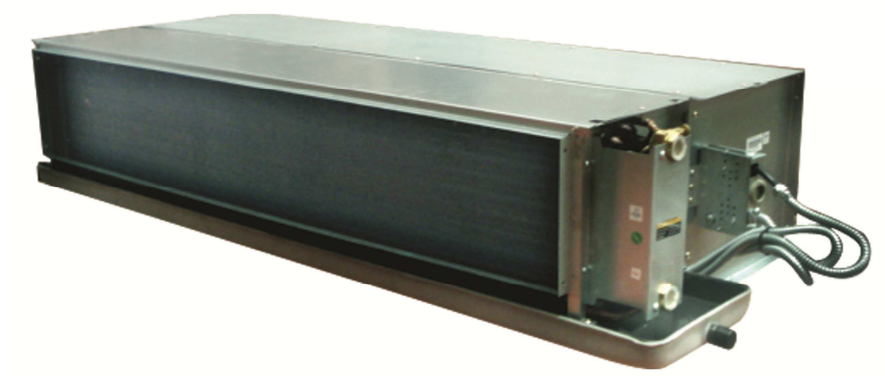




INSTALLATION, OPERATION & MAINTENANCE MANUAL

CEILING CONCEALED FAN COIL UNIT

FWW02-20DA



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SAFETY PRECAUTION

Please carefully read this manual before installing or using.

Caution: This symbol represents an operation which can cause lethal or major injuries if not correctly performed.

Note: This symbol represents an operation that can cause damage to the unit or bodily injury if not correctly performed.

Please appropriately keep this manual and transfer this manual when operator changes.



WARNING

- Installation and maintenance should be performed by qualified persons who are familiar with local code and regulation, and experienced with this type of appliance.
- All field wiring must be installed in accordance with the national wiring regulation.
- Ensure that the rated voltage of the unit corresponds to that of the name plate before commencing wiring work according to the wiring diagram.
- The unit must be GROUNDED to prevent possible hazard due to insulation failure.
- All electrical wiring must not touch the water piping or any moving parts of the fan motors.
- Confirm that the unit has been switched OFF before installing or servicing the unit.
- Risk of electric shock, can cause injury or death. Disconnect all remain electric power supplies before servicing.
- DO NOT pull out the power cord when the power is ON. This may cause serious electrical shocks which may result in the fire hazards.
- Keep the indoor and outdoor units, power cable and transmission wiring, at least 1m from TVs and radios, to prevent distorted pictures and static. {Depending on the type and source of the electrical waves, static may be heard even when more than 1m away}.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by Children without supervision.



CAUTION

Please take note of the following important points when installing.

- **Ensure that the drainage piping is connected properly.**
 - ❗ If the drainage piping is not connected properly, it may cause water leakage which will dampen the furniture.
- **Sharp edges and coil surfaces are potential locations which may cause injury hazards. Avoid from being in contact with these places.**
- Tightening torque should not be too high when connecting water pipes, in order to avoid brass deformation or water-leakage by torsion split.
- Water coil not used during winter season shall be drained, or anti-freezing solution shall be added to the water circuit to avoid freezing.
- **Before turning off the power supply set the remote controller's ON/OFF switch to the "OFF" position to prevent the nuisance tripping of the unit.** If this is not done, the unit's fans will start turning automatically when power resumes, posing a hazard to service personnel or the user.
- Ensure the color of wires of the outdoor unit and the terminal markings are same to the indoors respectively.
- **IMPORTANT: DO NOT INSTALL OR USE THE AIR CONDITIONER UNIT IN A LAUNDRY ROOM.**
- Children should be supervised to ensure that they do not play with the appliance.
- If the supply cord is damaged ,it must be replaced by the manufacturer ,its service agent or similarly qualified persons in order to avoid a hazard.

NOTICE

Disposal requirements

Your air conditioning product is marked with this symbol. This means that electrical and electronic products shall not be mixed with unsorted household waste.

Do not try to dismantle the system yourself: the dismantling of the air conditioning system, treatment of the refrigerant, of oil and of other parts must be done by a qualified installer in accordance with relevant local and national legislation. Air conditioners must be treated at a specialized treatment facility for re-use, recycling and recovery. By ensuring this product is disposed of correctly, you will help to prevent potential negative consequences for the environment and human health. Please contact the installer or local authority for more information.

Batteries must be removed from the remote controller and disposed of separately in accordance with relevant local and national legislation.



RECEIVING

All units leaving the factory have been inspected to ensure the shipment of high quality products and reasonable means are utilized to properly pack the fan coil units to protect them in transit.

