

# THE WORLD'S OBAIR

In the vast global innovation landscape, "Obair" shines like a brilliant star, leading the wave of technological innovation.

We are not just a company, but also advocates and practitioners of the global upgrade in quality of life.

In the world of Obair, technological innovation is not only a driving force but also the soul.

We firmly believe that "Obair" will resonate in every corner of the world, representing excellence, quality, and dreams.

We cross mountains and seas, connecting the five continents, adding a bright color to the global stage of life, becoming a synonym for beauty in the hearts of people around the world, and together writing a glorious chapter in human civilization.



The related products of Oubo have obtained the above certification, and the specific product certification is detailed in the relevant product certification certificate

## Haojin Oubo Technology Co.,Ltd

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Note: There may be discrepancies between all product descriptions, data, and actual products in this catalog. Please refer to the actual product. Changes will not be notified separately.

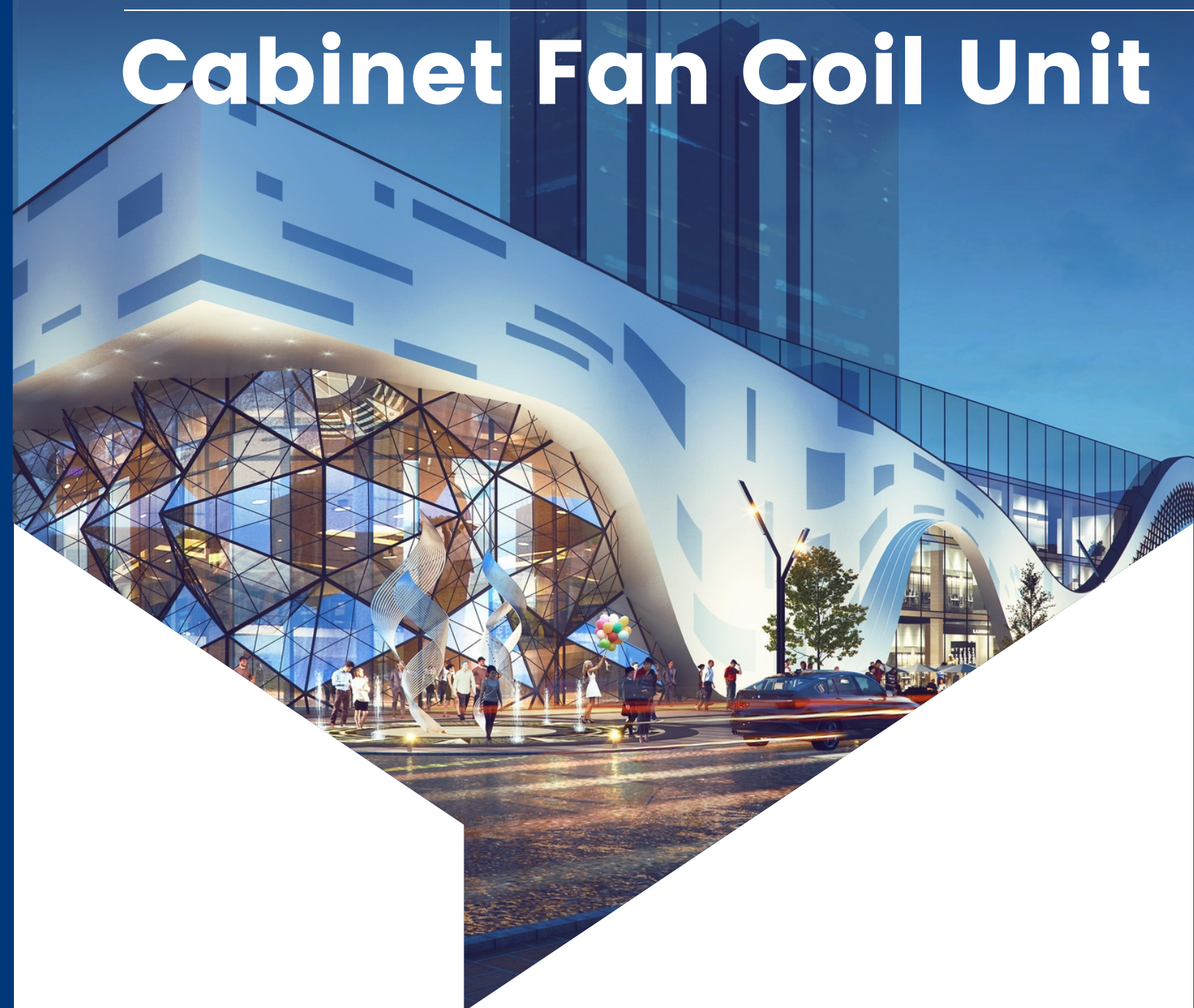


Official WeChat  
Public Account

# OBAIR

FG |

## Cabinet Fan Coil Unit



OBAIR 欧博  
Central air conditioning

Version NO.: OB-202507A  
Haojin Oubo Technology CO., LTD



## COMPANY PROFILE

Haojin Oubo Technology Co., Ltd. is a large-scale purification central air conditioning national high-tech enterprise integrating research and development, production, sales, and service.

Obair has always adhered to technological innovation, participated in the formulation of national and industry standards as a member unit of China's "Cold Standard Committee", and has obtained multiple invention patents and utility model patents. It has established industry-university-research bases with Nanchang University and Jiangxi University of Science and Technology. It is a key demonstration enterprise for deep integration of informatization and industrialization in Jiangxi Province, a demonstration enterprise for service-oriented manufacturing in Jiangxi Province, and the company has successively won honors such as Jiangxi Province Technology Center, Ganzhou City Industrial Design Center, Jiangxi Famous Brand Product, national green factory, and national specialized and innovative "little giant" enterprise.

Obair currently has two phases in Ganzhou, Jiangxi, using digital park management, with over 120 digital production equipment, achieving an annual production capacity of 100,000 units.

Obair currently has more than 1000 models of high-quality air conditioning products independently developed, and the products have obtained energy-saving certification, CRAA, EU CE certification, American AHRI certification and other authoritative institutions' testing and certification, widely used in hospitals, dust-free workshops, pharmaceutical factories, electronics, tobacco, painting, photovoltaic, new energy, semiconductor, laboratory and other industries, and has the industry reputation of "King of Cleanliness" and "King of Constant Temperature and Humidity Non-standard".

Obair strictly implements the ISO9001/ISO14001/ISO45001 management system, always practices the purpose of "willing to explain the price for a while, but not to apologize for the quality for a lifetime", proposes the "6-hour" on-site service concept for all customers and for all customers, and provides the most professional and high-quality technical support and after-sales service.

From the mission, born for purification!

Obair, your regret-free choice!

**170,000** square meters  
of complete machine production base

**70+**  
National Service Contact Points

**1000+**  
employees

**100,000+**  
Pilot Project Air Conditioning Solutions





# HONORARY QUALIFICATIONS



Advanced equipment, professional technology and strict management have created the high quality of "OBAIR" brand products.

It has successively won dozens of honors such as national high-tech enterprise, China's well-known brand, specialized and special new enterprise, cold standard committee enterprise, provincial service-oriented manufacturing demonstration enterprise, provincial enterprise technology center, Jiangxi famous brand product, etc.

"OBAIR" products are your reliable choice.

100<sup>+</sup>

It has obtained more than 10 certifications and more than 100 patents.



National Cold Standard Committee Member Certificate

Engineering Practice Teaching Cooperation Base

Demonstration Enterprise for Development and Upgrading

National Specialized and Innovative "Little Giant" Enterprise

National Green Factory

National High-tech Enterprise

Provincial Demonstration Enterprise for Service-oriented Manufacturing

Top Ten Economic Personalities of the Year

Jiangxi Province Famous Brand Product

Enterprise Technology Center

AHRI Certificate

TUV Certificate







### Low Air Leakage Rate

The aluminum profile press strip and the box panel are sealed with a face-to-face pressure method, resulting in an aesthetically pleasing and tidy appearance, and a low air leakage rate for the entire unit.



