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Longwell Technology Ventilation Equipment

Cabinet Air Handling Unit-Suspended Ceiling

Ningbo Longwell Electric Technology Co., Ltd

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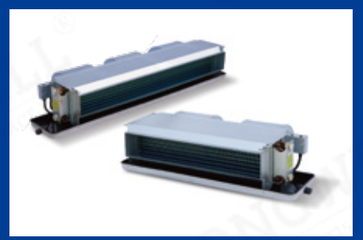

Fan Coil Unit

Combined Air Conditioner

Air Source Heat Pump Unit

Screw-Type Air-Cooled Chiller Heat Pump Unit

Precision Constant Temperature and Humidity Unit

Rooftop Air Conditioning Unit

Screw-Type Water-Cooled Chiller Unit

Water and Ground Source Heat Pump Unit

Cabinet Air Handling Unit--Suspended Ceiling

Air Handling Unit-Horizontal

Remote Jet Unit

Air Handling Unit-Vertical

CATALOGUE

About Longwell

Ningbo Longwell Electric Technology Co., Ltd
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Born for High-Quality Breathing
LONGWELL Fans Power Your Equipment

Longwell Technology - Ventilation Equipment Division - primarily engages in the production and sales of central air conditioning equipment. Our products are sold all over the country and exported to more than 50 countries and regions worldwide. LONGWELL central air conditioning series includes a comprehensive range of products, such as air source heat pump units, Air-cooled chillers (heat pump) units, water (ground) source heat pump units, sewage source heat pump units, seawater source heat pump units, water-cooled chiller units, constant temperature and humidity units, heat pump drying units, combined air conditioners, roof air conditioning units, air handling units, remote jet units, fan coil units, etc. These products are widely used in factories, schools, hotels, hospitals, office buildings, shopping malls, residential communities, and other buildings.

We have passed the ISO9001 Quality Management System Certification, ISO45001 Occupational Health and Safety Management System Certification, ISO14001 Environmental Management System Certification, etc. Our company is committed to survival by product quality and development by technological innovation, continually researching and producing green, clean, environmentally friendly and energy-saving innovative products. With full work enthusiasm, swift and decisive actions, higher standards, continuous improvement, and innovation, we will strive to create more value for our customers.

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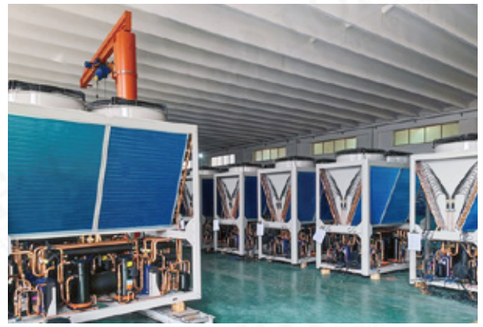
Factory Display

LONGWELL central air conditioning series includes a comprehensive range of products, such as air source heat pump units, Air-cooled chillers (heat pump) units, water (ground) source heat pump units, sewage source heat pump units, seawater source heat pump units, water-cooled chiller units, constant temperature and humidity units, heat pump drying units, combined air conditioners, roof air conditioning units, air handling units, remote jet units, fan coil units, etc. These products are widely used in factories, schools, hotels, hospitals, office buildings, shopping malls, residential communities, and other buildings.



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Certificate Display

We have passed the ISO9001 Quality Management System Certification, ISO45001 Occupational Health and Safety Management System Certification, ISO14001 Environmental Management System Certification, etc.


Patent


Patent


ISO


ISO


CRAA


CRAA


CRAA


CRAA


Patent


Patent


Patent


Patent

Type Code

LW HFD - 030 B S R F E

- LW-Longwell
- HFD-Cabinet air handling unit-suspended ceiling series
- Air volume ×100m³/h
- **Structural form**
  B-Direct drive D-Belt drive S-Jet flow
- S-Standard cooling H-High cold
- **Left-Right type**
  R-Right type L-Left type
- R-Return air F-New air
- E-Serial number

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Ceiling Mounted Air Handling Unit

Left and right judgment of air handling unit

- Facing the air outlet of the unit, if the heat exchanger water pipes are on the left side, it's considered left-oriented; otherwise, it's right-oriented.

Complete Thermal Break

The unit housing is constructed with a double-layer sandwich structure. The standard configuration features a colored steel sheet on the outer layer and a galvanized steel sheet on the inner layer. The panels are designed with a thermal break to effectively prevent the transfer of cold. The interior of the panels is filled with polyurethane foam, and the joints between panels are sealed with double-layer sealing materials. The excellent elasticity of the sealing materials and the double-layer sealing design ensure that the housing maintains a good seal under both positive and negative pressure conditions.

High-efficiency Heat Exchanger

The evaporator coil utilizes seamless copper tubes and aluminum fins, which are mechanically expanded to tightly bond the copper tubes and fins, ensuring maximum heat transfer efficiency. A computerized selection and calculation program for coils optimizes parameters such as the number of rows, fin spacing, circuit count, etc., under specific operating conditions, to ensure that the coil meets the practical usage requirements.

Low-noise Fan

According to the actual requirements, either a direct-coupled external rotor centrifugal fan or a high-efficiency belt-driven low-noise centrifugal fan can be selected. The fan bearings are chosen from reputable brands and feature self-aligning and self-locking functions, significantly extending the bearing's service life. The motor used is a three-phase asynchronous motor, placed inside the fan section and mounted on vibration-reducing brackets together with the fan using specialized anti-vibration pads.