Carefully inspect all shipments immediately upon delivery. When damage is visible, note this fact on the carrier's freight bill and request that the carrier send a representative to inspect the damage. This may be done by telephone or in person, but should always be confirmed in writing.

The shipment should be unpacked in the presence of the agent so that the damage or loss can be determined. The carrier's agent will make an inspection report and a copy will be given to the consignee for forwarding to the carrier with a formal claim.

LOCATION

Before installation, please check the following:

1. There must be enough space for unit installation and maintenance. Please refer to the outline and dimensions and fig.1 for the minimum distance between the unit and obstacle.
2. In case of installation in free blow, the unit must be installed at a minimum height of 2.5m to avoid contact with the appliance.
3. Please ensure enough space for piping connection and electrical wiring.
4. Please make sure that the hanging rods can support weight of the unit.

INSTALLATION

1. The unit is designed for concealed ceiling installation.
2. There are holes on the top of the unit for hanging. Please refer to Fig.1. Fig.2 and Fig.3.
3. Make sure that the top of the unit is level.

INSULATION

1. The insulation design and materials should be complying with local and national codes and regulations.
2. Chilled water pipes and all parts on the pipes should be insulated.
3. It is also necessary to insulate the air duct.

Fig. 1

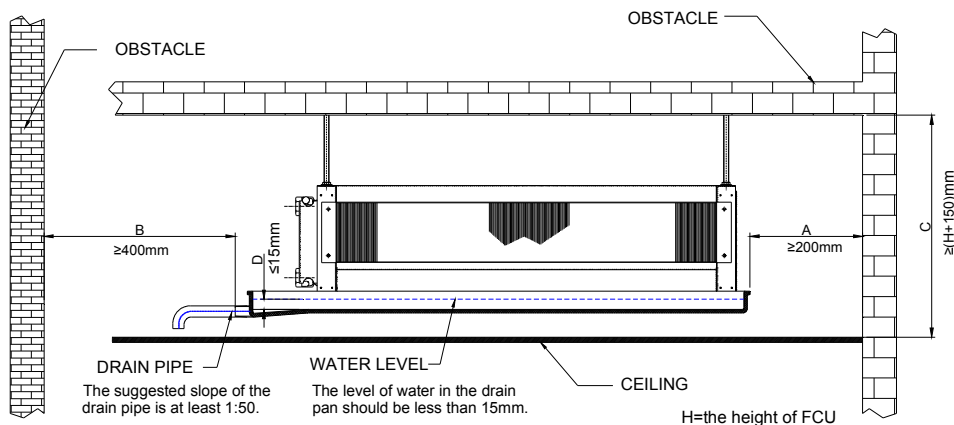


Fig. 2 WITH AND WITHOUT PLENUM FORM:

NOTE:

Dimension M and N was determined by air duct design, air duct should be fire-proof, refer to concerned country national and local regulations. Circulatory air pressure drop should be approximately equal to the External Static Pressure.

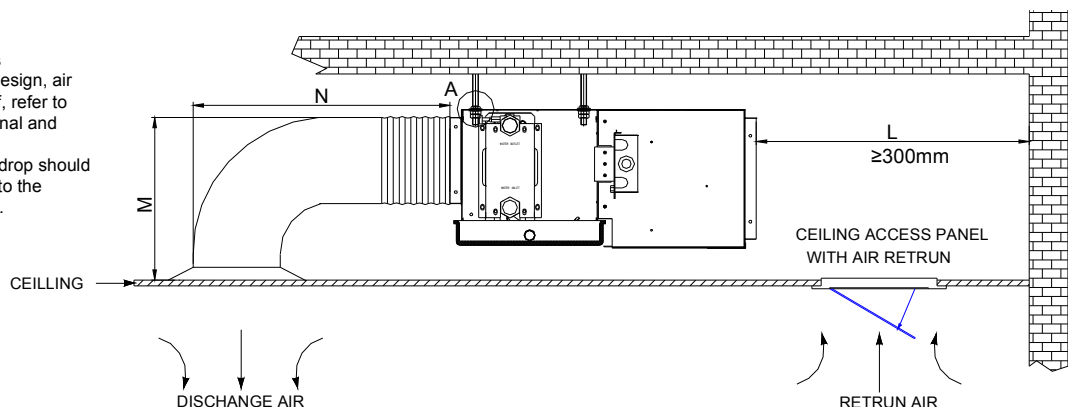
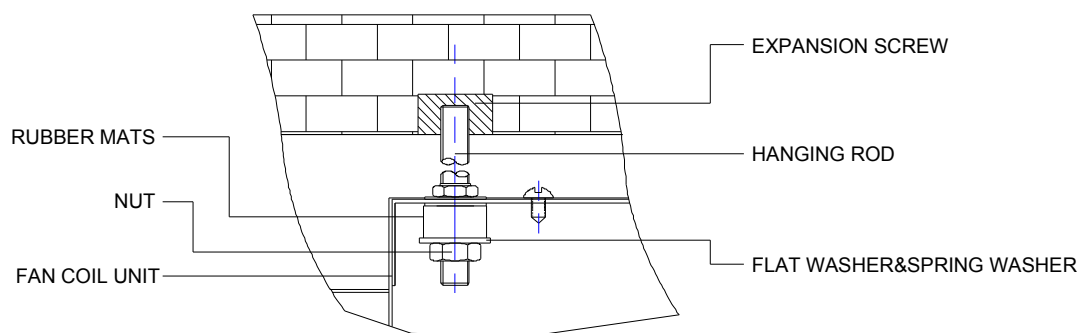