### Anti-cold-bridge Structure

The interior and exterior junctions of the box are all filled with double-layer pressure-resistant, wear-resistant, and wind-tight sealing strips, combined with PVC anti-cold-bridge strips, to completely isolate the heat conduction components and eliminate cold bridge phenomena.



### Superior Corrosion Resistance

The integrated stainless steel water pan offers superior corrosion resistance; the internal ribs of the water pan ensure smooth drainage of the unit, with no water retention, thus preventing the breeding of bacteria.



### Easy to Assemble and Disassemble

The unit eliminates the need for bolts and nuts used in point-to-face sealing methods, making assembly and disassembly more convenient.

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## » Product Overview

1. The FG series cabinet fan coil unit has three standard structural forms: ceiling-mounted, vertical, and jet direct-blowing, as well as non-standard customization to meet different application scenarios.

2. The FG series cabinet fan coil unit is specially designed for ceiling installation, saving space. The handling air volume is 1600m³/h to 50000m³/h, the cooling capacity is 10.2 to 937kW, and the static pressure is from 120 to 600Pa. It can be used for cooling or heating in return air conditions and can also be used as fresh air. Each model has a heat exchanger of C type, D type, E type, and 10 pieces/inch, 12 pieces/inch. The unit structure introduces advanced Taiwanese technology. After careful design, it has reliable quality and stable performance, and has the following characteristics:

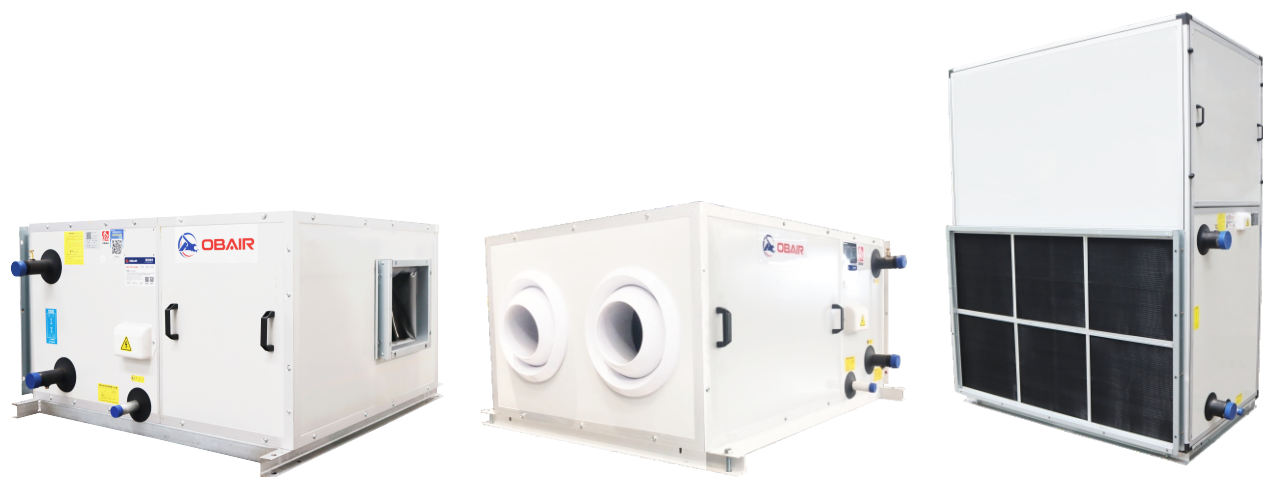
(1) The cabinet adopts an aluminum alloy frame double-panel structure. The panel is made of high-quality color steel plate, and the interlayer is filled with insulation materials. It has a compact structure, beautiful appearance, anti-condensation, easy maintenance, and low noise.

(2) The fan adopts a forward-curved multi-blade double-inlet centrifugal fan. After dynamic and static balance correction, the fan has high efficiency. It is equipped with imported bearings, shock absorption systems, and flexible connection devices. The unit runs smoothly and is very quiet.

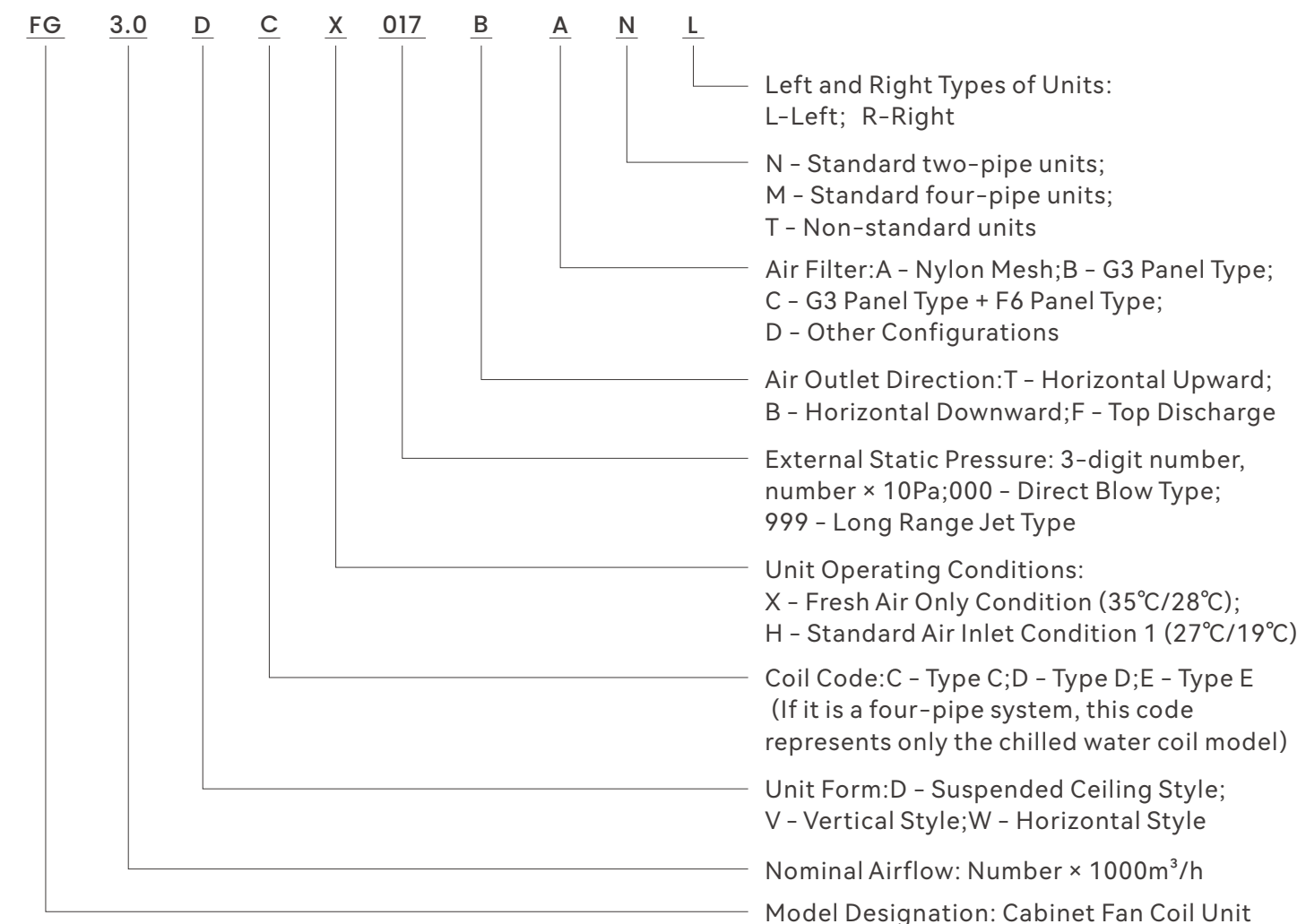
(3) The heat exchanger adopts the overall louvered form of corrugated aluminum fins and high-quality copper tubes. Through secondary flanging technology and mechanical tube expansion, it ensures close contact, high heat exchange efficiency, low air resistance and water resistance, and is easy to clean.