Easy-clean Filter

Using primary efficiency nylon mesh filters, with low resistance and easy cleaning.

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Remote Jet Unit

Product Features

The remote jet air unit offers both summer cooling and winter heating functions, allowing for direct long-distance air supply without ductwork. It features space-saving design, reduced floor-to-ceiling height, significantly lower initial investment, and low operational costs. Additionally, the air supply angle of the unit can be freely adjusted within a range of 60°, ensuring that cold or hot air is delivered to the designated area.

Applicable Range

- Large spaces where there is a desire to reduce initial investment and save air conditioning operating costs.
- Indoor areas where it is not feasible to install ductwork or where installation is difficult.
- High-ceiling spaces where it is challenging to deliver warm air downward, such as large supermarkets, factory workshops, sports stadiums, swimming pools, airport terminals, exhibition halls, lobbies, and atriums.

Box

It is composed of high-sealing sandwich panels, which are rust-resistant, corrosion-resistant, aesthetically pleasing, and durable. The casing has a low air leakage rate.

Fan

We utilize low-noise, high-efficiency centrifugal fans that undergo precise dynamic balancing to ensure smooth operation of the unit, resulting in low noise and high total pressure characteristics.

Surface Cooler

The main body is constructed using high-quality seamless copper tubes and high-purity aluminum foil. Through advanced mechanical expansion processes, they are tightly integrated and then subjected to pneumatic pressure sealing leak tests, ensuring the superior performance of the product.

One-piece Condensate Tray

The carefully designed integral condensate tray and extra-thick inner lining insulation material ensure that the unit exhibits no condensation or dripping even under harsh environmental conditions. Additionally, the condensate drain pipes are sized based on non-full-flow calculations, with a discharge capacity exceeding five times that of normal unit operation. Timely discharge of condensate reduces the "dwell time" in the condensate tray, thereby reducing corrosion and preventing bacterial growth, thus ensuring indoor air quality.

Air Outlet

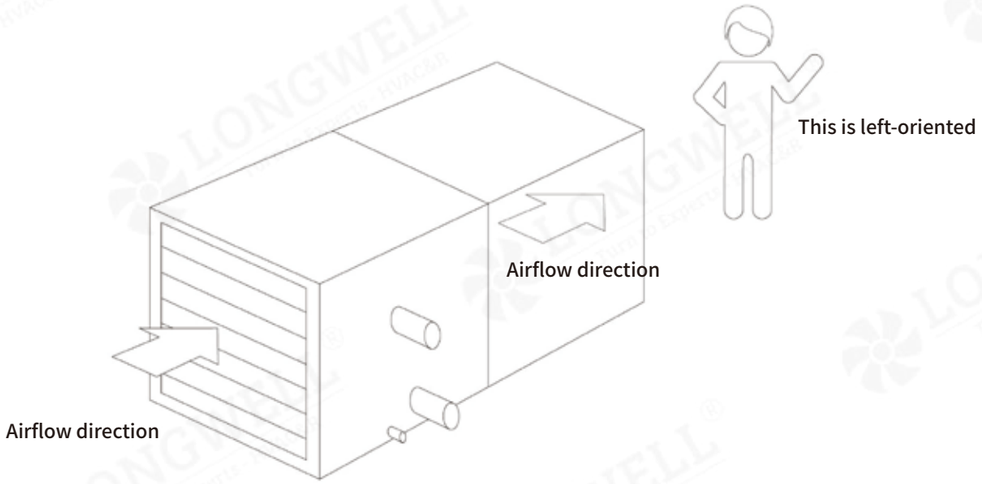
We utilize spherical jet nozzles with superior jet performance as air outlets, enabling long-distance air supply without ductwork. This feature is particularly suitable for large spaces, especially for delivering warm air to large-area workshops. The air outlet's airflow angle can be adjusted within a range of 60°, ensuring that cold or hot air reaches the desired locations.

Air Filter

Specially designed dedicated panel filters can be easily removed from the unit's left, right, upper, or lower sides as per user requirements. This feature is particularly suitable for maintenance and cleaning in compact spaces. Filter materials can include nylon pleated mesh or non-woven fabric.

Left and Right Judgment

Facing the direction of the air flow, the inlet and outlet water pipe is left on the left side, and the opposite is right.



Return Air Condition(direct drive/belt drive)

Model LWHFD-		020	025	030	040	050	060	070	080	100	120	150
Air Volume(m^3/h)		2000	2500	3000	4000	5000	6000	7000	8000	10000	12000	15000
Standard Cooling	Rated Cooling Capacity(KW)	11.4	14.2	17.3	23.2	27.9	33.9	39.8	46.4	59.5	69.2	85.1
	Rated Heating Capacity(KW)	21.0	25.7	31.2	42.4	51.2	61.2	71.9	83.6	107.3	131.5	161.4
	Water Flow Rate(l/s)	0.54	0.68	0.83	1.11	1.33	1.62	1.90	2.22	2.84	3.31	4.07
	Water Resistance(KPa)	61.8	59.4	53.2	76.5	68.4	67.4	78.5	77.2	77.1	78.1	89.8
	Chilled Water Pipe Diameter(DN)	25	25	25	25	32	32	32	32	40	50	50
High Cold	Rated Cooling Capacity(KW)	14.6	18.1	22.0	29.6	35.8	43.2	48.8	57.3	74.6	85.4	107.2
	Rated Heating Capacity(KW)	25.0	30.6	38.3	50.3	62.7	73.1	84.3	98.8	133.6	159.7	188.3
	Water Flow Rate(l/s)	0.70	0.86	1.05	1.41	1.71	2.06	2.33	2.74	3.56	4.08	5.12
	Water Resistance(KPa)	66.4	68.1	70.1	75.3	75.8	77.7	77.8	78.1	55.8	76.9	77.5
	Chilled Water Pipe Diameter(DN)	25	25	25	32	32	32	40	40	50	50	65