Fig.3 DETAIL A:



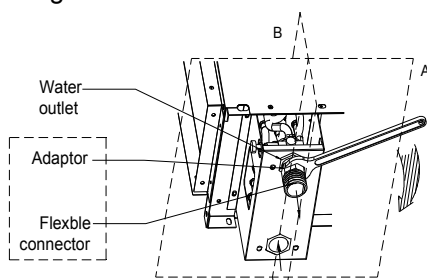
Detail A

AIR DUCT CONNECTION

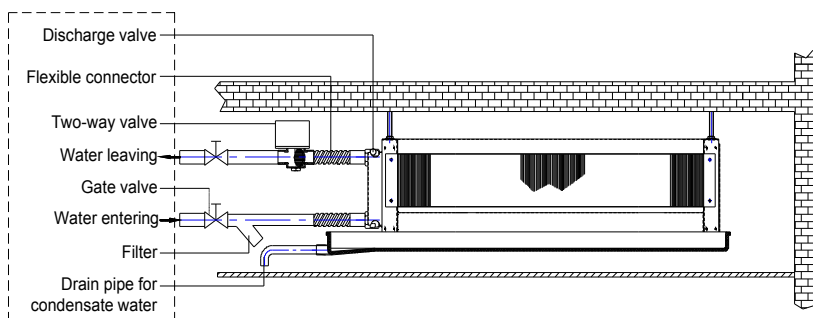
1. Circulatory air pressure drop should be within External Static Pressure.
2. Galvanized steel air ducts are suitable.
3. Make sure there is no leak of air.
4. Air duct should be fire-proof, refer to concerned country national and local regulations.

PIPE CONNECTION

1. Using suitable fittings as water pipe connections with reference to the outline and dimensions.
2. The water inlet is on the bottom while outlet on top.
3. The connection must be concealed with rubberized fabric to avoid leakage.
4. Drain pipe can be PVC or steel.
5. Water filter should be installed in the chiller water pump inlet and evaporator inlet pipes to prevent from block.
6. Use flexible connector tubes to connect the water entering and leaving pipes of the unit. Seal the joint with tape after connection. Keep the wrench near the water entering and leaving pipe during pipeline connection. Fasten the joints slowly at a constant speed. The torque is 110 N•m (11.2 kgf•m) at most. When tools with long arm of force are used, properly set the torque. An excessive torque can deform or even damage the copper pipe and cause leakage. The pipeline connection is shown in the following figure.



Note: Plane A (where the torque exists) must be perpendicular to Plane B (along which the directions of the water inlet and outlet follow)



Remarks: Customers must prepare devices marked in the dashed box

7. The suggested slope of the drain pipe is at least 1:50.
8. The water system must be preliminary softening treatment, aimed to protecting plate exchanger from scaling. In addition, the unsoften water may be scaled on the pipeline, leading to increasing the water resistance, and the water flow and water pump will be impacted.

Requirements of water quality are listed in the following table:

Item			Base Value	Tendency	
				Corrosion	Scale Formation
Standard item	pH value (25°C)		6.5 ~ 8.0	○	○
	Conductivity (25°C)	μS/cm	< 800	○	○
	Cl ⁻	mg(Cl ⁻)/L	< 200	○	
	SO ²⁻	mg(SO ²⁻)/L	< 200	○	
	Acid consumption (pH=4.8)	mg(CaCO ₃)/L	< 100		○
	Full hardness	mg(CaCO ₃)/L	< 200		○
Reference item	Fe	mg(Fe)/L	< 1.0	○	○
	S ²⁻	mg(S ²⁻)/L	0	○	
	NH ⁺	mg(NH ⁺)/L	< 1.0	○	
	SiO ₂	mg(SiO ₂)/L	< 50		○

Note: ○ indicates relevant factors that are inclined to corrosion or scale formation.

