology of heat recovery, independently developing products like plate and rotary heat exchangers, various heat & energy recovery systems and air handling units. Products have been exported to more than 41 countries and regions. Holtop continuously ranks the top in domestic market of heat and energy recovery ventilators.

Holtop will always committed to the mission of delivering highly efficient and energy saving products and solutions to improve indoor air quality, to ensure people's health and protect our earth.





# CERTIFICATION

After years of dedication to the research and technology development in the filed of heat recovery and indoor air quality, Holtop has many achievements on the product innovation and quality management, which is certified by National and International authorities.



■ Product Patent Certificates



■ Test lab Verification Certificates



■ Energy Saving Product Certificates



■ ISO9001 / ISO14001 / OHSAS18001 Certificates

DX Air handling unit is taking advantage of air as the heating or cooling source, which is a kind of integrated equipment with both cold and heat sources. It is composed of an outdoor air-cooled condensation unit (outdoor unit) responsible for providing cooling and heating refrigerant and an indoor unit responsible for air handling directly, and the outdoor unit and indoor unit connected through a refrigerant pipe. The DX air conditioning unit does not require cooling towers, cooling water pumps, boilers, and other accessories for auxiliary pipe fittings. This system is simple structure, saving space, and easy to install and maintain.

Holtop HJK series of direct-expansion heat recovery purification air-conditioning unit is integrated into its core air to air heat recovery technology, and years of air handling unit manufacturing process, using high-quality brand refrigeration components and independent research outdoor condensing unit. The indoor unit can be equipped with a variety of air to air heat recovery devices such as wheel, plate fins, and plates heat exchanger, which high efficiently recovers the energy from the indoor exhaust air. At the same time, it can also be configured to filter, heating, humidification and other sections to meet comfortable or production process Air conditioning requirements. Internal smooth panel and a very low air leakage rate suit the standard of purified air conditioning. Compared with centralized and semi-centralized air handling systems, this system arrangement is simpler and more flexible, and it is widely apply to shopping malls, office buildings, apartments, cinemas, schools etc.

## ► AHU Characteristics

### 1. Standard Manufacturing process

\*The indoor unit adopts standard modular design and production, and the unit size is compact.

\*The cooling/heating capacity for the outdoor unit is gradually increased to match different heat and cooling requirement.

### 2. Excellent Quality

\*The indoor unit frame is made of high-strength double-layer composite aluminum alloy, and its mechanical strength meet class of D1 (European standard top class).

\*Unique cold bridge structure, the unit's cold bridge factor up to TB2 classes (European standard ).

\*Double-skin panel with high density polyurethane foam, thermal insulation performance up to T2 class (European standard).

### 3. Core Heat Recovery Technology

Holtop core air to air heat recovery technology with a variety of heat recovery devices, energy recovery for economical operation.

### 4. Elegant external and internal body structure

\*Indoor unit external pane is white color(Ral9003) with aluminum alloy frame

\*Indoor unit internal panel is smooth, flat, which can meet the purified air conditioning standard.

### 5. Easy Maintenance

All parts of the indoor unit are selected with Holtop standard parts, easy to repair and maintenance.

### 6. Low noise

\*The indoor unit uses a high-quality, low-noise fan. By the noise break of double-skin panel the noise level of indoor unit reduce accordingly.

\*Outdoor unit condensing fan use new type propeller fan, more smoothly contact between airflow and blade, reducing the noise caused by vortexing.

### 7. Brand Recognition

The refrigerant system uses high quality brand refrigeration components.

### 8. Intelligent Control

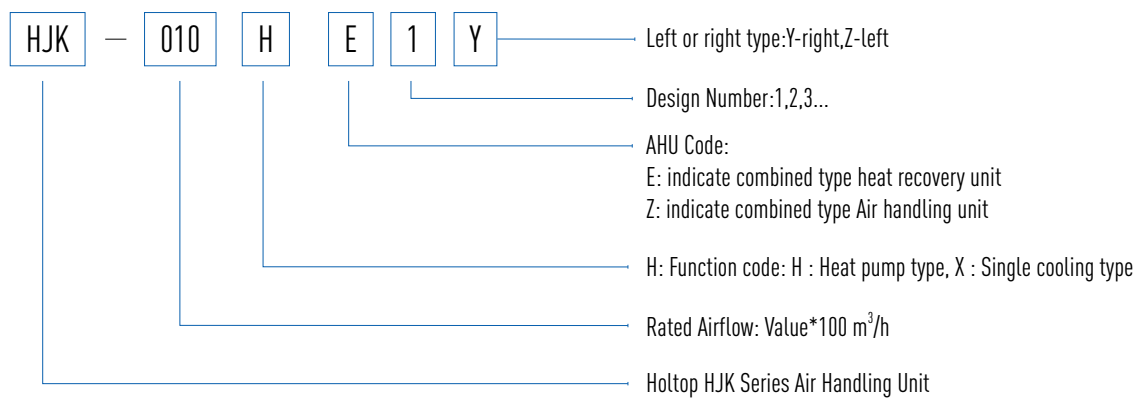
Holtop independently develop control system, including indoor unit fan ON/OFF, overload protection, actuator control, sensors, outdoor unit intelligent defrost, energy management, high and low pressure protection etc.

### 9. Optimal Filter

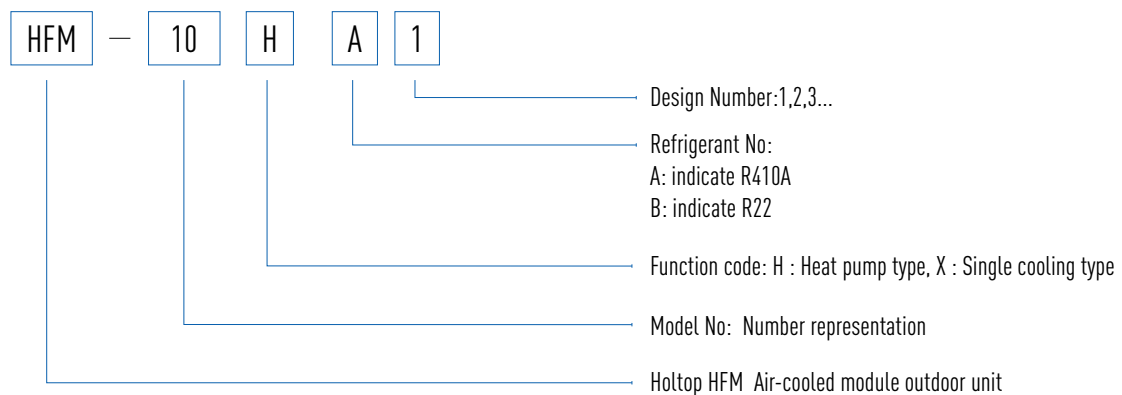
Selecting HEPA filter, and the PM2.5 filtration efficiency is as high as 95%.



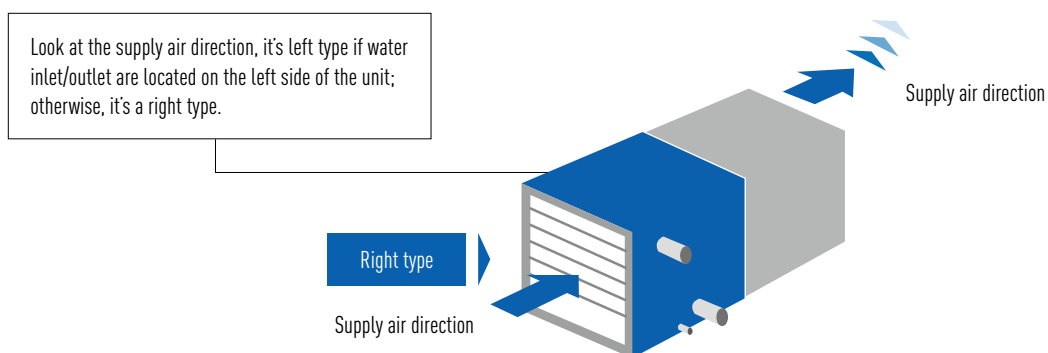
## ► AHU Model Description



## ► Outdoor AHU Model Description



## ► AHU Left/Right Judgement



Model	Outdoor unit	HJK-015	HJK-020	HJK-030	HJK-040	HJK-050
	Indoor unit	HFM-06	HFM-10	HFM-12	HFM-15	HFM-22
Nominal cooling capacity	kw	18	24	37	49	60
Nominal heating capacity	kw	20	28	41	55	67
Outdoor unit airflow	m³/h	1500	2000	3000	4000	5000
Indoor unit Size		According to the specific function section modulus to determine.				
Single outdoor unit size	length(mm)	940	1050	1050	1250	2250
	width(mm)	940	1050	1050	1200	1050
	height(mm)	950	1300	1150	1300	1150
Outdoor unit weight	kg	140	240	360	380	480
Outdoor unit electric		380VAC-50Hz				
Nominal efficiency	Cooling(kw)	4.9	7.6	11	14	17.1
	Heating(kw)	5.5	9	12.3	15.5	18.5
Outdoor fan	Type	Ultra low noise axial flow.				
	Drive way	Direct drive				
	Power(kw)	0.37	1.1	1.1	1.5	1.1*2
Evaporator, condenser	Type	Sleeve type				
	Fin shape	Two - way grooved fin aluminum, honeycomb aluminum fins.				
Refrigerant	Working medium	R22				
	Throttling way	Expansion Valve				
	Filling capacity(kg)	5	7.6	8.1	11.6	14.8
Condenser pipe specification	Fluid pipe diameter ømm(in.)	12.7	12.7	15.9	15.9	15.9+12.7
	Air pipe diameter ømm(in.)	19.1	19.1	28.6	28.6	28.6+19.1