(4) The air filter of the unit is a double-layer nylon mesh filter, which is convenient to install and disassemble, easy to clean, and can be used for a long time with high filtration efficiency. The product has the advantages of strong cooling capacity, high efficiency, low noise, and durability. It is an ideal product for supporting equipment in central air conditioning systems with high requirements for air volume, cooling capacity, humidity, and cleanliness in various high-end hotels, shopping malls, office buildings, factory workshops, etc.

(5) The FG\*S jet fan coil unit is a new type of fan coil unit developed by Haojin Oubo for customers. The unit has a ceiling structure, power supply of 380V/3-50Hz, and uses a superior spherical nozzle as the air outlet. Long-distance direct air supply can be achieved without ducts, saving space, reducing floor height, and greatly reducing the one-time investment cost.

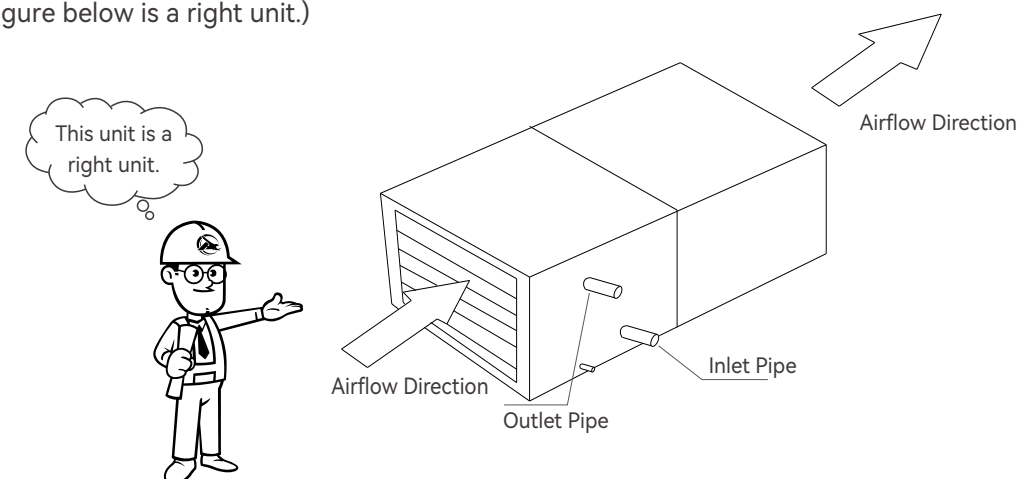


## » Model Description



### Judging the Left or Right Type of the Unit

Facing the air intake, if the water inlet and outlet pipes are on the left, it is a left unit; otherwise, it is a right unit.  
(The unit shown in the figure below is a right unit.)



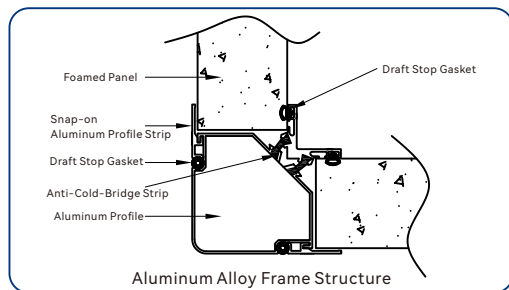


## >> Product Features

### Superior Cabinet Construction

#### Low Air Leakage, No Cold Bridge, Aesthetically Neat and Tidy

- The air conditioning unit features an aluminum alloy frame structure with a seamless wedge board docking technology, and the aluminum profile press strip and box panel are sealed with a face-to-face pressure method, resulting in an aesthetically pleasing and tidy appearance with a low air leakage rate.
- The use of bolts and nuts in the point-to-face sealing method has been eliminated, making assembly and disassembly more convenient.
- Double-layer pressure-resistant, wear-resistant, and air-tight sealing strips are filled at all internal and external junctions of the cabinet, in conjunction with PVC anti-cold-bridge strips, to completely isolate heat conduction components and prevent cold bridge phenomena.



### Stainless Steel Material Water Pan

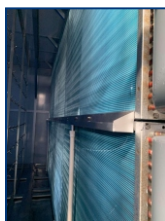
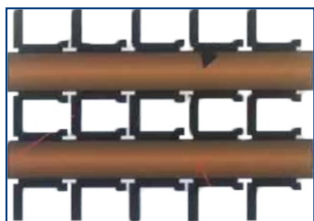
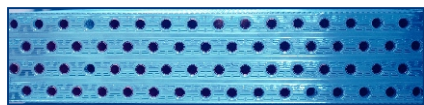
- The unit features an integrated stainless steel water pan, which offers superior corrosion resistance.
- The bottom and sides of the water pan are insulated, isolating cold bridges.
- The internal ribs of the water pan ensure smooth drainage of the unit, with no water retention, thus preventing the breeding of bacteria.



### Superior Component Configuration

#### High-Efficiency Heat Exchange Coil

- Double-rolled sine wave-shaped aluminum fins and push-in copper tubes ensure uniform fin spacing and airflow velocity, resulting in a heat transfer efficiency that is about 5% higher than the industry average.



### Fans in Various Forms Balance Cost-effectiveness and Energy Efficiency

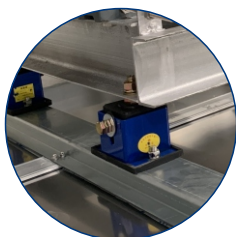
- All fans are certified by the Air Movement and Control Association (AMCA).
- Fan bases are equipped with spring vibration isolators or shear prevention isolators, effectively reducing vibration and noise.



Belt Drive



Direct-drive Fan



Vibration Isolators

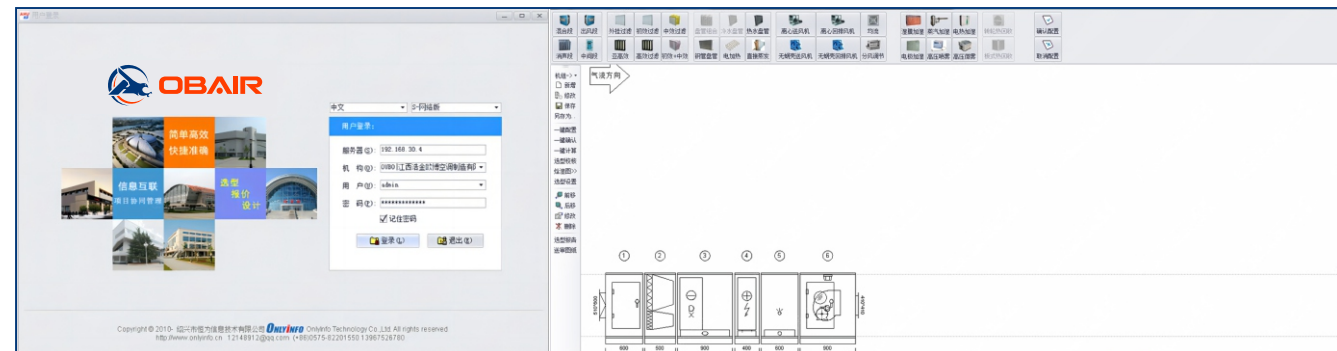
### Air Purge Circuit Design

- Air and drainage valves are installed at the water inlet and outlet, with a full purge piping design to prevent water retention in the pipes.