WIRING

1. Wiring connection must be done according to the wiring diagram on the unit.
2. A breaker device must be installed at power supply incoming line, it should have at least 3mm contact separation.
3. The unit must be **GROUND** well.
4. An appropriate strain relief device must be used to attach the power wires to the terminal box.
5. A 5/8" hole is designed on the terminal box for field installation of the strain relief device.
6. Field wiring must be complied with the national security regulations.
7. A main switch or other means for disconnection, having a contact separation in all poles, must be incorporated in the fixed wiring in accordance with the relevant local and national legislation.
8. Unit cannot be parallel connected for electric wiring, or it may cause motor burning.
9. When unit fan motor stops running and continuous chilled water supply for long may cause unit condensation. Please install electric valve and thermostat to ensure properly working.
10. Under the rated air flow, the total resistance of all external duct and other accessories should be 40-100Pa.

OPERATING LIMITS

OPERATING LIMITS	FWW-DA
Water Circuit Minimum water-side pressure Maximum water-side pressure Minimum entering water temperature Maximum entering water temperature Water flow rate Recommend operation range Maximum ESP Minimum ESP	0.01 MPa 1.6 MPa 5°C(cooling) 25°C(cooling) 0.1~2.1m ³ /h 16~36°C(cooling) 100Pa 40Pa
Power supply Nominal single-phase voltage Operating voltage limits Operating frequency limits Power cord type Wire size	220-240V~ / 50 Hz ± 10% Volt ± 1 Hz H05VV-F AWG16 (or 1.5mm ²)

An all-pole disconnection device which has at least 3mm clearances in all poles ,and have a leakage current that may exceed 10mA,the residual current device (RCD) having a rated residual operating current not exceeding 30mA,and disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

For safety reasons, before carrying out any maintenance or cleaning operation, turn off the unit and cut the voltage by turning the line switch to OFF.

Maintenance

The maintenance operations for the FWW air conditioner and hot-air heating units are limited to the periodic cleaning of the air filter and the heat exchanger, and the checking of the working efficiency of the condensate discharge.

Only skilled personnel may perform the maintenance.

Pay utmost attention during the maintenance operations: accidentally coming into contact with some of the metallic parts might cause injuries, therefore use safety work gloves.

Every time the units are started after a long idle period, make sure that air is NOT present in the heat exchanger.

The motor is maintenance-free since it is equipped with self lubricating bearings.

Cleaning the air filter

Cut voltage to the unit by turning the line switch to OFF.

For cleaning the air filter proceed as follows:

Access the equipment through the inspection panel and remove the air filter by unscrewing the fixing knobs.

Wash the filter with lukewarm water or, for dry powders, with compressed air.

Reassemble the filter after having it dried up.

Cleaning the heat exchanger

It is advisable to check the condition of the heat exchanger before the start of the summer season. Also check if the fins are not clogged by impurities.

To access the heat exchanger, remove the drain pan and the drain guide. Upon having accessed the heat exchanger, clean with compressed air or low pressure steam, without damaging the fins of the heat exchanger.

Before operating it in the summer, check the condensate discharges regularly.

TROUBLE SHOOTING

If the unit does not work properly, first check the points reported in the table below before requesting service. If the problem cannot be solved, contact your dealer or service centre.

Symptom 1: The unit does not run at all

POSSIBLE CAUSES	CORRECTIVE ACTION
Power failure	Restore power
The automatic circuit breaker tripped	Contact service centre
The switch is on Off position	Turn On the unit, select On