Model	Outdoor unit	HJK-060	HJK-070	HJK-080	HJK-090	HJK-100
	Indoor unit	HFM-25	HFM-28	HFM-30	HFM-36	HFM-42
Nominal cooling capacity	kw	72	84	96	110	126
Nominal heating capacity	kw	81	94	107	123	142
Outdoor unit airflow	m³/h	6000	7000	8000	9000	10000
Indoor unit Size		According to the specific function section modulus to determine.				
Single outdoor unit size	length(mm)	2300	2350	2350	2300	2800
	width(mm)	1100	1100	1100	1250	1100
	height(mm)	1250	1500	1500	1250	1500
Outdoor unit weight	kg	650	750	800	860	920
Outdoor unit electric		380VAC-50Hz				
Nominal efficiency	Cooling(kw)	21.4	23.6	27.4	30.3	35.3
	Heating(kw)	24	26.4	30.4	33.9	39.6
Outdoor fan	Type	Ultra low noise axial flow.				
	Drive way	Direct drive				
	Power(kw)	1.1*2	1.5*2	1.5*2	2.2*2	2.2*2
Evaporator, condenser	Type	Sleeve type				
	Fin shape	Two - way grooved fin aluminum, honeycomb aluminum fins.				
refrigerant	Working medium	R22				
	Throttling way	Expansion Valve				
	Filling capacity(kg)	18	19.3	24.8	25.3	25.9
Condenser pipe specification	Fluid pipe diameter ømm(in.)	15.9+12.7	15.9	15.9+12.7	15.9	15.9+12.7
	Air pipe diameter ømm(in.)	28.6+19.1	28.6	28.6+19.1	28.6	28.6+19.1

Note:

- Unit nominal cooling working condition: indoor dry/wet ball temperature:35 °C / 28 °C,outdoor dry ball temperature: 35 °C (Fresh air unit)
- Unit nominal heating working condition: indoor dry ball temperature: 20 °C, and outdoor dry ball temperature: 7 °C (Fresh air unit)
- The above filling capacity refers to the length of the connecting tube in the indoor and outdoor space of 7 meters, and the filling capacity is only for reference.
- The refrigerant is: R22, other refrigerant, please refer to the technical support of the company.

Model	Outdoor unit	HJK-120	HJK-140	HJK-160	HJK-180	HJK-200
	Indoor unit	HFM-50	HFM-60	HFM-36+HFM-42	HFM-42+HFM-42	HFM-42+HFM-42
Nominal cooling capacity	kw	144	170	198	225	252
Nominal heating capacity	kw	162	191	223	253	284
Outdoor unit airflow	m³/h	12000	14000	16000	18000	20000
Indoor unit Size		According to the specific function section modulus to determine.				
Single outdoor unit size	length(mm)	2300	2700	4600	5600	5600
	width(mm)	2100	2100	1250	1100	1100
	height(mm)	1750	1750	1250	1500	1500
Outdoor unit weight	kg	1360	1450	1720	1840	1840
Outdoor unit electric		380VAC-50Hz				
Nominal efficiency	Cooling(kw)	40.4	51.5	62.8	70.5	70.5
	Heating(kw)	45.3	57.9	70.4	79.1	79.1
Outdoor fan	Type	Ultra low noise axial flow.				
	Drive way	Direct drive				
	Power(kw)	1.1*4	3.2*2	2.2*4	2.2*4	2.2*4
Evaporator, condenser	Type	Sleeve type				
	Fin shape	Two - way grooved fin aluminum, honeycomb aluminum fins.				
refrigerant	Working medium	R22				
	Throttling way	Expansion Valve				
	Filling capacity(kg)	27.2	32.4	36.7	48.8	52.5
Condenser pipe specification	Fluid pipe diameter ømm(in.)	15.9	15.9	15.9	15.9	15.9
	Air pipe diameter ømm(in.)	28.6	28.6	28.6	28.6	28.6

Model	Outdoor unit	HJK-220	HJK-250	HJK-280	HJK-300
	Indoor unit	HFM-50+HFM-50	HFM-50+HFM-50	HFM-60+HFM-60	HFM-60+HFM-60
Nominal cooling capacity	kw	270	300	340	360
Nominal heating capacity	kw	304	338	382	405
Outdoor unit airflow	m³/h	22000	25000	28000	30000
Indoor unit Size		According to the specific function section modulus to determine.			
Single outdoor unit size	length(mm)	4600	4600	5400	5400
	width(mm)	2100	2100	2100	2100
	height(mm)	2000	2000	1750	1750
Outdoor unit weight	kg	2710	2720	2900	2900
Outdoor unit electric		380VAC-50Hz			
Nominal efficiency	Cooling(kw)	80.8	90.1	102.4	108.8
	Heating(kw)	90.5	101.1	114.4	122.4
Outdoor fan	Type	Ultra low noise axial flow.			
	Drive way	Direct drive			
	Power(kw)	1.1*8	1.1*8	2.2*8	2.2*8
Evaporator, condenser	Type	Sleeve type			
	Fin shape	Two - way grooved fin aluminum, honeycomb aluminum fins.			
refrigerant	Working medium	R22			
	Throttling way	Expansion Valve			
	Filling capacity(kg)	54.3	60.2	65.4	72.6
Condenser pipe specification	Fluid pipe diameter ømm(in.)	15.9	15.9	15.9	15.9
	Air pipe diameter ømm(in.)	28.6	28.6	28.6	28.6

Note:

- Unit nominal cooling working condition: indoor dry/wet ball temperature:35 °C / 28 °C,outdoor dry ball temperature: 35 °C (Fresh air unit)
- Unit nominal heating working condition: indoor dry ball temperature: 20 °C, and outdoor dry ball temperature: 7 °C (Fresh air unit)
- The above filling capacity refers to the length of the connecting tube in the indoor and outdoor space of 7 meters, and the filling capacity is only for reference.
- The refrigerant is: R22, other refrigerant, please refer to the technical support of the company.

Model	Outdoor unit	HJK-015	HJK-020	HJK-300	HJK-040	HJK-050
	Indoor unit	HFM-03	HFM-05	HFM-06	HFM-08	HFM-10
Nominal cooling capacity	kw	7.8	13	16	21	28
Nominal heating capacity	kw	9	15	18	24	31
Outdoor unit airflow	m <sup>3</sup> /h	1500	2000	3000	4000	5000
Indoor unit Size		According to the specific function section modulus to determine.				
Single outdoor unit size	length(mm)	1000	840	940	940	1050
	width(mm)	500	840	940	940	1050
	height(mm)	880	950	950	1150	1300
Outdoor unit weight	kg	100	130	140	210	240
Outdoor unit electric		380VAC-50Hz				
Nominal efficiency	Cooling(kw)	2.7	4.2	4.9	6.8	8.6
	Heating(kw)	3.1	4.8	5.5	7.7	9.7
Outdoor fan	Type	Ultra low noise axial flow.				
	Drive way	Direct drive				
	Power(kw)	0.37	0.37	0.37	0.75	1.1
Evaporator, condenser	Type	Sleeve type				
	Fin shape	Two - way grooved fin aluminum, honeycomb aluminum fins.				
refrigerant	Working medium	R22				
	Throttling way	Expansion Valve				
	Filling capacity(kg)	3.8	3.9	5	5.9	8.5
Condenser pipe specification	Fluid pipe diameter ømm(in.)	9.52	12.7	12.7	12.7	12.7
	Air pipe diameter ømm(in.)	15.9	19.1	19.1	19.1	19.1

Model	Outdoor unit	HJK-060	HJK-070	HJK-080	HJK-090	HJK-100
	Indoor unit	HFM-12	HFM-15	HFM-18	HFM-20	HFM-25
Nominal cooling capacity	kw	31	39	47	52	60
Nominal heating capacity	kw	35	44	53	58	76
Outdoor unit airflow	m <sup>3</sup> /h	6000	7000	8000	9000	10000
Indoor unit Size		According to the specific function section modulus to determine.				
Single outdoor unit size	length(mm)	1150	1250	1900	2250	2300
	width(mm)	1050	1200	1050	1050	1100
	height(mm)	1150	1300	1200	1150	1250
Outdoor unit weight	kg	360	380	450	480	650
Outdoor unit electric		380VAC-50Hz				
Nominal efficiency	Cooling(kw)	10.1	12.8	15	17.2	20.2
	Heating(kw)	11.4	14.4	16.8	19.3	22.7
Outdoor fan	Type	Ultra low noise axial flow.				
	Drive way	Direct drive				
	Power(kw)	0.37	1.1	0.75*2	1.1*2	1.1*2
Evaporator, condenser	Type	Sleeve type				
	Fin shape	Two - way grooved fin aluminum, honeycomb aluminum fins.				
refrigerant	Working medium	R22				
	Throttling way	Expansion Valve				
	Filling capacity(kg)	8.9	10.5	13	14.7	17.9
Condenser pipe specification	Fluid pipe diameter ømm(in.)	12.7	12.7	12.7	15.9	15.9
	Air pipe diameter ømm(in.)	19.1	19.1	19.1	28.6	28.6

Note:

- Unit nominal cooling working condition: indoor dry/wet ball temperature:35 °C / 28 °C,outdoor dry ball temperature: 35 °C (Fresh air unit)
- Unit nominal heating working condition: indoor dry ball temperature: 20 °C, and outdoor dry ball temperature: 7 °C (Fresh air unit)
- The above filling capacity refers to the length of the connecting tube in the indoor and outdoor space of 7 meters, and the filling capacity is only for reference.
- The refrigerant is: R22, other refrigerant, please refer to the technical support of the company.