Condensate Pipe Diameter(DN)		25	25	25	25	25	25	25	25	25	25	25
Power Supply		380V/3N/50Hz										
Drive Type		Direct drive				Belt drive						

Remarks:
1. Cooling: Inlet air dry bulb temperature 27°C, wet bulb temperature 19.5°C, inlet/outlet water temperature 7°C/12°C.
2. Heating: Inlet air dry bulb temperature 15°C, hot water inlet/outlet water temperature 60°C/50°C.
3. Specifications are subject to change without prior notice due to product improvements.
4. The water flow rate in the table is for cooling water flow rate. The heating water flow rate is smaller than the cooling water flow rate. Pump selection should be based on the cooling water flow rate.

New Air Condition(direct drive/belt drive)

Model LWHFD-		020	025	030	040	050	060	070	080	100	120	150
Air Volume(m^3/h)		2000	2500	3000	4000	5000	6000	7000	8000	10000	12000	15000
Standard Cooling	Rated Cooling Capacity(KW)	26.6	30.6	39.2	49.5	64.7	72.4	84.2	98.7	132.8	148.8	183.4
	Rated Heating Capacity(KW)	27.7	31.5	40.5	51.2	63.4	74.6	86.8	101.5	132.1	154.6	199.8
	Water Flow Rate(l/s)	1.27	1.46	1.87	2.37	3.09	3.46	4.02	4.72	6.34	7.11	8.76
	Water Resistance(KPa)	77.3	54.6	72.8	78.2	75.6	38.5	61.0	78.9	50.6	69.1	69.1
	Chilled Water Pipe Diameter(DN)	25	32	32	40	40	50	50	50	65	65	65
High Cold	Rated Cooling Capacity(KW)	31.3	40.3	46.1	63.4	75.5	92.7	105.3	120.9	159.8	184.8	241.2
	Rated Heating Capacity(KW)	30.8	38.9	45.1	61.7	70.9	91.2	104.0	119.2	156.5	179.9	235.8
	Water Flow Rate(l/s)	1.50	1.93	2.20	3.03	3.61	4.43	5.03	5.78	7.63	8.83	11.52
	Water Resistance(KPa)	57.9	69.6	71.3	78.7	73.4	72.5	79.5	77.1	60.2	73.9	82.1
	Chilled Water Pipe Diameter(DN)	32	32	32	40	50	50	50	50	65	65	65
Condensate Pipe Diameter(DN)		25	25	25	25	25	25	25	25	25	25	25
Power Supply		380V/3N/50Hz										
Drive Type		Direct drive				Belt drive						

Remarks:
1. Cooling: Inlet air dry bulb temperature 35°C, wet bulb temperature 28°C, inlet/outlet water temperature 7°C/12°C.
2. Heating: Inlet air dry bulb temperature 7°C, hot water inlet/outlet water temperature 60°C/50°C.
3. Specifications are subject to change without prior notice due to product improvements.
4. The water flow rate in the table is for cooling water flow rate. The heating water flow rate is smaller than the cooling water flow rate. Pump selection should be based on the cooling water flow rate.

Air Pressure and Power Comparison Chart

Model	Air Volume(m^3/h)	Cooling Coil	External Static Pressure							
			120	160	200	240	280	320	360	400
LWHFD-020	2000	S	0.37	0.37	0.37	0.45				
LWHFD-020	2000	H	0.37	0.45	0.45	0.55				
LWHFD-025	2500	S	0.45	0.45	0.55	0.55				
LWHFD-025	2500	H	0.45	0.55	0.55	0.55				
LWHFD-030	3000	S	0.75	0.75	0.75	0.75				
LWHFD-030	3000	H	0.75	0.75	0.75	0.75				
LWHFD-040	4000	S		0.75	0.75	0.75	1.1	1.1	1.1	1.1
LWHFD-040	4000	H		0.75	1.1	1.1	1.1	1.1	1.1	1.5
LWHFD-050	5000	S		1.1	1.1	1.1	1.5	1.5	1.5	1.5
LWHFD-050	5000	H		1.1	1.1	1.5	1.5	1.5	1.5	1.5
LWHFD-060	6000	S		1.5	1.5	2.2	2.2	2.2	2.2	
LWHFD-060	6000	H		1.5	2.2	2.2	2.2	2.2	2.2	
LWHFD-070	7000	S		2.2	2.2	2.2	2.2	3	3	
LWHFD-070	7000	H		2.2	2.2	2.2	3	3	3	
LWHFD-080	8000	S		2.2	2.2	2.2	3	3	3	
LWHFD-080	8000	H		2.2	2.2	3	3	3	3	
LWHFD-100	10000	S		2.2	3	3	3	3	3	
LWHFD-100	10000	H		3	3	3	3	3	4	
LWHFD-120	12000	S		3	3	3	3	4	4	
LWHFD-120	12000	H		3	3	3	4	4	4	
LWHFD-150	15000	S				4	4	4	4	
LWHFD-150	15000	H				4	4	5.5	5.5	