### Professional Air Handling Unit Selection and Design Software

- The software embeds high-precision selection data, which has been extensively and repeatedly verified to ensure consistency between the selection and actual production.
- The software intelligently recommends the optimal solutions for core components such as heat exchangers, fans, and motors.



### Various Forms, Customized According to Needs

OBAIR air handling units come in four forms: ceiling - mounted, horizontal, vertical, and jet types. They can be customized according to the specific requirements of the site.

Ceiling - mounted	Horizontal	Vertical	Jet
The unit comes standard with a front lower horizontal air outlet, which does not occupy floor space and only needs to be installed in the ceiling or suspended in the air. Its characteristics are small air volume, low unit height, and low residual pressure.	The unit comes standard with a front upper horizontal air outlet, which is applied when there is a lack of overhead space and there is a machine room or other installation site. Its characteristics are a larger air volume and a higher designed residual pressure.	The unit comes standard with a front upper top air outlet design, which is required for top air supply and when there is not much floor space. It meets the user's requirement for top air supply and provides larger capacity specifications. The characteristics are a larger air volume of the unit and a higher designed residual pressure.	The unit comes standard with a front horizontal jet air outlet design, which is suitable for scenarios where space buildings do not have ducts for air supply. It features a long range, low noise, and adjustable air supply angles.

### Integral Structure, Faster and More Convenient Installation

Adopting an integral structure design, its advantage lies in the fact that the whole machine can fully ensure the airtightness and strength of the casing during transportation, and is convenient for installation.

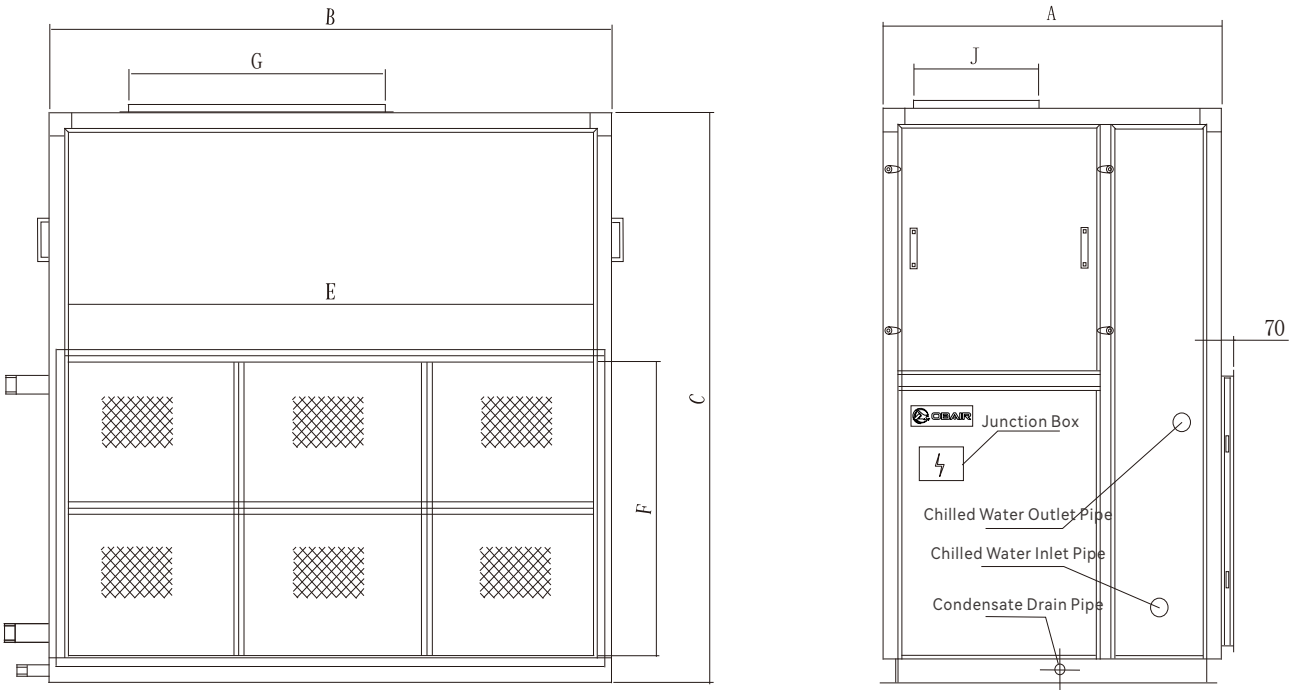


Unit Air Outlet Configuration

Type	Air Outlet Direction		Model Specifications	Code Name	Schematic Diagram
Vertical Unit	Horizontal Air Discharge (T)	Front Inlet, Rear Outlet	FG4.0-FG45	I	
		Front Inlet and Outlet	FG4.0-FG45	II	
	Top Discharge (F)	Front Inlet and Top (Rear) Outlet	FG4.0-FG45	III	
		Front Inlet and Top (Front) Outlet	FG4.0-FG45	IV	
Suspended/Horizontal Unit	Horizontal Air Discharge (T/B)	Front Inlet and Top (Front) Outlet	FG1.6-FG24	V	
		Front Inlet and Rear (Bottom) Outlet	FG1.6-FG24	VI	
	Top Discharge (F)	Front Inlet and Top Outlet	FG1.6-FG24	VII	

Note:  
The standard air discharge method code for suspended cabinet fan coil units is VI;  
The standard air discharge method code for vertical cabinet fan coil units is III;  
The standard air discharge method code for horizontal cabinet fan coil units is VII;  
If there are any modifications to the materials, we will not notify you separately. For the latest information, please visit our company's website or contact us directly.

Vertical



Unit Dimensions and Weight Table

Model	External Dimensions (mm)			Standard Static Pressure Pa	Motor Power kW	Supply Air Outlet Dimension G*J	Return Air Inlet Dimension E*F	Condensate Pipe Diameter DN	Weight	
	L	W	H						Type C	Type D
	A	B	C						kg	kg
4.0	700	1005	1265	200	1.1	330*290	914*468	25	131	158
6.0	700	1105	1455	200	2.2	330*290	1014*662	25	156	183
8.0	700	1250	1595	250	3	395*340	1158*733	25	216	247
10	900	1355	1735	250	4	405*405	1263*860	25	294	331
13	900	1575	1850	300	4	455*455	1485*927	25	336	361
18	1000	1705	2050	300	5.5	505*505	1614*1044	32	399	446
24	1200	1775	1640	350	7.5	1260*455	1686*1470	32	525	578
36	1260	2005	1895	400	11	1415*505	1912*1732	32	642	695
45	1460	2546	1920	500	15	1775*640	2455*1756	32	780	850