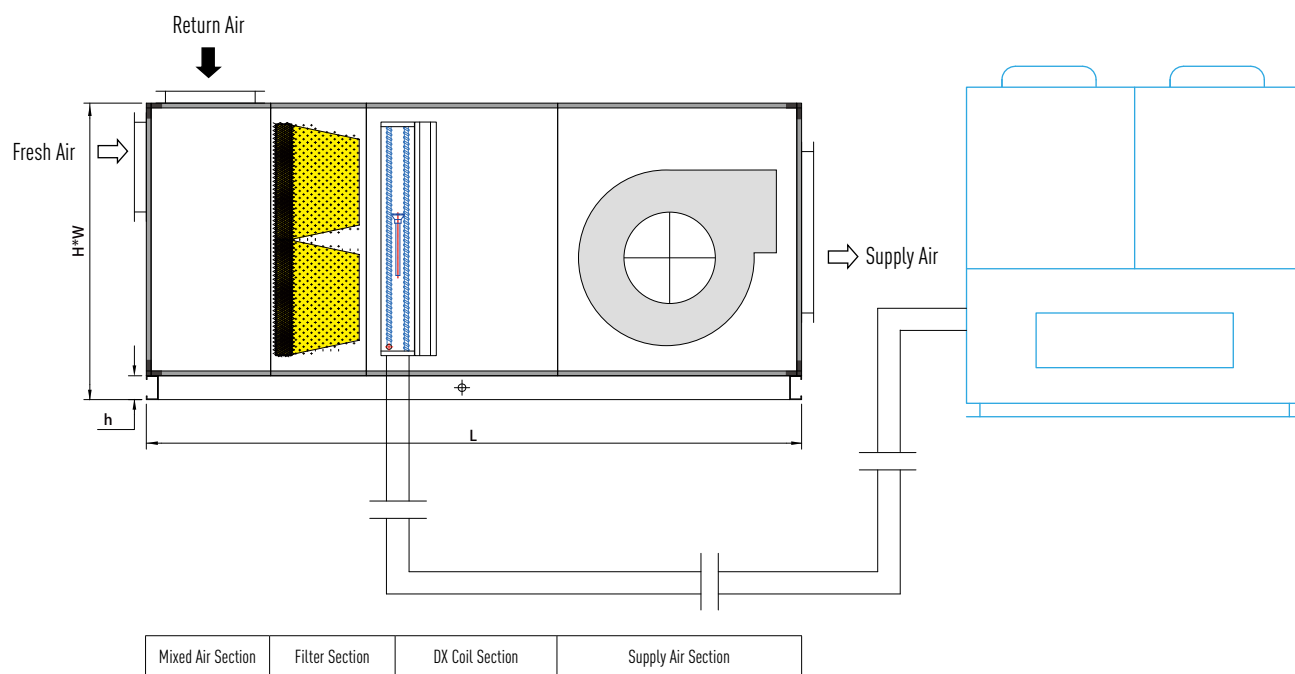


Model	Outdoor unit	HJK-120	HJK-140	HJK-160	HJK-180	HJK-200
	Indoor unit	HFM-30	HFM-36	HFM-36	HFM-40	HFM-50
Nominal cooling capacity	kw	72	84	94	104	120
Nominal heating capacity	kw	81	94	105	116	134
Outdoor unit airflow	m <sup>3</sup> /h	12000	14000	16000	18000	20000
Indoor unit Size		According to the specific function section modulus to determine.				
Single outdoor unit size	length(mm)	2350	2300	2300	2800	2300
	width(mm)	1100	1250	1250	1100	2100
	height(mm)	950	1250	1250	1500	2000
Outdoor unit weight	kg	140	860	860	920	1360
Outdoor unit electric		380VAC-50Hz				
Nominal efficiency	Cooling(kw)	24.8	31.4	31.4	35.2	40.4
	Heating(kw)	27.8	35.2	35.2	39.5	45.3
Outdoor fan	Type	Ultra low noise axial flow.				
	Drive way	Direct drive				
	Power(kw)	1.5*2	2.2*2	2.2*2	1.1*4	1.1*4
Evaporator, condenser	Type	Sleeve type				
	Fin shape	Two - way grooved fin aluminum, honeycomb aluminum fins.				
refrigerant	Working medium	R22				
	Throttling way	Expansion Valve				
	Filling capacity(kg)	20.5	21.2	22.6	28.9	32.1
Condenser pipe specification	Fluid pipe diameter ømm(in.)	15.9+12.7	15.9	15.9	15.9+12.7	15.9
	Air pipe diameter ømm(in.)	28.6+19.1	28.6	28.6	28.6+19.1	28.6

Model	Outdoor unit	HJK-2200	HJK-250	HJK-280	HJK-300
	Indoor unit	HFM-50	HFM-60	HFM-30*2	HFM-36*2
Nominal cooling capacity	kw	130	150	168	180
Nominal heating capacity	kw	146	168	188	202
Outdoor unit airflow	m <sup>3</sup> /h	22000	25000	28000	30000
Indoor unit Size		According to the specific function section modulus to determine.			
Single outdoor unit size	length(mm)	2300	2700	4700	4600
	width(mm)	2100	2100	1100	1250
	height(mm)	2000	1750	1500	1250
Outdoor unit weight	kg	1360	1450	1500	1720
Outdoor unit electric		380VAC-50Hz			
Nominal efficiency	Cooling(kw)	40.4	51.6	49.5	62.8
	Heating(kw)	45.3	57.8	55.5	70.4
Outdoor fan	Type	Ultra low noise axial flow.			
	Drive way	Direct drive			
	Power(kw)	1.1*4	1.5*2	1.5*4	2.2*4
Evaporator, condenser	Type	Sleeve type			
	Fin shape	Two - way grooved fin aluminum, honeycomb aluminum fins.			
refrigerant	Working medium	R22			
	Throttling way	Expansion Valve			
	Filling capacity(kg)	33.6	36.7	46.7	48.3
Condenser pipe specification	Fluid pipe diameter ømm(in.)	15.9	15.9	15.9+12.7	15.9
	Air pipe diameter ømm(in.)	28.6	28.6	28.6+19.1	28.6

## Note:

- Unit nominal cooling working condition: indoor dry/wet ball temperature:35 °C / 28 °C,outdoor dry ball temperature: 35 °C (Fresh air unit)
- Unit nominal heating working condition: indoor dry ball temperature: 20 °C, and outdoor dry ball temperature: 7 °C (Fresh air unit)
- The above filling capacity refers to the length of the connecting tube in the indoor and outdoor space of 7 meters, and the filling capacity is only for reference.
- The refrigerant is: R22, other refrigerant, please refer to the technical support of the company.

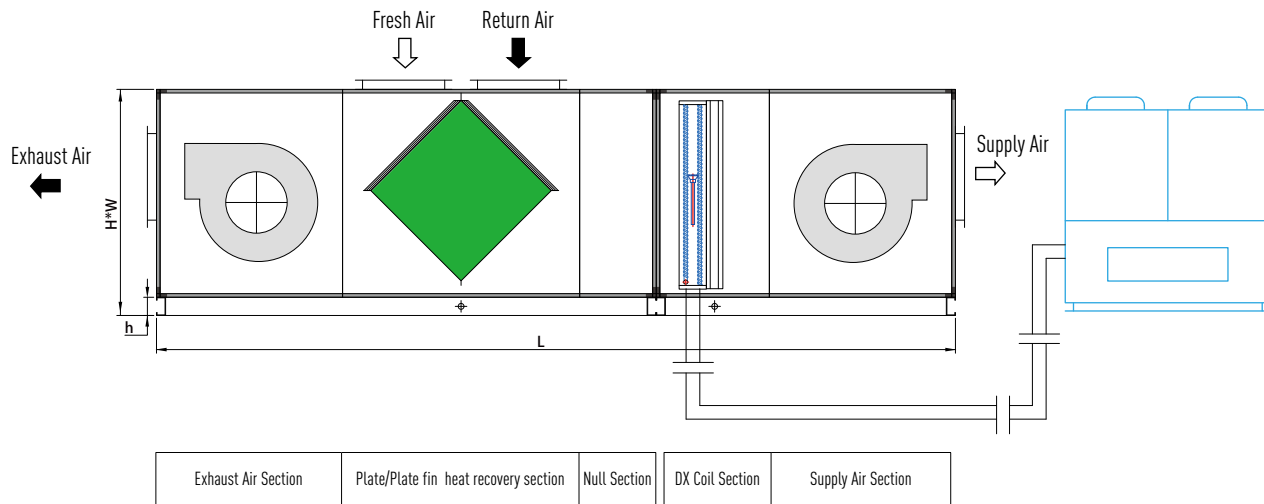
**► Standard Combined Model**


Outdoor unit	Unit size(mm)		Fan inlet/outlet size(mm)			Weight(kg)
	L	H*W	Fresh air inlet	Supply air outlet	Return air inlet	
HJK-015	2140	575×740	575×175	575×175	375×375	183
HJK-020	2140	575×840	675×175	675×175	375×375	209
HJK-030	2140	640×940	775×175	775×275	475×445	283
HJK-040	2240	640×1040	875×175	875×275	475×475	319
HJK-050	2340	840×1140	975×175	975×275	475×475	453
HJK-060	2340	840×1240	1075×175	1075×275	475×475	545
HJK-070	2440	940×1240	1075×175	1075×375	475×475	564
HJK-080	2540	940×1340	1175×175	1175×375	575×575	575
HJK-090	2540	1040×1340	1175×175	1175×375	575×575	638
HJK-100	2640	1140×1540	1375×175	1375×375	575×575	767
HJK-120	2640	1140×1640	1475×175	1475×375	675×675	818
HJK-140	2740	1140×1940	1775×175	1775×375	775×775	958
HJK-160	2740	1240×1940	1775×175	1775×375	775×775	1045
HJK-180	2740	1440×1940	1775×175	1775×375	775×775	1193
HJK-200	3340	1440×2140	1975×175	1975×375	775×775	1570
HJK-220	3340	1540×2140	1975×175	1975×375	775×775	1681
HJK-250	3540	1640×2240	2075×175	2075×475	875×875	1796
HJK-280	3640	1640×2540	2375×175	2375×475	875×875	1875
HJK-300	3640	1740×2540	2375×175	2375×475	975×975	1992

Note:

1. For the unit size of the thickness of 25mm panel, when selecting 50mm panel thickness: L+50mm; W + 50 mm; H + 50 mm.
2. H = 100 mm.