Return Air Condition(jet type)

Model	LWHFD-	020S	030S	040S	050S	060S	070S	080S	100S	120S
Air Volume(m^3/h)		2000	3000	4000	5000	6000	7000	8000	10000	12000
Standard Cooling	Rated Cooling Capacity(KW)	11.4	17.3	23.2	27.9	33.9	39.8	46.4	59.5	69.2
	Rated Heating Capacity(KW)	21.0	31.2	42.4	51.2	61.2	71.9	83.6	107.3	131.5
	Water Flow Rate(l/s)	0.54	0.83	1.11	1.33	1.62	1.90	2.22	2.84	3.31
	Water Resistance(KPa)	61.8	53.2	76.5	68.4	67.4	78.5	77.2	77.1	78.1
	Chilled Water Pipe Diameter(DN)	25	25	25	32	32	32	32	40	50
High Cold	Rated Cooling Capacity(KW)	14.6	22.0	29.6	35.8	43.2	48.8	57.3	74.6	85.4
	Rated Heating Capacity(KW)	25.0	38.3	50.3	62.7	73.1	84.3	98.8	133.6	159.7
	Water Flow Rate(l/s)	0.70	1.05	1.41	1.71	2.06	2.33	2.74	3.56	4.08
	Water Resistance(KPa)	66.4	70.1	75.3	75.8	77.7	77.8	78.1	55.8	76.9
	Chilled Water Pipe Diameter(DN)	25	25	32	32	32	40	40	50	50
Condensate Pipe Diameter(DN)		25	25	25	25	25	25	25	25	25
Power Supply		380V/3N/50Hz								

Remarks:
1. Cooling: Inlet air dry bulb temperature 27°C, wet bulb temperature 19°C, inlet/outlet water temperature 7°C/12°C.
2. Heating: Inlet air dry bulb temperature 15°C, hot water inlet/outlet water temperature 60°C/50°C.
3. Specifications are subject to change without prior notice due to product improvements.
4. The water flow rate in the table is for cooling water flow rate. The heating water flow rate is smaller than the cooling water flow rate. Pump selection should be based on the cooling water flow rate.

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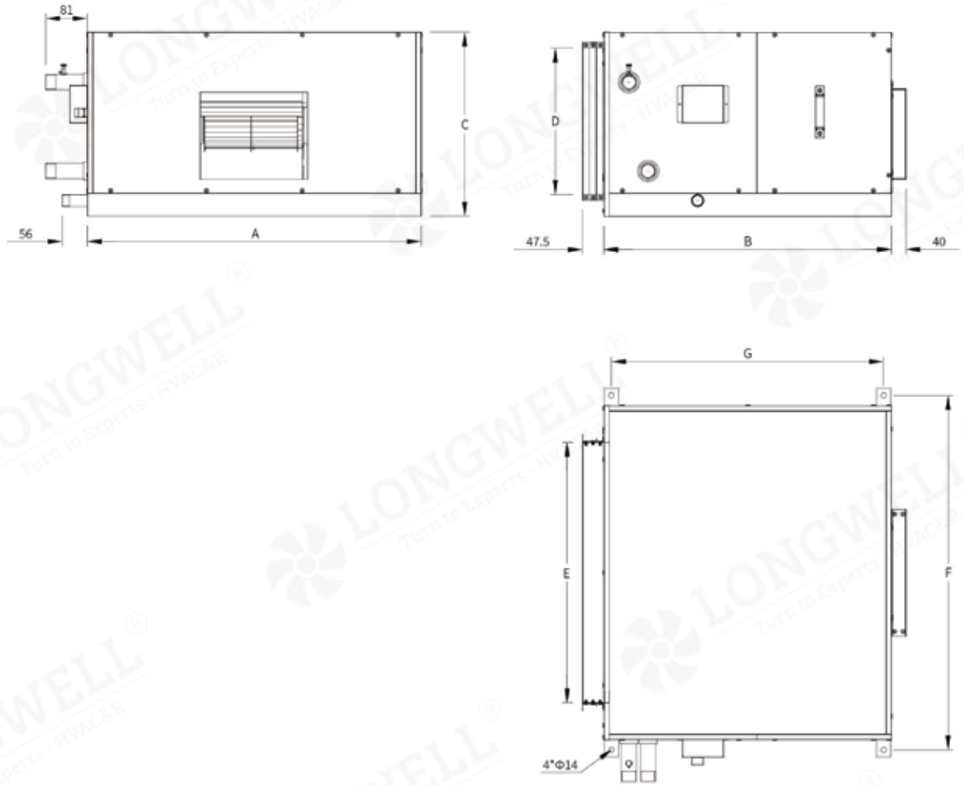
New Air Condition(jet type)