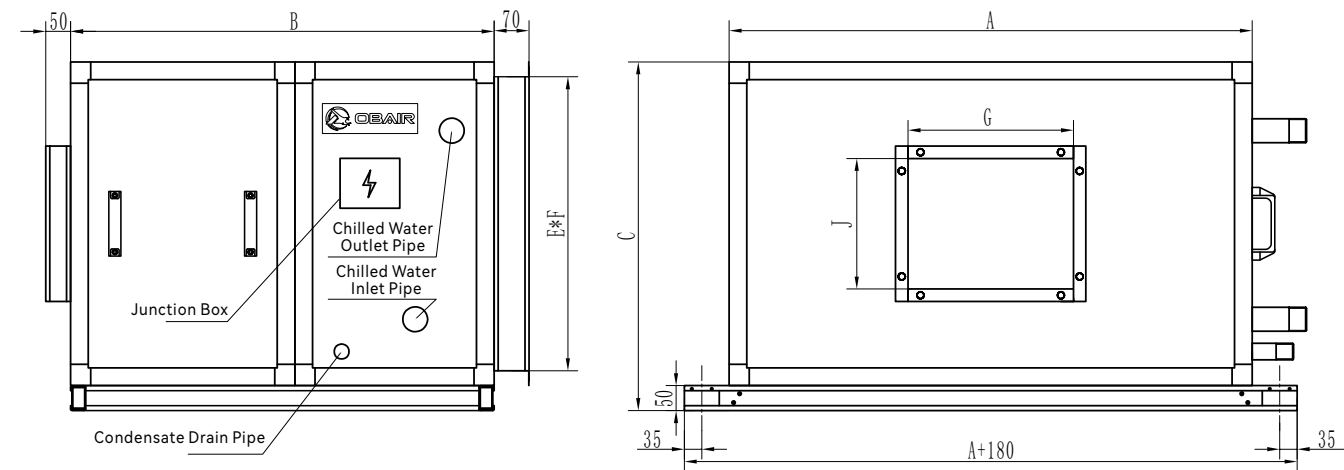


» Airflow, Static Pressure, and Motor Configuration Table

Model	External Static Pressure (Pa)									
FG	80	120	160	200	250	300	350	400	500	600
	Motor Starter (kW)    Power Supply:380V/3N~/50Hz									
4.0	0.55	0.75	0.75	1.1	1.1	1.1	1.5			
6.0	1.5	1.5	1.5	2.2	2.2	2.2	3			
8.0	1.5	1.5	1.5	2.2	3	3	3	3	3	
10	2.2	2.2	2.2	3	4	4	4	4	4	
13		2.2	3	3	3	4	4	4	5.5	5.5
18				4	4	5.5	5.5	5.5	7.5	7.5
24						5.5	7.5	7.5	7.5	7.5
36						7.5	11	11	11	15
45						11	11	15	15	18.5

Note:  
 This table is applicable to vertical units;  
 Should there be any changes to the information, no prior notice will be given. For the latest information, please visit our company's website or contact us.

» Ceiling - mounted



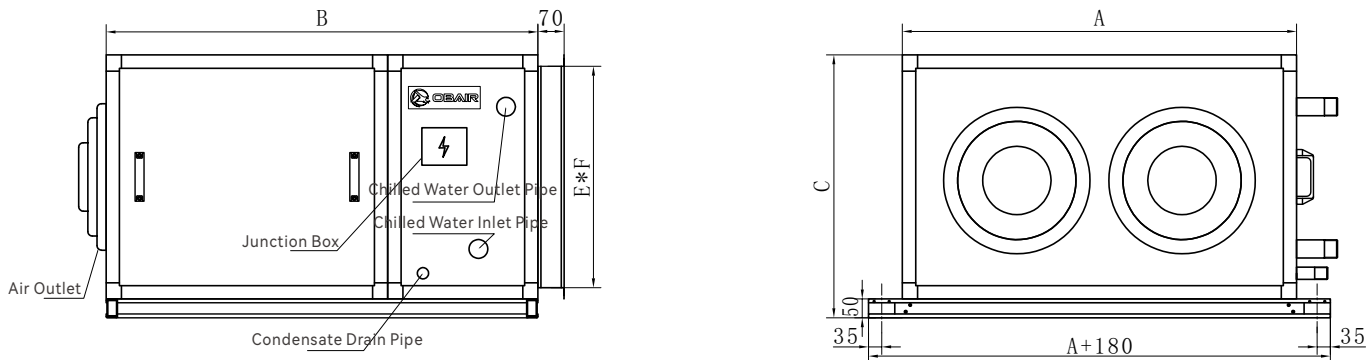
Dimensions and Weight Table

Model	External Dimensions (mm)			Supply Air Outlet Dimension (mm)	Return Air Inlet Dimension (mm)	Condensate Pipe Diameter	Weight	
	L	W	H				Type C	Type D
	A	B	C	G*J	E*F	DN	kg	kg
1.6	550	800	550	225*220	488*438	25	85	98
2.5	850	800	550	300*300	788*438	25	110	130
4.0	950	850	650	410*310	888*538	25	120	145
6.0	1250	850	700	540*380	1188*588	25	130	155
8.0	1500	850	650	850*300	1438*538	25	164	190
10	2000	850	650	1040*330	1938*538	25	210	240
13	2150	950	750	1230*360	2088*638	25	310	340
18	2350	1000	850	1360*440	2288*738	32	325	350
24	2050	1100	1150	1290*560	1988*1038	32	440	490

Note:  
 FG1.6 – FG3.0 are direct - coupled drive units;  
 The external dimensions of the FG\*W series units are consistent with those of the FG\*D units.



Remote Jet Type



Performance Parameter

Model	Airflow	Application Range	Range	Distance Recommendation	Matching Motor	Power Supply	Return Air Duct Size(mm)
	CMH	m³/h	m	m	kW		E*F
4.0	4000	3200-5400	15	20	1.1	380V/3N~ /50Hz	888*538
6.0	6000	5400-7800	20	25	1.5		1188*588
8.0	8000	7800-10500	20	25	2.2		1438*538
10	10500	10500-13200	25	30	3		1938*538

Explanation:

1. The maximum coverage width of the unit's range is approximately 0.4 times the range. The layout of the unit should consider the air diffusion angle, and the spacing should not be too large. The unit can consider single - sided or relative air supply.
2. The above parameters (air volume, range, etc.) are the parameters of the unit without a return air duct. If the customer actually uses a return air duct, please provide the resistance of the return air duct, and OBAIR Air Conditioning will determine the appropriate configuration of the fan motor pulley for the customer.

Dimensions and Weight Table

Model	External Dimensions (mm)			Air Outlet (mm)	Condensate water pipe diameter	Weight	
	L	W	H			Type C	Type D
	A	B	C			kg	kg
4.0	950	1350	650	φ315*2	25	138	165
6.0	1250	1350	700	φ315*2	25	164	191
8.0	1500	1350	650	φ315*3	25	205	235
10	2000	1350	650	φ315*3	25	308	347

Note: The cooling parameters of the unit are selected according to the FG standard products.

Performance Parameter

Return Air Condition

Model FG	Airflow		Type C					Type D				
	Standard Airflow	Airflow Range	Rated Cooling Capacity	Rated Heating Capacity	Water Flow Rate	Water Resistance	Pipe Diameter	Rated Cooling Capacity	Rated Heating Capacity	Water Flow Rate	Water Resistance	Pipe Diameter
	m³/h*1000		kW	kW	m³/h	kPa	DN	kW	kW	m³/h	kPa	DN
1.6	1.6	1.4~2.1	11.2	20.3	1.9	9	32*2	14.7	24.3	2.5	19.5	32*2
2.5	2.5	2.1~3.2	18.2	32.8	3.1	18	40*2	22.9	37.7	3.9	38	40*2
4.0	4.0	3.2~5.4	29.5	52.3	5.1	42	40*2	38.0	62.6	6.5	49.5	40*2
6.0	6.0	5.4~7.8	42.8	77.0	7.4	43.8	40*2	53.2	87.9	9.2	46	40*2
8.0	8.0	7.8~10.5	57.0	105.5	9.8	39	40*2	71.0	117.0	12.2	51	40*2
10	10.5	10.5~13.2	75	129.7	12.9	51	40*2	95	156.1	16.3	52	50*2
13	13.5	13.2~17.4	94.5	170.0	16.3	47	50*2	117.0	193.2	20.1	52	50*2
18	18	17.4~22.8	128.9	232.1	22.2	43	65*2	164	270.5	28.2	49	65*2
24	24	22.8~31.2	171.8	309.3	29.6	49	80*2	218.5	360.5	37.6	35	80*2
36	36	31.2~44	278	500	48	36	100*2	310	511	53	38	100*2
45	45	44~58	313	562	54	35	100*2	405	668	70	44	100*2

Note:

1. For cooling: The inlet air dry-bulb temperature is 27°C, and the wet-bulb temperature is 19.5°C. The inlet / outlet water temperature is 7°C/12°C.
2. For heating: The inlet air dry-bulb temperature is 15°C, the inlet hot water temperature is 60°C, and the water flow rate is the same as that of the cooling water.
3. This table is applicable to ceiling - mounted, horizontal, and remote jet types.
4. Should the specifications be changed due to product improvement, no separate notice will be given.