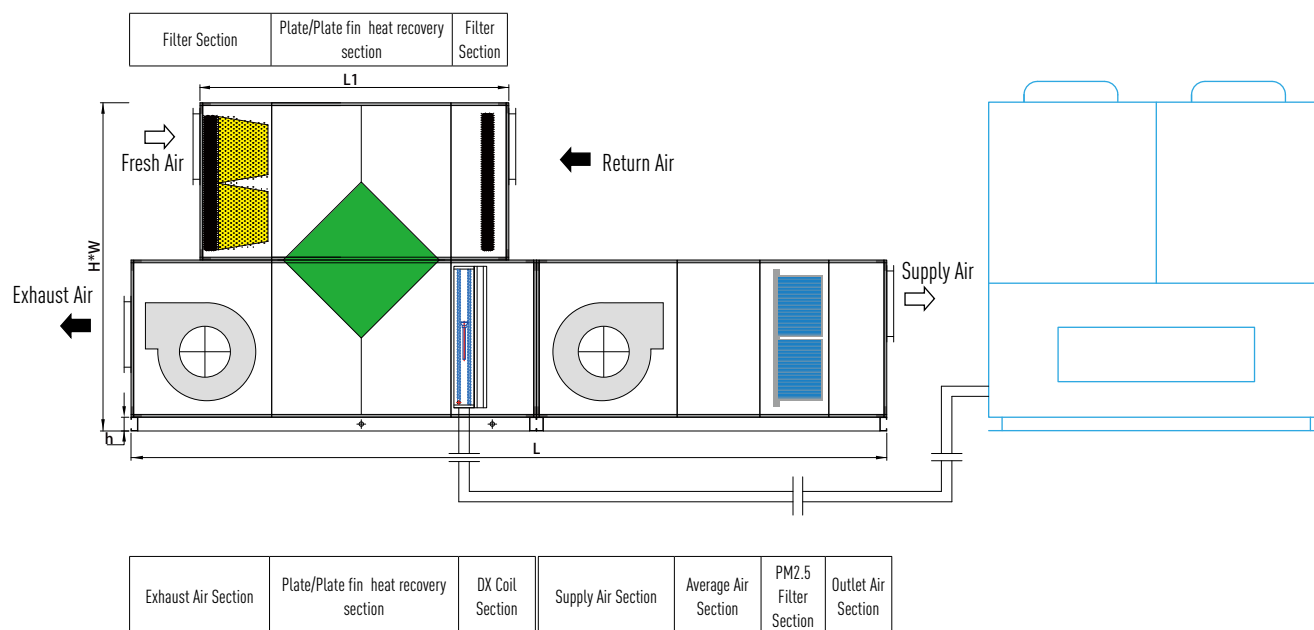
► Plate / Plate Fin Heat Recovery Unit \_1



Outdoor unit	Unit size(mm)		Fan inlet/outlet size(mm)		Weight(kg)
	L	H*W	Fresh/Return air inlet	Supply/Exhaust air outlet	
HJK-015	3040	540×740	575×150	375×375	226
HJK-020	3040	540×840	675×150	375×375	258
HJK-030	3040	640×940	775×175	475×475	363
HJK-040	3240	640×1040	875×175	475×475	417
HJK-050	3640	840×1140	975×300	475×475	660
HJK-060	3640	840×1140	1075×300	475×475	793
HJK-070	3640	840×1240	1075×300	475×475	821
HJK-080	3840	940×1240	1175×300	575×575	914
HJK-090	4040	940×1240	1175×375	575×575	1044
HJK-100	4340	1040×1340	1375×450	575×575	1327
HJK-120	4540	1140×1540	1475×450	675×675	1415
HJK-140	4740	1140×1540	1775×450	775×775	1662
HJK-160	4740	1140×1640	1775×550	775×775	1855
HJK-180	4740	1140×1940	1775×550	775×775	2118

Note:

1. For the unit size of the thickness of 25mm panel, when selecting 50mm panel thickness: L+50mm; W + 50 mm; H + 50 mm.
2. H = 100 mm.

**► Plate / Plate Fin Heat Recovery Unit \_2**


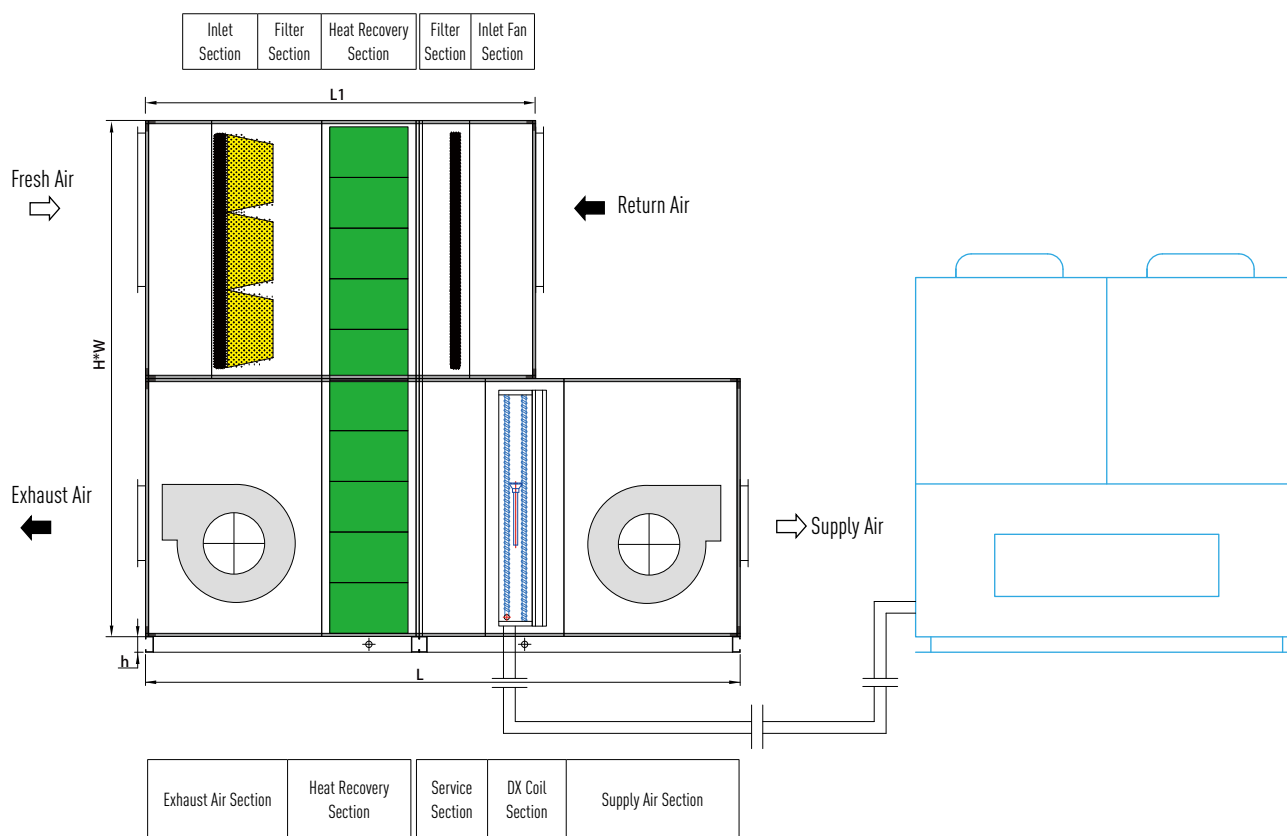
Outdoor unit	Unit size(mm)			Fan inlet/outlet size(mm)		Weight(kg)
	L	L1	H*W	Fresh/Return air inlet	Supply/Exhaust air outlet	
HJK-015	4540	1540	1180×740	575×175	375×375	493
HJK-020	4540	1540	1180×840	675×175	375×375	563
HJK-030	4540	1540	1380×940	775×175	475×475	762
HJK-040	4740	1540	1380×1040	875×175	475×475	850
HJK-050	5140	1740	1780×1140	975×275	475×475	1311
HJK-060	5140	1740	1780×1240	1075×275	475×475	1575
HJK-070	5140	1740	1980×1240	1075×375	475×475	1630
HJK-080	5340	1740	1980×1340	1175×375	575×575	1775
HJK-090	5540	1940	2180×1340	1175×375	575×575	2110
HJK-100	5840	2040	2380×1540	1375×475	575×575	2576
HJK-120	6040	2240	2380×1640	1475×475	675×675	2916
HJK-140	6240	2240	2380×1940	1775×475	775×775	3558
HJK-160	6240	2240	2580×1940	1775×475	775×775	3661
HJK-180	6240	2240	2980×1940	1775×575	775×775	4181

Note:

1. For the unit size of the thickness of 25mm panel, when selecting 50mm panel thickness: L+50mm; W + 50 mm; H + 50 mm.
2. H = 100 mm.