Model	LWHFD-	020S	030S	040S	050S	060S	070S	080S	100S	120S
Air Volume(m^3/h)		2000	3000	4000	5000	6000	7000	8000	10000	12000
Standard Cooling	Rated Cooling Capacity(KW)	26.6	39.2	49.5	64.7	72.4	84.2	98.7	132.8	148.8
	Rated Heating Capacity(KW)	27.7	40.5	51.2	63.4	74.6	86.8	101.5	132.1	154.6
	Water Flow Rate(l/s)	1.27	1.87	2.37	3.09	3.46	4.02	4.72	6.34	7.11
	Water Resistance(KPa)	77.3	72.8	78.2	75.6	38.5	61.0	78.9	50.6	69.1
	Chilled Water Pipe Diameter(DN)	25	32	40	40	50	50	50	65	65
High Cold	Rated Cooling Capacity(KW)	31.3	46.1	63.4	75.5	92.7	105.3	120.9	159.8	184.8
	Rated Heating Capacity(KW)	30.8	45.1	61.7	70.9	91.2	104.0	119.2	156.5	179.9
	Water Flow Rate(l/s)	1.50	2.20	3.03	3.61	4.43	5.03	5.78	7.63	8.83
	Water Resistance(KPa)	57.9	71.3	78.7	73.4	72.5	79.5	77.1	60.2	73.9
	Chilled Water Pipe Diameter(DN)	32	32	40	50	50	50	50	65	65
Condensate Pipe Diameter(DN)		25	25	25	25	25	25	25	25	25
Power Supply		380V/3N/50Hz								

Remarks:
1. Cooling: Inlet air dry bulb temperature 27°C, wet bulb temperature 19.5°C, inlet/outlet water temperature 7°C/12°C.
2. Heating: Inlet air dry bulb temperature 15°C, hot water inlet/outlet water temperature 60°C/50°C.
3. Specifications are subject to change without prior notice due to product improvements.
4. The water flow rate in the table is for cooling water flow rate. The heating water flow rate is smaller than the cooling water flow rate. Pump selection should be based on the cooling water flow rate.

Overall Dimensions(LWHFD-020~LWHFD-060)



Model	Air Volume(m^3/h)	A	B	C	D	E	F	G
LWHFD-020	2000	730	750	535	428.5	680	780	685
LWHFD-025	2500	860	750	535	428.5	810	910	685
LWHFD-030	3000	1000	750	535	428.5	950	1050	685
LWHFD-040	4000	1140	800	585	478.5	1090	1190	735
LWHFD-050	5000	1385	800	585	478.5	1335	1435	735
LWHFD-060	6000	1615	800	585	478.5	1565	1665	735

Remarks:
1. Dimensions are in millimeters.
2. This unit is left-oriented. The right-oriented version is the mirror image of this diagram.
3. The above dimensions do not include the on-board control cabinet.

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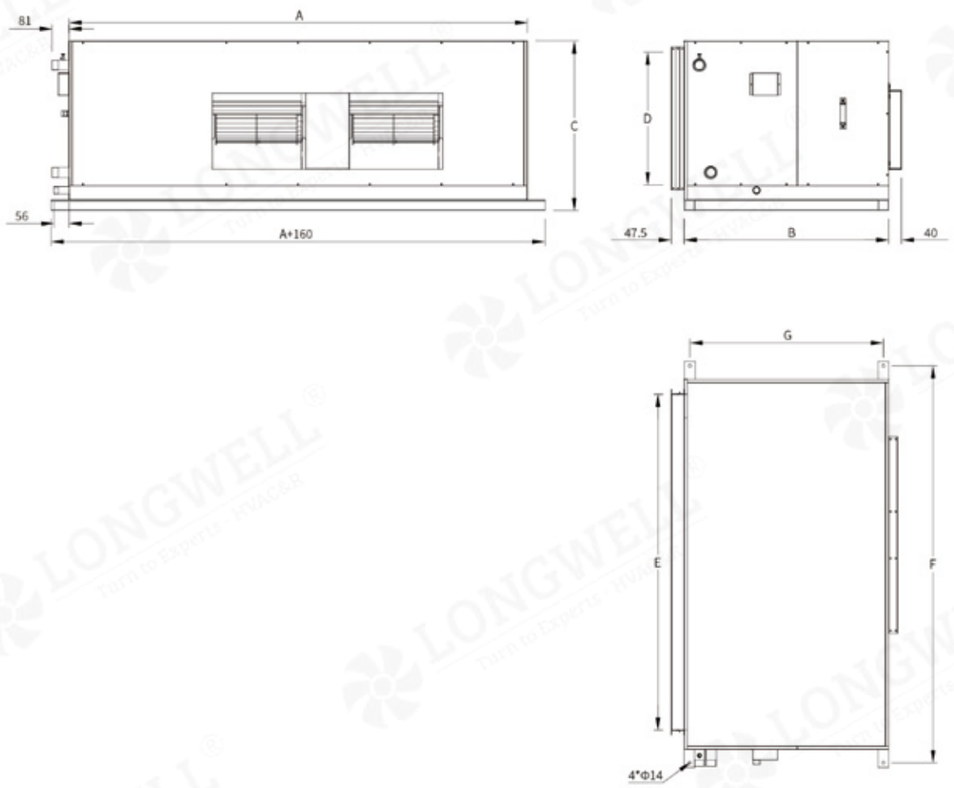
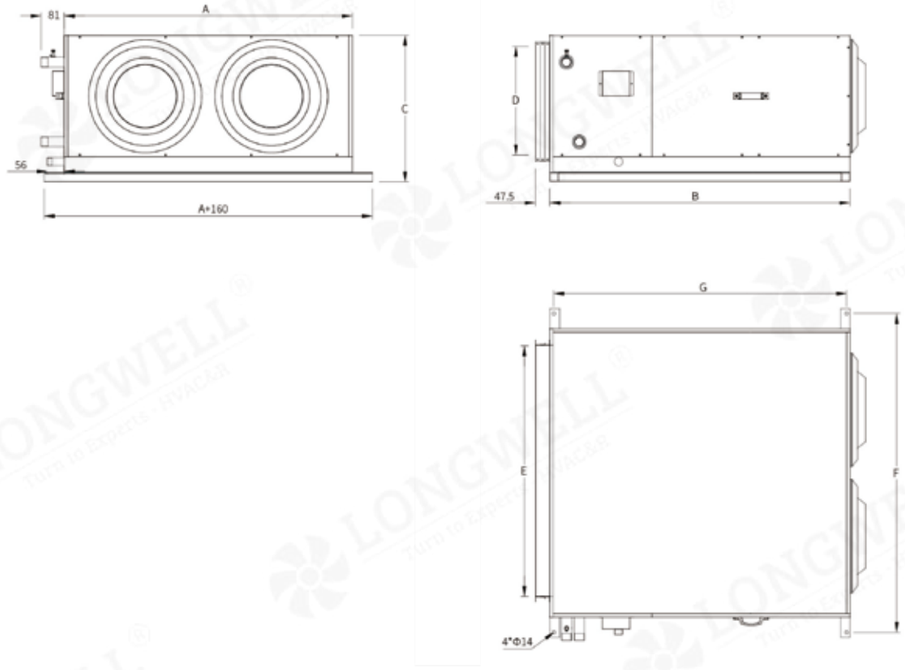
Overall Dimensions(LWHFD-070~LWHFD-150)