Fresh Air Condition

Model FG	Airflow		Type C					Type D				
	Standard Airflow	Airflow Range	Rated Cooling Capacity	Rated Heating Capacity	Water Flow Rate	Water Resistance	Pipe Diameter	Rated Cooling Capacity	Rated Heating Capacity	Water Flow Rate	Water Resistance	Pipe Diameter
	m³/h*1000		kW	kW	m³/h	kPa	DN	kW	kW	m³/h	kPa	DN
1.6	1.6	1.4~2.1	25.9	26.9	4.4	10.4	32*2	30.6	31.80	5.3	22.4	32*2
2.5	2.5	2.1~3.2	38.1	39.7	6.5	20.7	40*2	50.3	52.30	8.7	43.7	40*2
4.0	4.0	3.2~5.4	61.4	63.9	10.6	48.3	50*2	79.5	82.70	13.7	56.9	50*2
6.0	6.0	5.4~7.8	96	99.6	16.5	37.2	50*2	112.8	117.37	19.4	59.6	50*2
8.0	8.0	7.8~10.5	127.5	132.6	21.9	51.3	50*2	150.5	156.50	25.9	52.4	50*2
10	10.5	10.5~13.2	160.7	167.4	27.6	58.7	65*2	199.9	207.90	34.4	59.8	65*2
13	13.5	13.2~17.4	200.0	208.0	34.4	43.8	65*2	250.0	260.30	43.0	56.0	80*2
18	18	17.4~22.8	273.0	284.0	47.0	35.6	80*2	366.3	380.90	63.0	57.0	80*2
24	24	22.8~31.2	364	378.6	62.6	56.0	100*2	488.4	507.90	84.0	41.0	100*2
36	36	31.2~44	511	550	88	36	100*4	688	716	53	38	100*4
45	45	44~58	663	618	114	35	100*4	795	735	137	44	100*4

Note:

1. For cooling: The inlet air dry-bulb temperature is 35°C, and the wet-bulb temperature is 28°C. The inlet / outlet water temperature is 7°C/12°C.
2. For heating: The inlet air dry-bulb temperature is 7°C, the inlet hot water temperature is 60°C, and the water flow rate is the same as that of the cooling water.
3. This table is applicable to ceiling - mounted, horizontal, and remote jet types.
4. Should the specifications be changed due to product improvement, no separate notice will be given.



>>
 Airflow, Static Pressure, and Motor Configuration Table

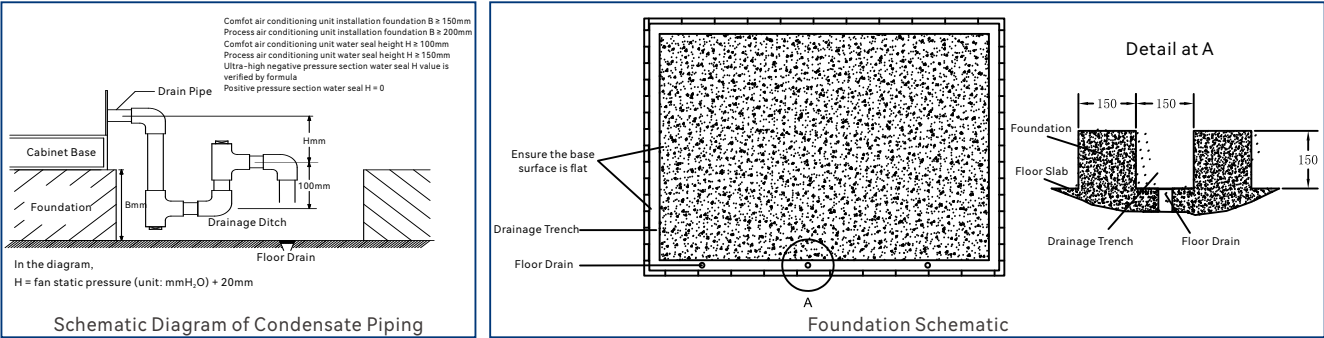
Model FG	Coil Code	External Static Pressure (Pa)								
		80	120	160	200	240	280	320	360	400
		Motor Starter (kW)    Power Supply:380V/3N~/50Hz								
1.6	Type C	0.18	0.25							
	Type D	0.25	0.25							
2.5	Type C		0.37	0.37	0.45	0.45				
	Type D		0.37	0.45	0.45	0.45				
4.0	Type C			1.1	1.1	1.1	1.1	1.1	1.1	1.1
	Type D			1.1	1.1	1.1	1.1	1.1	1.1	1.1
6.0	Type C			1.1	1.1	1.1	1.5	1.5	1.5	1.5
	Type D			1.1	1.1	1.5	1.5	1.5	1.5	1.5
8.0	Type C			1.5	2.2	2.2	2.2	2.2	2.2	2.2
	Type D			2.2	2.2	2.2	2.2	2.2	2.2	2.2
10	Type C			2.2	3	3	3	3	3	3
	Type D			3	3	3	3	3	3	3
13	Type C			3	3	3	3	4	4	4
	Type D			3	3	3	4	4	4	4
18	Type C				4	4	4	4	5.5	5.5
	Type D				4	4	4	5.5	5.5	5.5
24	Type C						5.5	5.5	5.5	5.5
	Type D						5.5	5.5	5.5	7.5

Note:

- The values in the table represent the motor power of each model unit under different external static pressures, with the unit being kW.
- This table is applicable to ceiling - mounted and horizontal types.
- Should there be any changes to the information, no separate notice will be given. For the latest information, please visit our company's website or contact us.

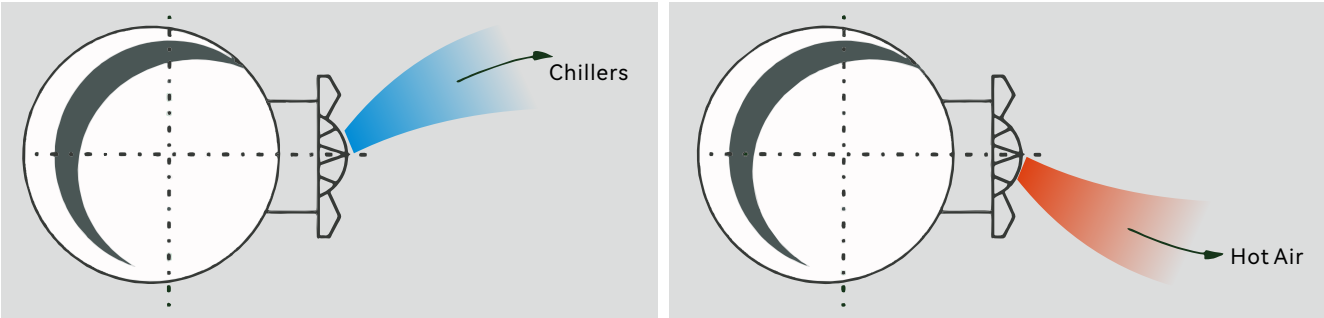
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 Installation and Operation Manual

Unit Installation



- Except for ceiling units, all structural types of air-conditioning units should be installed on a horizontal base.
- Around the unit, especially the unit piping and fans and motors on the side of the maintenance door, there should be sufficient space to facilitate the daily inspection and regular maintenance of the unit.
- Condensate outlet must be connected to a ‘U’ shaped discharge pipe before connecting with the external pipe.
- When connecting the inlet and outlet pipes of the coiler, the force should be balanced and should not be too strong to avoid damaging the coiler.
- The motor of the air-conditioning unit should be connected to the power supply with overload protection and grounding protection.
- Air-conditioning unit and external air ducts should be flexible connections to avoid vibration transfer.
- The jet cabinet type unit lifting method is basically the same as the hanging cabinet type unit, the difference is that the jet cabinet type unit does not need to send the air duct to the air supply outlet;
- Jet cabinet unit installation, need to check the jet nozzle range within the range of any obvious obstacles, such as the need to adjust the installation position or exclude obstacles to prevent blocking the jet;
- Jet cabinet unit before use, need to check the direction of the jet nozzle, can be adjusted according to actual demand. In general, when sending cold air, the nozzle is adjusted to the upward angle; when sending hot air, the nozzle is adjusted to the downward angle.