► Plate / Plate Fin Heat Recovery Unit \_3

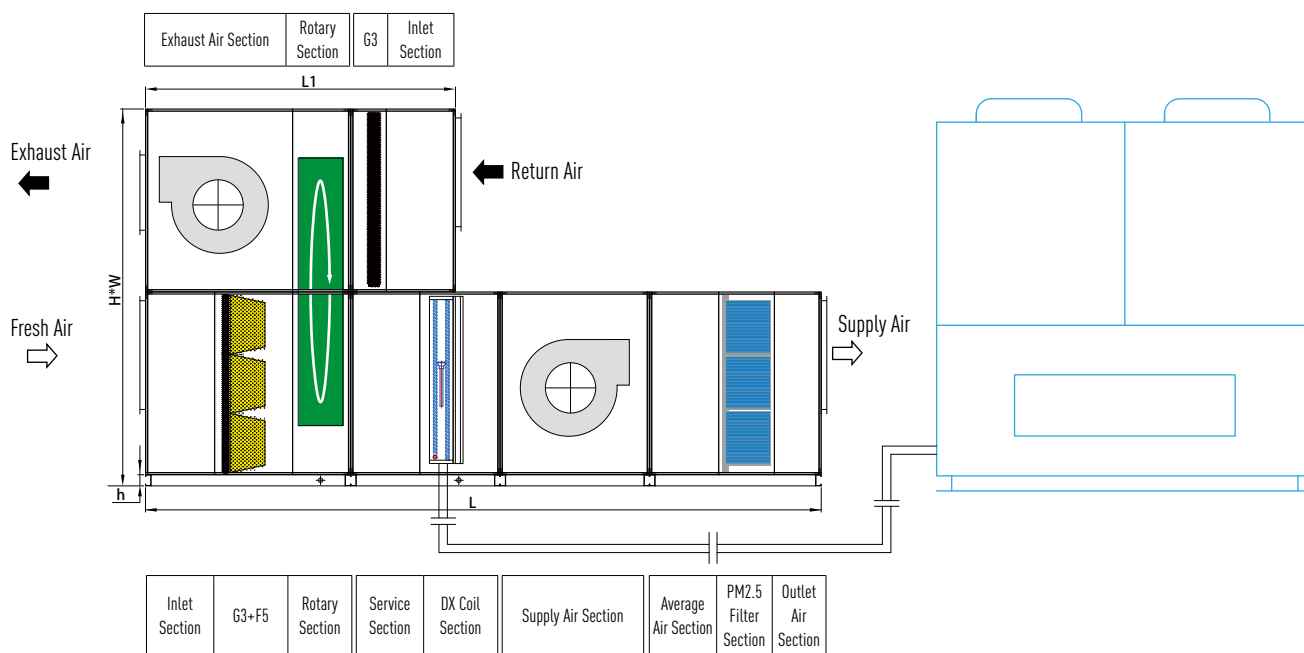


Outdoor unit	Unit size(mm)			Fan inlet/outlet size(mm)		Weight(kg)
	L	L1	H*W	Fresh/Return air inlet	Supply/Exhaust air outlet	
HJK-200	4340	2140	2980×2140	1975×575	775×775	2557
HJK-220	4340	2140	3180×2140	1975×575	775×775	2753
HJK-250	4540	2140	3380×2240	2075×675	875×875	2954
HJK-280	4740	2140	3380×2540	2375×675	875×875	3094
HJK-300	4940	2340	3580×2540	2375×675	975×975	3502

Note:

1. For the unit size of the thickness of 25mm panel, when selecting 50mm panel thickness: L+50mm; W + 50 mm; H + 50 mm.
2. H = 100 mm.

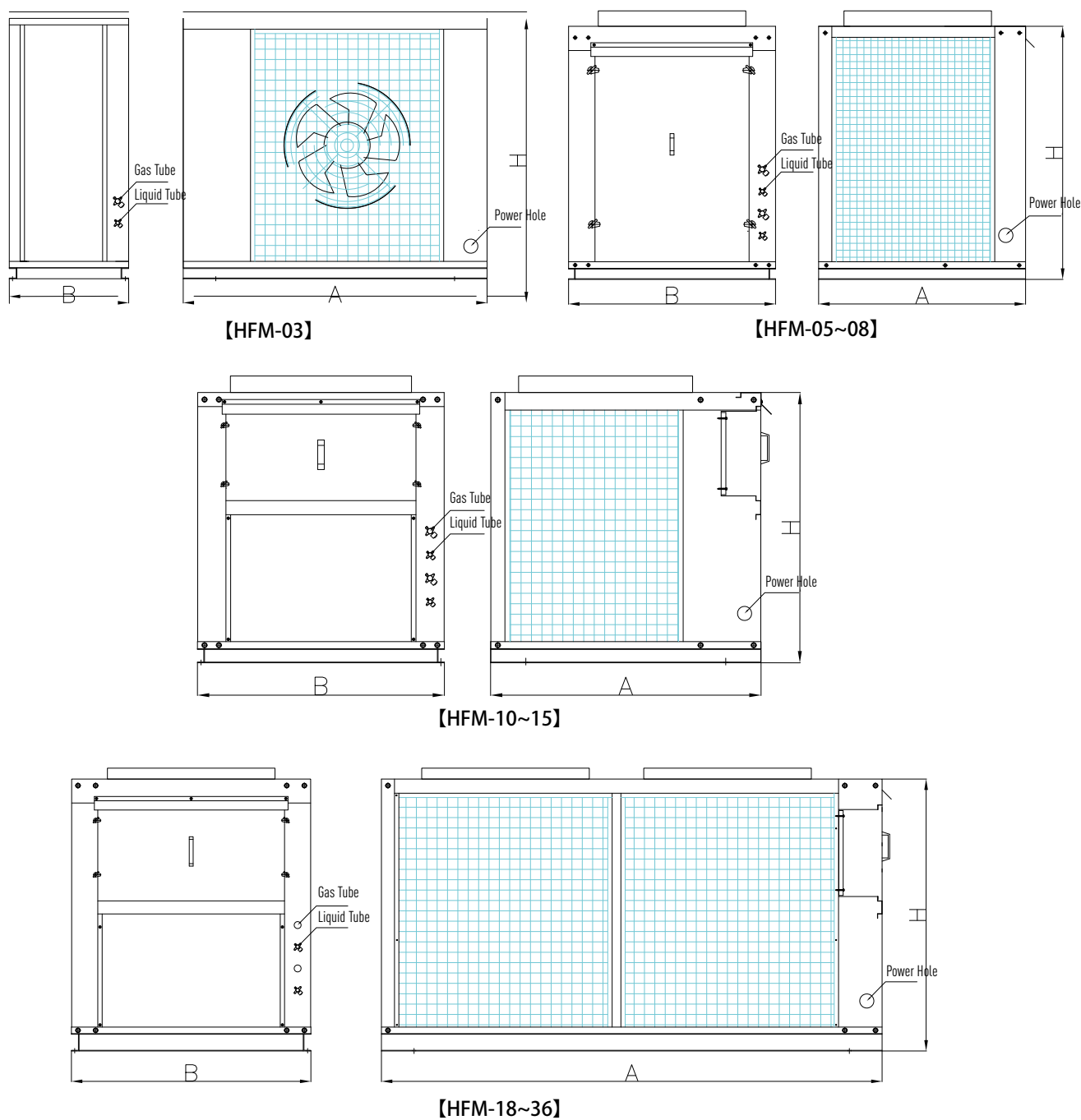
# ► Rotary Heat Recovery Unit



Outdoor unit	Unit size(mm)			Fan inlet/outlet size(mm)		Weight(kg)
	L	L1	H*W	Fresh/Return air inlet	Supply/Exhaust air outlet	
HJK-015	4340	2540	1180×740	575×175	375×375	538
HJK-020	4340	2540	1180×840	675×175	375×375	613
HJK-030	4340	2540	1380×940	775×175	475×475	830
HJK-040	4440	2640	1380×1040	875×175	475×475	1064
HJK-050	4640	2740	1780×1140	975×275	475×475	1279
HJK-060	4640	2740	1780×1240	1075×275	475×475	1537
HJK-070	4640	2740	1980×1240	1075×375	475×475	1590
HJK-080	4740	2840	1980×1340	1175×375	575×575	1715
HJK-090	4740	2840	2180×1340	1175×375	575×575	2050
HJK-100	4840	2940	2380×1540	1375×475	575×575	2238
HJK-120	4840	2940	2380×1640	1475×475	675×675	2536
HJK-140	4940	3040	2380×1940	1775×475	775×775	2738
HJK-160	4940	3040	2580×1940	1775×475	775×775	2986
HJK-180	4940	3040	2980×1940	1775×575	775×775	3410
HJK-200	5340	3440	2980×1940	1975×575	775×775	3560
HJK-220	5340	3440	3180×2140	1975×575	775×775	3813
HJK-250	5440	3540	3380×2240	2075×675	875×875	4041
HJK-280	5440	3640	3380×2540	2375×675	875×875	4186
HJK-300	5540	3640	3580×2540	2375×675	975×975	4447

Note:

1. For the unit size of the thickness of 25mm panel, when selecting 50mm panel thickness: L+50mm; W + 50 mm; H + 50 mm.
2. H = 100 mm.