Model	Air Volume(m^3/h)	A	B	C	D	E	F	G
LWHFD-070	7000	1840	800	645	478.5	1790	1920	760
LWHFD-080	8000	2070	800	645	478.5	2020	2150	760
LWHFD-100	10000	1970	1000	795	628.5	1920	2050	960
LWHFD-120	12000	2320	900	795	628.5	2270	2400	860
LWHFD-150	15000	2470	1000	895	728.5	2420	2550	960

Remarks:
1. Dimensions are in millimeters.
2. This unit is left-oriented. The right-oriented version is the mirror image of this diagram.
3. The above dimensions do not include the on-board control cabinet.

Remote Jet Unit Overall Dimensions



Model	Air Volume(m^3/h)	A	B	C	D	E	F	G
LWHFD-020S	2000	730	900	535	428.5	680	780	835
LWHFD-030S	3000	1000	900	535	428.5	950	1050	835
LWHFD-040S	4000	1140	950	585	478.5	1090	1190	885
LWHFD-050S	5000	1385	950	585	478.5	1335	1435	885
LWHFD-060S	6000	1615	950	585	478.5	1565	1665	885
LWHFD-070S	7000	1840	950	645	478.5	1790	1920	910
LWHFD-080S	8000	2070	950	645	478.5	2020	2150	910
LWHFD-100S	10000	1970	1150	795	628.5	1920	2050	1110
LWHFD-120S	12000	2320	1050	795	628.5	2270	2400	1010

Remarks:
1. Dimensions are in millimeters.
2. This unit is left-oriented. The right-oriented version is the mirror image of this diagram.
3. The above dimensions do not include the on-board control cabinet.

The Design and Selection of Remote Jet Unit

The thermal performance parameters calculation of the jet air handling unit with spherical nozzles as air outlets are similar to that of conventional ceiling-mounted units; the design and selection primarily involve airflow organization calculations. For a specific project, once the air supply distance, installation height of the air conditioner, air supply temperature, and air supply volume are roughly determined, it is necessary to choose a suitable jet air conditioning unit. The cold and hot air jets emitted from the unit's outlets must meet the following basic requirements:

1. Cold and hot air should be delivered to specified locations;
2. Cold jets should not fall midway, causing discomfort to occupants;
3. Hot air should reach the required air supply distance and location;
4. The temperature difference at the outlet should meet the design requirements.

The design and selection process should consider the mutual influence and combined effects of multiple unit outlets; the diffusion width of the jet is roughly 0.4 times the range. It is advisable for the unit layout density to be slightly less than the diffusion width. If the units are installed close to the ceiling, the influence of attachment should be considered. The attachment airflow range is typically 1.4 times that of regular airflow.

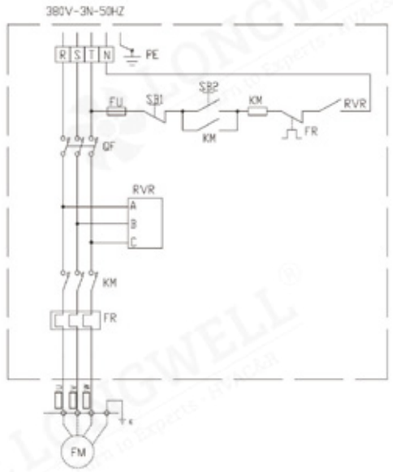
Jet Unit Range Selection Recommendation Table

Considering the performance of the air conditioning unit and spherical nozzles, the table below provides the recommended selection range for air conditioning units with horizontal air supply: Unit (m)

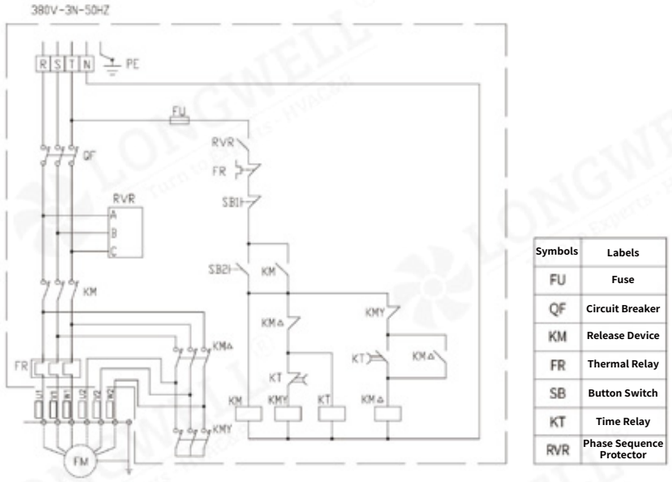
Model	LWHFD-	020S	030S	040S	050S	060S	070S	080S	100S	120S
Range		21	21	21	25	22	28	30	28	31
Distance		27	27	27	31	28	34	36	34	37