Jet Nozzle Adjustment





Unit Utilization

1. Before installing the unit, thoroughly inspect for any damage to the unit. If damage is found, please contact the seller promptly for repair.
2. Before wiring, check that the voltage, frequency, and phase amplitude of the power supply match the unit's specifications, with the voltage deviation not exceeding 10% of the rated voltage. Before starting the fan, you must enter the fan chamber and manually rotate the fan wheel to carefully check for any metal friction sounds. If any abnormalities are found, they should be addressed. After the power is connected and the fan is started, check whether the rotation direction of the wheel is correct. If the direction is incorrect, simply swap the phase sequence of the power input.
3. It is recommended to install a static pressure box at the unit's outlet and a damper on the duct to adjust the airflow. Install fire dampers according to fire protection requirements. If an electric damper is installed, the damper actuator should be activated before the fan starts and deactivated after the fan stops.
4. Before connecting the water pipes, pay attention to cleaning the pipes. Connect the cold (hot) water inlet and outlet according to the unit's markings. The unit's water inlet pipe must be equipped with a valve and a filter device to regulate the flow rate. When servicing, cut off the cold (hot) water supply and prevent impurities from entering the heat exchanger to avoid blockages. The inlet and outlet pipes must be insulated with thermal insulation.
5. When connecting the water pipes, use a pipe wrench to secure the inlet and outlet pipes, and avoid applying torque to them. It is recommended to use PTFE tape for sealing to prevent leaks. The condensate water produced by the unit must be connected with a certain height of water seal and drained to the sewer through a drain pipe.
6. The weight of the ducts, water pipes, etc., connected to the unit must not be borne by the unit itself.
7. The unit must have a reliable ground connection, and the electrical circuits must be checked to ensure they meet safety requirements.
8. The unit must be installed by professionals who are familiar with the product and understand local regulations. During installation, avoid collisions, pressure, and scratches.

Maintenance and Upkeep

1. Check whether the water pipe pipeline is normal, and will be completely excluded from the pipeline gas, check whether the duct pipeline is normal, and will be placed in the pipeline valves in the normal position, check the motor coil of the grounding resistance, must be in the 1.0MΩ above. Power test run, check whether the fan is running normally, there is no noise, installation and maintenance process must cut off the power supply.
2. Before use and in use once a month to clean the air filter, aluminium surface and copper tube inside the heat exchanger must be cleaned once a year, once a year to clean the water plate, once a year to clean the water seal elbow.
3. After one month of normal operation, the unit should be stopped to check the tightness of the belt and adjust it; those with refuelling holes should be filled with lubricating oil; check whether the bolts in the key parts are loose and tighten them;
4. If the fan is running all year round, the grease of the bearings (only for the pedestal bearings) should be added according to the following table; those who are shut down in the transitional season should also ensure that the grease is added once a year.

Conditions of Use	Grease Adding Intervals
General	3 to 6 Months
Hostile (Dusty)	1 Week to 1 Month

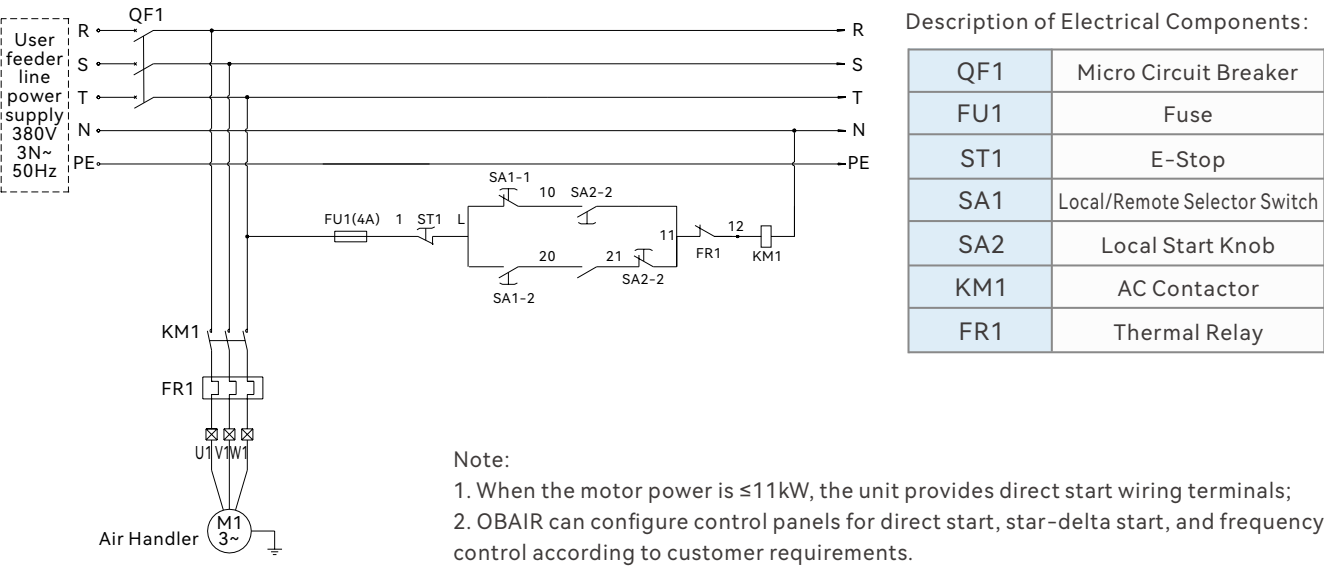
- Note: Due to the fan in the process of operation, the bearing will heat, and produce centrifugal force, its internal pressure will increase, and lead to the bearing internal grease will appear to a certain degree of overflow, this is a normal phenomenon.
5. After two years of operation, the unit should be fully maintained. Remove the scale in the heat exchanger tube by chemical method, and then flush the fin surface with compressed air or water.
  6. The motor wheel bearings must be cleaned every year and replaced if necessary.