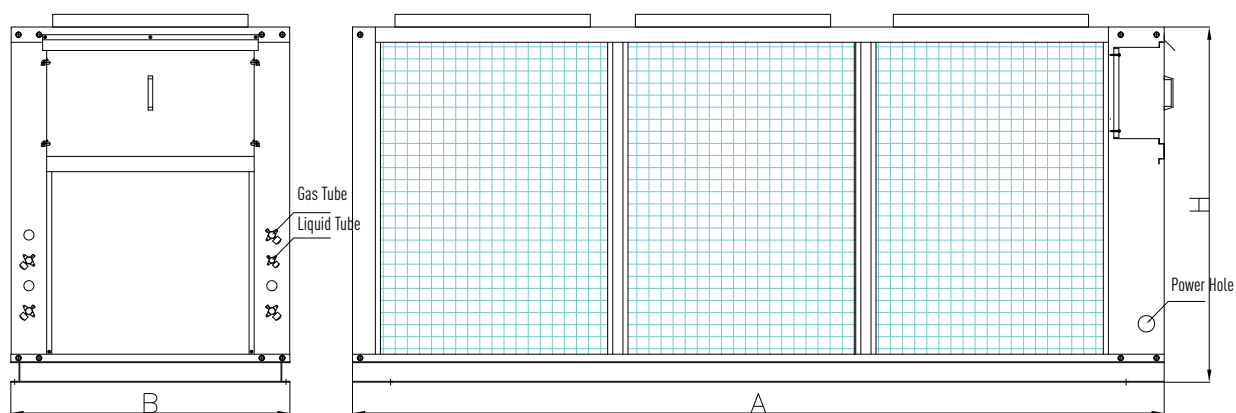
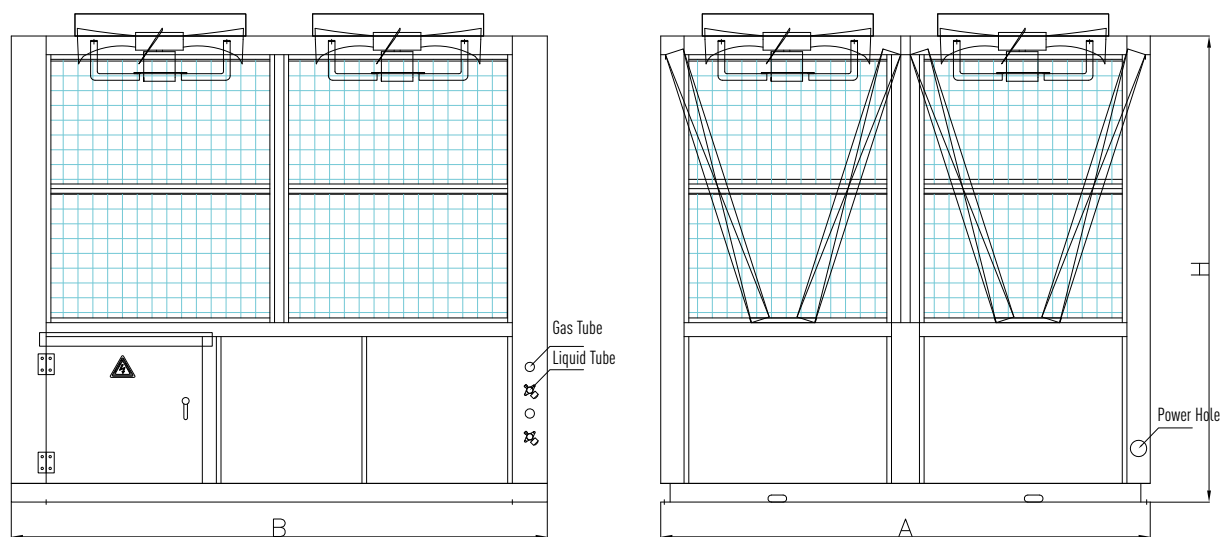


Units(mm)

Model/Size	A	B	H
HFW-03	1000	500	880
HFW-05	840	850	950
HFW-06	940	940	950
HFW-08	940	940	1150
HFW-10	1050	1050	1300
HFW-12	1150	1050	1150
HFW-15	1250	1200	1300

Units(mm)

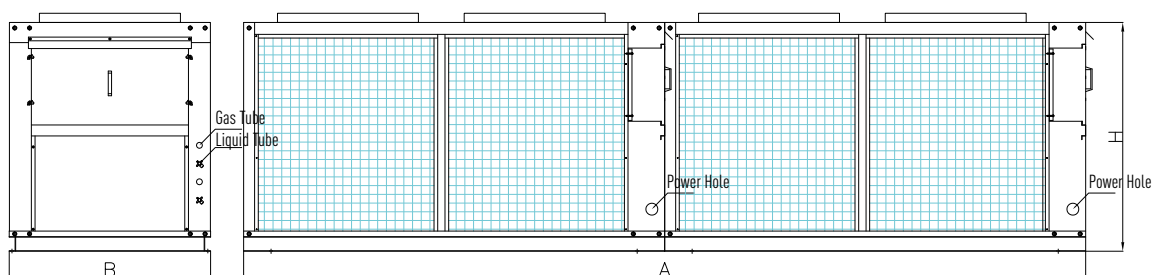
Model/Size	A	B	H
HFW-18	1900	1050	1200
HFW-20	2250	1050	1150
HFW-22	2250	1050	1150
HFW-25	2300	1100	1250
HFW-28	2350	1100	1500
HFW-30	2350	1100	1500
HFW-36	2300	1250	1250


**【HFM-40~42】**

**【HFM-50~60】**

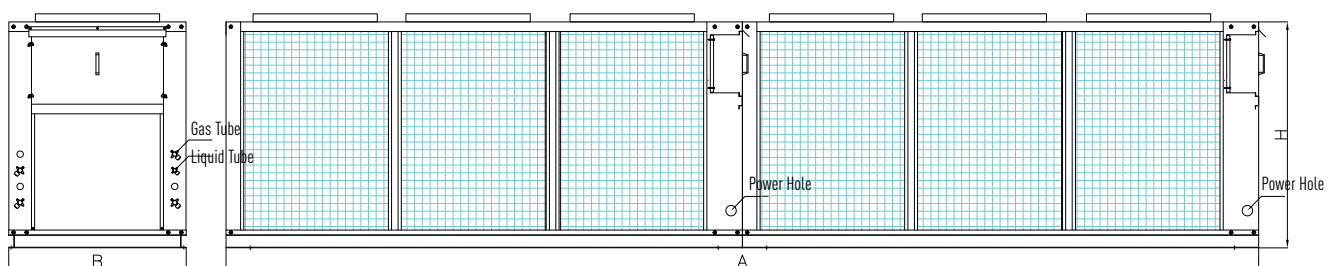
Units(mm)

Model/Size	A	B	H
HFW-40	2800	1100	1500
HFW-42	2800	1100	1500
HFW-50	2300	2100	2000
HFW-60	2700	2100	1750

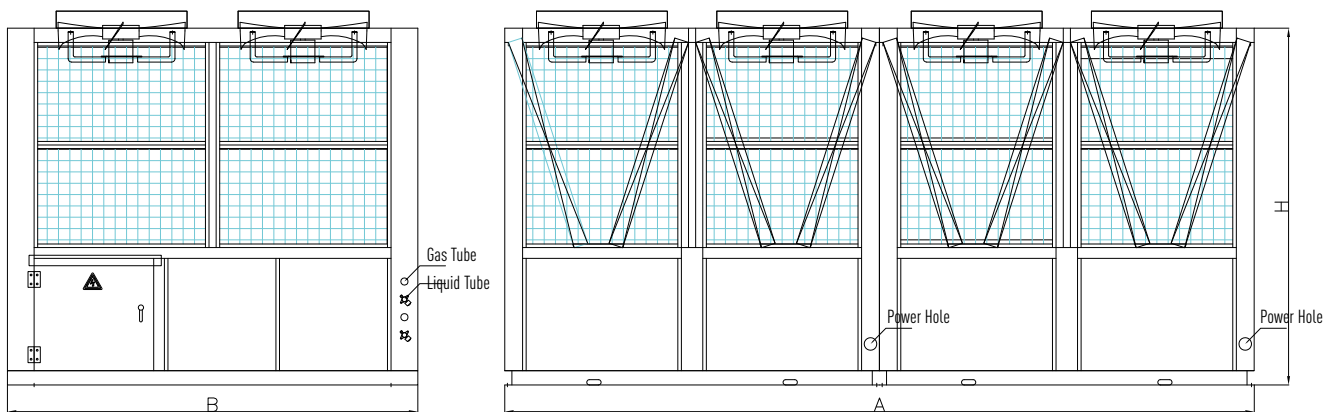




**【HFM-30+HFM-30】**  
**【HFM-36+HFM-36】**



**【HFM-42+HFM-42】**



**【HFM-50+HFM-50】**  
**【HFM-60+HFM-60】**

Units(mm)

Model/Size	A	B	H
HFW-30+HFW-30	5100	1100	1500
HFW-36+HFW-36			
HFW-42+HFW-42	5600	1100	1500
HFW-50+HFW-50	4600	2100	2000
HFW-60+HFW-60			

## ► Correction factor table of cooling capacity under different working conditions

Indoor inlet temperature °C		Outdoor inlet temperature °C				
DB	WB	25.00	30.00	35.00	40.00	43.00
23	16	0.98	0.94	0.89	0.85	0.82
25	18	1.05	1.00	0.95	0.90	0.87
27	19	1.10	1.05	1.00	0.95	0.91
28	20	1.12	1.07	1.02	0.97	0.93
30	22	1.19	1.13	1.08	1.02	0.99
32	24	1.26	1.20	1.15	1.08	1.05

## ► Correction coefficient table of heating capacity of heat pump unit under different working conditions

Indoor inlet temperature °C	Outdoor inlet temperature °C				
	-5	0	7	10	15
16	0.77	0.89	1.02	1.13	---
18	0.77	0.88	1.02	1.12	---
20	0.76	0.87	1.00	1.11	1.25
21	0.76	0.87	0.99	1.10	1.24
22	0.75	0.86	0.98	1.09	1.23
24	0.75	0.85	0.97	1.06	1.22

## ► The modification table of cooling capacity is affected by The length of the connecting tube and the installation height difference of the indoor unit and the outdoor unit

Factors	Correction factor for cooling capacity.									
Connection tube equivalent length	5m	10m	15m	20m	25m	30m	35m	40m	45m	50m
The outdoor unit is higher than the indoor unit	0m	1.00	0.98	0.96	0.94	0.90	0.88	0.86	0.84	0.82
	5m	1.00	0.97	0.95	0.93	0.89	0.87	0.85	0.83	0.81
	10m	---	0.96	0.94	0.92	0.88	0.86	0.84	0.82	0.80
	15m	---	---	0.93	0.91	0.87	0.85	0.83	0.81	0.79
	20m	---	---	---	0.90	0.86	0.84	0.82	0.80	0.78
	25m	---	---	---	---	0.85	0.83	0.81	0.79	0.77
The outdoor unit is lower than the indoor unit	0m	1.00	0.98	0.92	0.94	0.92	0.90	0.86	0.84	0.82
	5m	1.00	0.98	0.92	1.94	0.92	1.90	0.86	0.84	0.82
	10m	---	0.98	0.92	2.94	0.92	2.90	0.86	0.84	0.82
	15m	---	---	0.92	3.94	0.92	3.90	0.86	0.84	0.82
	20m	---	---	---	4.94	0.92	4.90	0.86	0.84	0.82
	25m	---	---	---	---	0.92	5.90	0.86	0.84	0.82