Remarks:
1. The maximum coverage width of the unit's jet is approximately 0.4 times the range. The arrangement of units should consider the diffusion angle of the airflow, and the spacing should not be too large.
2. Units can be arranged unilaterally or in relative air supply positions. However, insufficient range may occur in a project, in which case induced draft fans can be used to continue airflow transmission. Vertical spacing: 4-6 meters per unit, horizontal spacing: 6-10 meters per unit.
3. Range: The distance when the terminal air velocity is 0.5 m/s.
4. Distance: The distance when the terminal air velocity is 0 m/s.

Wiring Schematic Diagram



Direct Start



Star-Delta Starting

Symbols	Labels
FU	Fuse
QF	Circuit Breaker
KM	Release Device
FR	Thermal Relay
SB	Button Switch
KT	Time Relay
RVR	Phase Sequence Protector

Remarks:
1. Without the corresponding protective devices, it may cause the motor to malfunction or damage.
2. Dashed box indicates on-site wiring by the user.

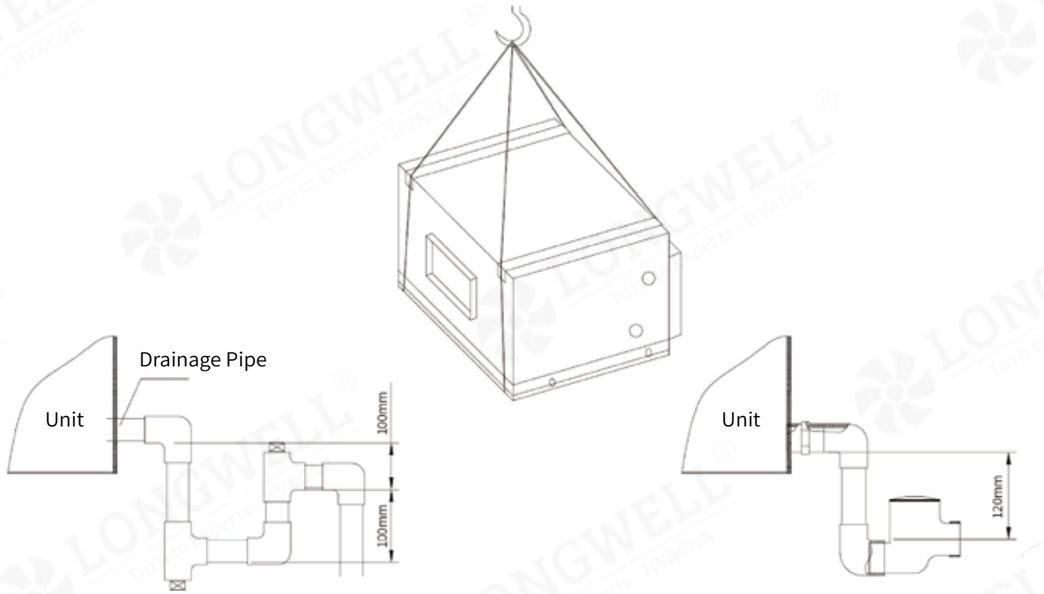
Unit Installation

1. Before installation, carefully inspect the unit for any damage. If any of the following conditions are present, please contact the vendor for repair or replacement: the unit is dented or severely deformed, there are scratches on the unit panel or casing that significantly affect its appearance, the fan or motor is loose.

2. For safety reasons, the ceiling-mounted units must be securely hoisted during installation. The units must be lifted as shown in the diagram below, or moved using a forklift. The lifting points should be sturdy and have sufficient strength to support the weight of the unit, ensuring that the unit is level.

3. Before wiring, check if the voltage, frequency, and phase alignment of the power supply match those of the unit. The voltage deviation of the power supply should not exceed ±10% of the rated voltage. Before starting the fan, manually rotate the fan blades inside the fan housing and carefully check for any metal friction noise. If any abnormalities are found, they should be addressed. After the power supply is connected, start the fan and check if the rotation direction of the blades is correct. If the direction is incorrect, simply interchange the phases of the power supply lines.

4. It is recommended to install static pressure boxes at the inlet and outlet of the unit, install air volume control valves on the ducts, and set up fire dampers according to fire safety requirements. If an electric air volume control valve is installed, the valve actuator should open before the fan starts and close after the fan stops.



Installation Diagram for U-shaped Water Seal Spherical Water Seal Installation Diagram

5. Before connecting the water pipes, ensure to clean them thoroughly. Follow the unit's markings for the direction of cold (hot) water inlet and outlet. The unit's water inlet pipe must be equipped with a valve and a filter device to regulate the flow rate. When performing maintenance, cut off the cold (hot) water source, and prevent impurities from entering the heat exchanger to avoid blockage. Insulate the inlet and outlet pipes with insulation sleeves.