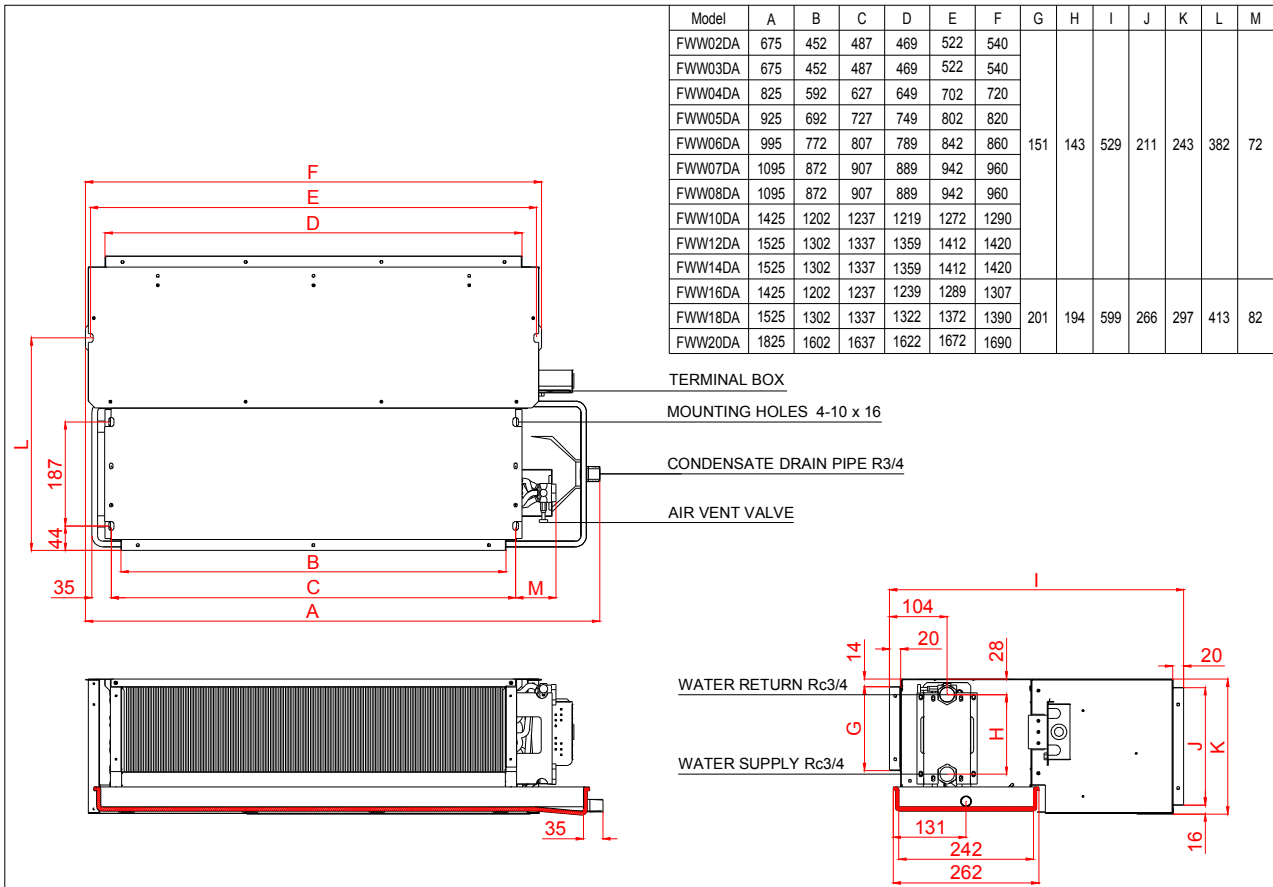
Symptom 2: Poor cooling or heating performance

POSSIBLE CAUSES	CORRECTIVE ACTION
Dirty or clogged air filter	Clean the air filter
Obstacle near the air inlet or outlet	Remove the obstacle
Air inside the heat exchanger	Contact the installer
Doors and windows are open	Close doors and windows
The unit is running at low speed	Select medium or high fan speed

Symptom 3: The unit leaks

POSSIBLE CAUSES	CORRECTIVE ACTION
The unit is not installed with the correct inclination	Contact the installer
The condensate discharge is clogged	Contact the installer

OUTLINES AND DIMENSIONS



Notes:

1. All dimensions are in mm.
2. All standard units are with back air plenum and without filters.
3. Right hand coil connection shown.

Warning

- Daikin Industries, Ltd.'s products are manufactured for export to numerous countries throughout the world. Daikin Industries, Ltd. does not have control over which products are exported to and used in a particular country. Prior to purchase, please therefore confirm with your local authorized importer, distributor and/or retailer whether this product conforms to the applicable standards, and is suitable for use, in the region where the product will be used. This statement does not purport to exclude, restrict or modify the application of any local legislation.
- Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorized parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

If you have any enquiries, please contact your local importer, distributor and/or retailer.

Cautions on product corrosion

1. The units should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided. If you need to install the unit close to the sea shore, contact your local distributor.

Dealer**DAIKIN INDUSTRIES, LTD.**

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