Unit Control

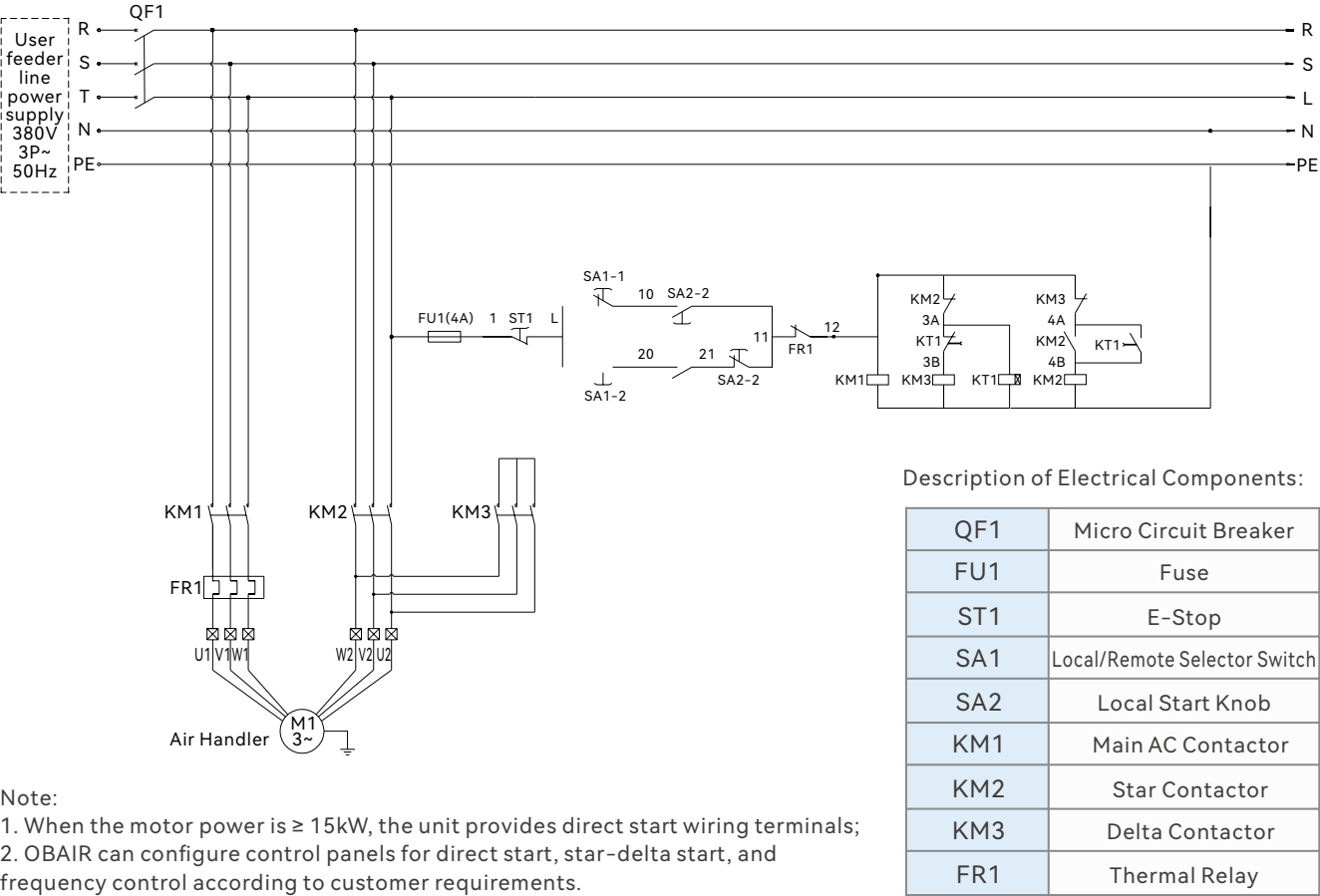
Based on the varying needs of our customers, OBAIR Air Conditioning can provide different control cabinets. For applications with less demanding electrical grid requirements, direct start or star-delta starting can be chosen. When the motor power is ≥11kW, OBAIR Air Conditioning standardly selects star-delta starting. If the customer opts for frequency conversion starting, please specify it before placing the order.

Electrical Wiring Diagram

Direct Start Type: (Motor Power ≤ 11kW)



Star-Delta Starter Type: (Motor Power ≥ 15kW)





Common Fault Diagram and Troubleshooting Methods

Fault Symptoms	Potential Sites	Cause of Failure	Diagnosis and Troubleshooting Methods
Windless	Motor	No Power Supply	Connect or Check the Power Supply
		Lack of One Phase	
		Motor Burnout	Replace the Motor
	Fan	Bearing Seizure or Burnout	Replace the Bearings
		Broken Belt	Replace the Belt
Insufficient Airflow	Fan	Actual parameters do not match the design parameters	Adjust the fan speed (increase the speed)
		Loose belt	Adjust the belt tension
		Fan reversal	Switch any two phases of the three-phase power supply
	Ventilation System	Excessive actual system resistance	Inspect the ducts and equipment for blockages and eliminate them The damper opening is insufficient and needs adjustment
		Air leakage in equipment or system	Leak sealing
		The filter is clogged with dust	Clean or replace the filter
		Dust accumulation on fin surfaces	Clean the heat exchanger
Excessive Airflow	Fan	Actual parameters do not match the design parameters	Adjust the fan speed (reduce the speed)
	Ventilation System	System resistance is too low	Adjust the valve to increase resistance
		Filter damage causing air leakage	Replace the filter
Insufficient Cooling Capacity (At the terminal unit)	Coil	Inlet water temperature is higher than standard (standard is 7 degrees)	Check the customer's main unit outlet water temperature
		Water flow rate is low (resulting in higher outlet water temperature)	Adjust the water flow rate (standard is 12 degrees Celsius, the lower the temperature, the greater the cooling capacity) If the water valve cannot be adjusted, check the performance of the water pump (to increase water flow rate)
	Load	Actual load is too high, exceeding the design value	Add equipment
	airflow	Insufficient airflow leads to insufficient cooling capacity	Appropriately increase airflow
Leakage in the unit	Coil	High air speed over the cooling coil causes water splashing	Reduce the airflow to decrease the wind speed
		Poor insulation of the water collection pipe leading to condensation	Re-insulate
		Leakage in the water collection pipe, and rupture of copper tubes in the heat exchanger	Repair welding of the water collection pipe and copper tubes
	Drip tray	Poor drainage in the water tray, with excessive water accumulation	Rectify the water seal, increase the drop height to ensure smooth drainage
		Insufficient insulation at the bottom of the water tray leading to condensation	Add an insulation layer at the bottom
Condensation on the unit surface	Housing	Leakage in the water tray	Weld repair of the water tray
		Poor insulation, with cold bridge	Improve insulation
		Leakage in the casing	Ensure proper sealing
		Insulation damage or aging	Remove the existing insulation and redo it
	Operating environment	Insulation thickness is insufficient	Redo the insulation
High discharge noise	Fan	The humidity in the operating environment is too high	
	System	fan noise is high, see above	
		High velocity within the duct causes secondary noise	Appropriately reduce the supply air volume
Excessive motor current or high temperature rise	Excessive Current	High velocity at the air outlet	Enlarge the air supply outlet
		Excessive airflow	Appropriately reduce the fan speed
		Damaged motor cooling fan	Repair the cooling fan
		Input voltage is too low	Operate after the voltage is normalized
		Improper bearing installation or damage	Inspect the bearings

Common Fault Diagram and Troubleshooting Methods

Fault Symptoms	Potential Sites	Cause of Failure	Diagnosis and Troubleshooting Methods
Unit noise and vibration	Fan	Wind turbine bearing problems	Inspect the bearings
		The fan shaft is not parallel to the motor shaft	Adjust the motor angle
		The fan volute rubs against the impeller and makes a strange noise	
		Deformation of fan volute and impeller	
		The dynamic and static balance of the impeller has not been properly done	
		Foreign objects in the fan	
	Motor	Wind turbine quality issues	Replace the fan
		Motor bearing issue	
		Motor quality issue	Replace the motor
	Shock absorber	Improper selection of shock absorber	
		Improper installation of shock absorber	
Excessive temperature rise of fan bearings	Housing	Inadequate noise reduction	Reinforce or replace the enclosure wall panels
	Resonance	The vibration frequency of the fan matches that of the motor	Adjust the speed
Severe belt wear	Bearing	Bearings without lubricant	Lubricate with grease
		Severe bearing wear	Replace the bearing
	Pulley	The surface of the belt's upper groove is too rough	Polish the grooved surface of the belt
		The fan shaft is not parallel to the motor shaft, and the two pulley end faces are not in the same plane	First, adjust the two shafts to be parallel, then align the pulley end faces in the same plane
	Belt	Poor quality belt	Replace the belt



For specific operations regarding the installation, use, and maintenance of the unit, please refer to the **Installation and Operation Manual** and **Electrical Operation Instructions** provided with the unit.

Note: Since OBAIR products are subject to continuous improvement and innovation, any changes to the product models, specifications, and parameters shown in this material will not be notified separately. Your understanding is appreciated.