6. When connecting the inlet and outlet pipes, use a pipe wrench to secure them, and avoid applying torsion to the pipes during operation. It is recommended to use sealing tape to prevent water leakage. The condensate generated in the unit must be connected with a certain water seal height and discharged to the sewer through a drainage pipe, as shown in the diagram.

7. The weight of the ducts, water pipes, and other connections must not be borne by the unit.

8. The unit must have reliable grounding, and the electrical wiring should be checked to ensure it meets electrical safety requirements.

9. The installation of the unit must be carried out by professional personnel familiar with the product and knowledgeable about local regulations. During installation, collisions, pressure, and scratches must be strictly avoided.

Installation and Usage Precautions

1. Air conditioning units should not operate in environments with corrosive gases such as acids, alkalis, or salt mist, as this can lead to damage to the unit's casing, piping, or electrical components.

2. Keep the area around the unit clean, dry, and well-ventilated. Regularly (every 1-2 months) clean the air-side heat exchanger to maintain optimal heat exchange efficiency and save energy.

3. The drainage pipe must be installed as required to ensure smooth drainage and proper insulation to prevent condensate formation. Before operating the unit, check the drainage pipe. If it is blocked, clear any foreign objects to ensure smooth drainage of condensate.

4. Regularly check the power supply and electrical wiring of the unit for secure connections and abnormal operation of electrical components. If any abnormalities are found, repair or replace them promptly, and periodically check the unit's grounding for reliability.

5. The minimum starting voltage of the unit must be maintained at 90% or higher of the rated voltage, and during operation, it should be within ±10% of the rated voltage. The voltage difference between phases should be within ±2%. Both high and low voltages have adverse effects on the unit. Ensure stable power supply, as unstable voltage during startup can cause excessive current and damage to the unit's motor.

6. Maintenance and repair operations on the unit should only be carried out when it is shut down and the power supply is disconnected.

7. After a unit malfunction, identify and eliminate the cause before restarting it. Do not forcibly restart the unit without resolving the fault.

8. Do not short-circuit the lines of the unit's protective devices, as this may cause unit malfunctions.

9. Protect the internal cables of the unit to prevent damage to the insulation layer. Keep the wires and cables away from heat sources, minimize movement, and avoid sharp bends or twists.

10. Installation and Use of Control Cabinet:
    1) The control cabinet contains AC high voltage. Exercise caution when operating.
    2) Control lines of the unit should be isolated from the power supply lines to prevent interference.
    3) Use a power supply that meets the specified requirements. Using an unsuitable power supply may damage the control cabinet.
    4) It is not allowed to randomly install additional wires or store long exposed wires inside the control cabinet. After maintenance of the control cabinet door, promptly reset it to prevent rainwater from entering.
    5) Always control the operation status of the air conditioning unit through the control cabinet. It is strictly forbidden to switch the unit on and off by unplugging or plugging the power plug. Do not use the emergency stop switch frequently to shut down the unit.

6) Do not use sharp objects to operate the controller display screen during use. Avoid applying excessive force to prevent damage to the controller display screen.
7) Do not use solvents or strong chemical agents to clean the surface of the controller display screen. Use a clean, soft cloth or cotton yarn to gently wipe it.
8) If there is a fault alarm or fault display on the control cabinet, do not attempt to repair it yourself. Please contact the company for assistance.

11. Air Filters: Regularly inspect the unit's filter mesh for dust accumulation (recommended twice a month). For users with differential pressure detection devices, when the final resistance reaches the specified value, the filter should be cleaned or replaced promptly. Recommended final resistance values are as follows: for G3 (primary efficiency) filters: 100-200 Pa; for G4 (primary efficiency) filters: 150-250 Pa.

12. Heat Exchanger: Ensure that the fins and copper tubes of the heat exchanger are free from scratches or dents. Keep the coils clean by using a nylon brush to wash the fins. Before brushing, clean with a vacuum cleaner. If compressed air is available, use a high-pressure air hose or nozzle to clean the coils. After cleaning, the outer surface of the coils should be dust-free, and the heat transfer efficiency of the inner surface should meet its original design capacity. Apart from cleaning the fins, after 2-3 years of use, the coils should be cleaned of scale buildup. If possible, use softened water for cleaning the unit coils with cold or hot water.

13. Drainage Pipe: Before starting the unit, check the drainage pipe. If it is blocked, clear any foreign objects to ensure smooth drainage of condensate.

A\fter one week of operation, readjust the tension of the belts. Subsequently, perform routine inspections every three months.

After some time of operation, the wire terminal connections may become loose. Check and tighten them three days after the initial startup.

Fan and Motor Bearings: Regularly inspect the bearings of the fan and motor. Check the motor shaft seal rings, replace them if necessary. Check for loose installation connections. Monitor bearing operation through abnormal noise listening, vibration detection, monitoring oil levels, or bearing vibration detection components. In case of abnormalities, immediately stop the operation, investigate the cause, and rectify it promptly. When installing or replacing bearings, heat or use special tools, avoid heavy impacts or prying.

Maintenance of Fan Bearings: Fans with oil injection nozzles require regular addition of matching lubricating grease. If a specific brand of grease is chosen by the user for lubrication, only use that brand of grease consistently. The effective lifespan of grease depends on its type, bearing speed, shaft diameter, and working environment. Normally, grease should be replaced after approximately 1500 hours of fan operation. For fans running continuously for 24 hours, replace the lubricating grease every 500-700 hours of operation. When adding grease, keep the shaft rotating. Stop adding grease when fresh grease appears at the dust cap and quickly rotate the impeller by hand to expel excess grease.