## ► The equivalent length of bend and storing oil bend is shown in the table below

Outer diameter of gas pipe	ø 15.9	ø 19.1	ø 22.2	ø 28.6	ø 35	ø 42
Bend	0.25m	0.35m	0.45m	0.50m	0.55m	0.60m
Storing oil bend	2m	2.4m	2.9m	3.7m	4.1m	4.8m

Note: the equivalent total length of the connecting pipe = the total length of the straight pipe + the length of storing oil bending of the external head

## ► The maximum pipe length, maximum height difference and maximum bend number are specified in the connection between indoor and outdoor units

Outer diameter of gas pipe	ø 15.9	ø 19.1	ø 22.2	ø 28.6	ø 35	ø 42
The largest length	15m	20m	27m	30m	40m	50m
Maximum height difference	8m	10m	12.5m	15m	20m	25m
Maximum bend number	4	6	6	8	10	12

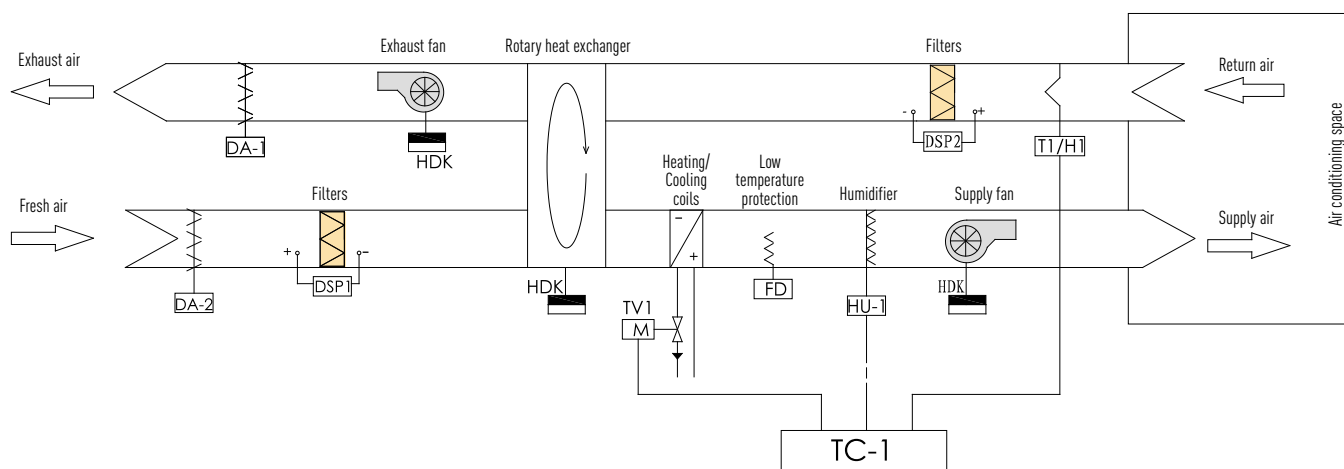
## ► The length of the connecting tube between the indoor and outdoor units is increased by 1m refrigerant supplement

Outer diameter of liquid pipe	ø 12.7	ø 15.9	ø 19.1	ø 22.2	ø 28.6	ø 35
Refrigerant supplement	0.11kg	0.18kg	0.26kg	0.37kg	0.53kg	0.95kg

## ► Air Handling Unit Electric Control

### Simulate Control Description

- The control box adopts AC 380V power supply, and the control system has overload, over-current, and short circuit protection functions. Indoor independent installation only. The control mode of supply fan, exhaust fan and wheel motor is manual control (also called local control), and the way to start are direct start (11 Kw and below) and star-delta reduced voltage start mode (15 Kw and above). The Supply, exhaust fan and wheel motor are separately controlled by start and stop. The start/stop adopts the touch-type button, which is convenient, fast and safe to operate. Control box are with power instructions, operation instructions, fault indications and the fire-fighting linkage function. Fire-fighting linkage signal terminal Fx (normally closed) is reserved. If Fx is disconnected, the fan stops running.
- The intelligent controller adopts Swiss brands, and its performance is stable and reliable. Season(summer/winter) working conditions switch, temperature and humidity etc., can be setted parameters on it. Modbus and Network control function is NOT available.
- The damper is linkage with the fan. When the fan starts, the damper opens, and when the fan stops running, the damper closes.
- The duct type temperature and humidity sensor detects the return air temperature and humidity, and these signal sends to the intelligent temperature controller and compare with the setted data. According to the compared result, the controller output signal to drive the opening percentage of the electric valve and turn on/off the humidifier switch, thus to keep the return air temperature and humidity within the setted range.
- The filter dirt alarm function. The differential pressure switch is installed on the two side of the filter to detect the pressure difference. When the detected value exceeds the setted value, the filter dirt alarm light is on to remind maintenance, clean or replace the filter.
- Low temperature protection function, through the installation of antifreeze protection switch, the set value is 5°C. When the temperature after the coil is lower than the setted value, the unit will stop and the low temperature protection alarm light will be on. (This function is optional)



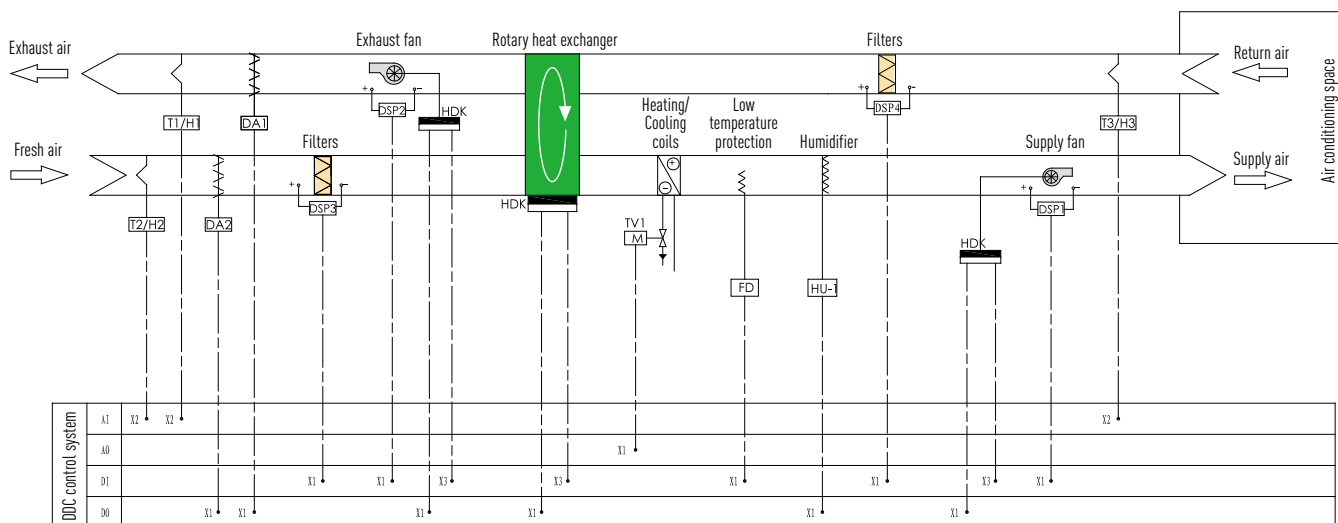
## ► Component Descriptions

Component code	Name of the component	Notes
DA-1/2	Air damper actuator	
T1/H1	Temperature and humidity sensors.	
DSP1/2	Differential pressure switch	
TV1	Antifreeze protection switch.	
FD	Humidification control	Antifreeze protection to cooling coil
HU-1	Intelligent controller	
TC-1	Outdoor unit control module.	A0/DO exports.
Note: the above is for reference only. The number of components is configured according to the specific project requirements and needs.		

## ► Air Handling Unit Electric Control

### DDC/PLC Control System, Function Description:

- The standard configuration of the air handling unit's automatic control system adopts advanced technology and stable performance SIEMENS POL series DDC/PLC series controller. This controller can meet the independent work requirements of the air conditioning unit as well as the networking control requirements.
- The terminal system control elements such as the temperature and humidity sensors and the water valve adopt the famous domestic and international famous brands, and strive to provide customer with high-reliability, high-precision products.
- The DDC/PLC control system monitors the parameters of the unit's fan operation status, pressure differential and fault status, temperature and humidity parameters, damper opening, and valve opening percentage in real time. According to the combination of AHU sections, Under different conditions, seeking the best air heat and moisture handling solutions to meet the process or comfortable requirements, and efforts to running the whole system with low energy consumption and create economic benefits for customers.



## ► Component Descriptions

Component code	Name of the component	Notes
DDC/PLC	Controller and extension module	
DA1/2	Air damper actuator	
T1/H1~T3/H3	Temperature and humidity sensors	Temperature control check
DSP1/2	Differential pressure switch	Supply/Exhaust fan lack of wind protection
DSP3/4	Differential pressure switch	Filter blocking alarm
FD	Antifreeze protection switch	Antifreeze protection to cooling coil
HU-1	Humidification control	
HFM	Outdoor unit control module	
Note: the above is for reference only. The number of components is configured according to the specific project requirements and needs.		



The outdoor computer control module is equipped with a full range of display functions, control functions and alarm functions, providing a comprehensive and considerate control service for users.

### ► Display Function

The operation mode	✓	Current time display	✓
Return air temperature	✓	Language selection	✓
The temperature of the fins on the outside of the defrosting machine.	✓	Services to remind	✓
Compressor working condition.	✓	The environment temperature	✓
Supply fan working condition.	✓	The target temperature	✓
Condensated fan working condition.	✓	Protection switch status	✓

### ► Control Function

Cold and warm mode by manual control	✓	Service days setting	✓
Intelligent defrost	✓	Forced to defrost	✓
Compressor balancing operation	✓	System password setting	✓
Computer circuit automatic diagnosis	✓	Restore factory Settings	✓
Stop heating the lubricating oil	✓	Keep telephone	✓
Automatic unit reset	✓	Out of work	✓
Daily operation setting	✓	Holiday setting	✓
Current time setting	✓	Temperature protection setting	✓
Target temperature setting	✓	The compressor starts the external temperature setting	✓
Protect the current value setting	✓	Protection voltage setting	✓
Various start delay setting	✓	Defrost interval time setting	✓
Running current correction	✓	Defrost time limit setting	✓
Compressor repeated start delay	✓	Temperature sensor correction	✓
All kinds of alarm delay setting	✓	Minimum running time of compressor	✓
Automatic control of cold and warm mode	✓		

### ► Alarm Function

Evaporation pressure is too low to protect	✓	The condensation pressure is overprotective	✓
Blower overload protection	✓	Compressor overload protection	✓
Auxiliary heating overload protection	✓	Internal heat protection of compressor	✓
High air supply temperature/low protection	✓	Undervoltage protection.	✓
It's not mutually compatible	✓	Missing from the machine	✓
Sensor fault protection	✓		

Note: the selected function is not checked, and the rest is the standard function of microcomputer controller.

#### Intelligent Defrost

When the temperature difference between the unit coil temperature (evaporation temperature during heating) and the outside air temperature exceeds the settled value and the defrosting interval time is settled, the defrost mode can be entered, the fan is cut off, and the four-way valve is powered off. The unit is switched from the heating state to the cooling state, and the compressor high-temperature and high-pressure steam starts flow into the coil for defrosting. When the coil temperature rises to a settled value or the defrost time is greater than the settled time, the controller will automatically exit the defrost mode, the four-way valve is energized, the fan is turned on, and the unit returns to normal heating mode.

#### Balanced Operation of The Compressor

For an outdoor unit with multiple compressors in parallel or multiple outdoor units operating in parallel, the compressor can be operated in a balanced manner. When the outdoor unit just require partial load running, only a part of the compressor could be started, and an appropriate compressor start is selected based on the accumulated running time. The balanced operation and management of the compressor can effectively save energy, avoid overuse of components, prolong the service life of equipment, and increase the equipment operation guarantee rate.

#### Summer and Winter Automatic Switch

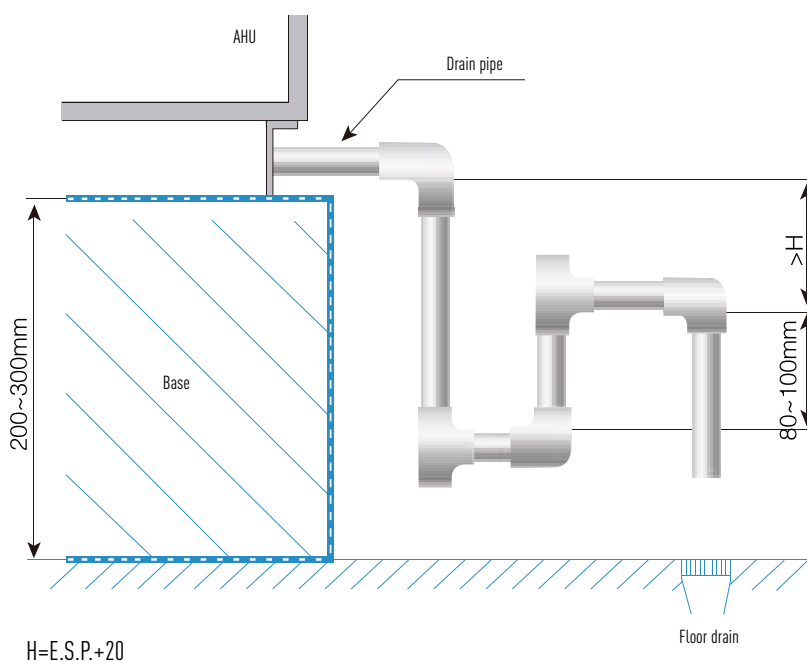
The control system may need to automatically monitor indoor and outdoor temperatures and automatically switch between cooling and heating modes based on the feedback data. When the system detects that the control temperature is lower than a certain value or is lower than the set value for a period of time, the cooling and heating automatic control mode is started.

#### Service Reminder

The control system provides a housekeeper service alert function. According to the accumulated running time of the main components such as the compressor, the user is reminded to perform maintenance and replacement, so that the user feels more at ease with confidence.

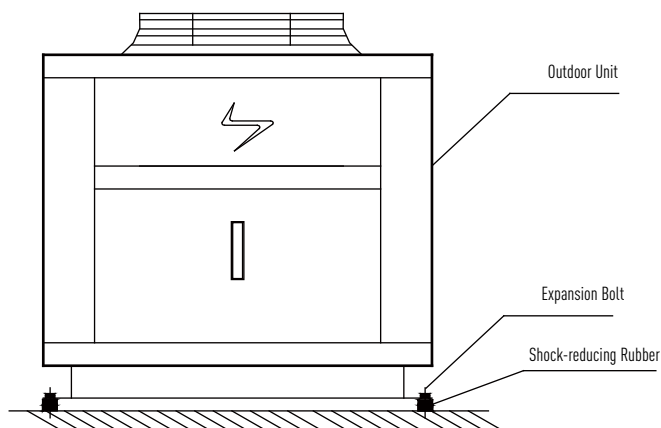
## ► Installation

- 1) There should be enough space for equipment maintenance on the side of the unit access door or water pipe connection.
- 2) The unit foundation is designed according to the length and width of the unit and must be kept level and flat.
- 3) The foundation should be higher than the ground to facilitate the setting of condensation traps. As shown.
- 4) After the water line of the external pipeline is cleaned, it can be connected with the inlet and outlet pipes of the unit. The unit's external valves, piping, and other weight must not be assumed by the unit.
- 5) The air inlet and outlet of the unit must be connected with a soft joint.
- 6) The external skin of the unit should be grounded, and the startup of the motor with a value greater than 15KW is recommended to use a step-down startup mode.



## ► Outdoor Unit Installation

- 1) The unit must be installed to ensure that the fasteners of the unit are evenly distributed.
- 2) The unit must be cushioned with shock-absorbing rubber to reduce vibration propagation during unit operation (see below).
- 3) The outdoor fan is an axial fan and is not suitable for the air duct.
- 4) The outdoor unit and the indoor unit should be as close as possible to reduce the number of elbows transported by the refrigerant.

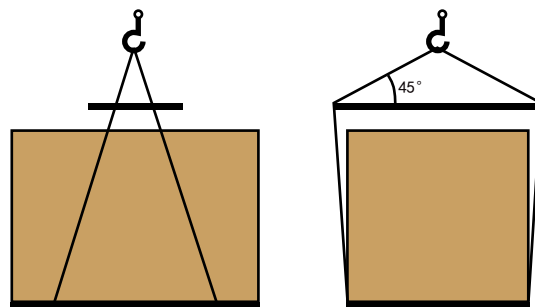


Distance of outdoor machines (m)

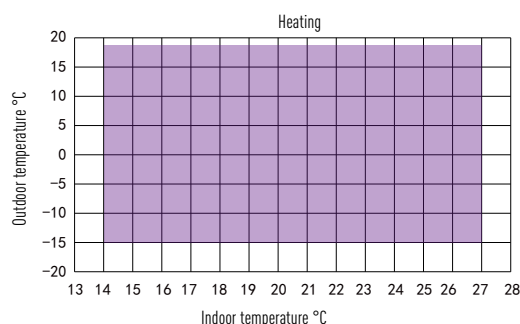
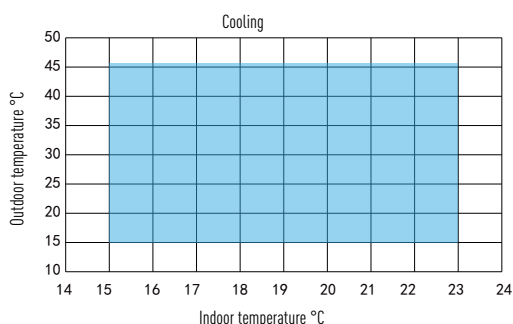
The top of unit	2.5
The front of unit	0.5
The side of unit	0.5
The bottom of unit	0
Multiple installation intervals	1.2

### ► AHU Transportation

When the unit arrives at the site for handling, hoisting and installation, each unit should be carefully protected to avoid damage to the unit from the carriage, forklift or crane. When moving with a forklift, the forklift must be level and cannot lean back. During the lifting process, the body should be kept in balance, and do not suddenly lift or shake. The unit must be hoisted with all lifting holes in the base. In any case, the support frame should be used on the sling to avoid damage to the rack, electrical box, coil and fan. The lifting diagram is as follows.



### ► Safe Operating Conditions of The Unit



If used outside of the above operating conditions, the safety protection function of the unit will be protected, and the air-conditioning function may be abnormal.

### ► AHU Operation and Maintenance

- 1) The air handling unit power supply system uses TN-S system power supply, namely AC3--380V+N+PE.
- 2) The fan vibration damping device must be removed before the air handling unit operates.
- 3) Before start-up, it is necessary to check whether the rotation of the fan impeller is flexible or not, and check the rotation direction of the fan. All mechanical electrical equipment is inspected by professional personnel and can be turned on without exception.
- 4) The unit should be commissioned systematically, controlling the motor running at the rated current to prevent the motor from being overloaded and burned out. Do not fully close the air inlet damper of the unit to prevent damage and deformation of the unit.
- 5) The heat exchanger cold and hot medium is clean and softened water, and its working pressure must not exceed 1.6 MPa. The supply pressure of the steam source is 0.2 MP-MPa.
- 6) Periodically inspect the air filter statue. When the resistance reaches the final resistance, it should be cleaned or replaced.
- 7) Check belt tension and wear regularly. If it is too loose, adjust the tensioning belt of the adjusting bolt at the bottom of the motor; checking the lubrication condition of the bearing and periodically add the base grease.



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Data is subject to changes without notification due to product improvement