AIR CONDITIONER

Installation Manual

Chilled Water Fan Coil Unit

Model Name :

Ceiling concealed type with medium filter (MERV14)

42CMS004W

42CMS006W

42CMS008W

42CMS010W

42CMS012W

42CMS014W

42CMS016W

42CMS020W

Installation Manual English

VI_ENG_IM_42CMS_REV.0224

Safety Precautions

For safety and proper installation, please read this manual carefully. After installation is complete, the installer should run a test to check for errors and explain to the customer how to operate the air conditioner including maintenance methods specified in the manual and advise the customer to keep the manual for reference in future. The general person cannot accessed the air conditioner.

Symbols meaning :

ⓘ **WARNING :** Failure to follow this warning could result in personal injury or death.

ⓘ **CAUTION :** Failure to follow this warning could result in personal injury or equipment damage that could lead to serious consequences.

ⓘ WARNING

- Only trained and certified technicians should install, repair and service this air conditioning unit. Improper installation may result in electrical shock, short circuit, water leak, a fire or other damage to the unit and personal property.
- Only use accessories and installation parts must be as described. Otherwise it may result in water leak, electrical shock or a fire.
- The unit should be installed on a base that is strong enough in order to be able to support its weight, if the base is not strong enough that may cause the unit fall down and cause the unit and property damage, personal injury or death.
- Before installing the unit, consider strong winds, typhoons and earthquakes that might affect the unit accordingly. Improper installation may result in the unit falling down or other accidents.

ⓘ WARNING

- The power supply must be isolated from the unit and electrical work should be performed by certified technicians and in accordance with the law and installation manual. Electric current not enough or improper installation may result in electrical shock or a fire.
- Wiring must be stored in a tidy and safe manner. Use wiring that meets the specifications in the installation manual and the stipulations in the local regulations and laws. Use of wiring which does not meet the specifications may result in electrical shock, electrical leakage, smoking and/or a fire.
- Ensure that wiring, remote control wires and transceiver wires must be installed in the cabinet. Improper positioning of the cabinet may cause electrical shock, a fire or overheating at the power connector.
- Disconnect the power supply before working on the unit.
- Ensure that the unit is installed with a ground wire. The ground wire should be located away from gas pipes, water pipes, lightning rods, telephone wires or other ground wires. Improper installation of ground wire may cause electrical shock and/or a fire.
- Ensure that the unit is installed with a circuit breaker to prevent electrical leak. Improper installation of circuit breaker may cause electrical shock and/or a fire.

ⓘ CAUTION

- The unit should be installed in a balanced manner to prevent vibration or water leak.
- Install water pipes and insulate cold water pipes to prevent condensation and water leak. Improper installation of water pipes may cause a water leak and property damage.
- Ensure that there is no water leak after installation or repair.
- **DO NOT** install the air conditioning unit in the location by follows :
  1.Areas there are oil mist, oil steam or steam because this may damage parts of the unit.
  2.Areas with caustic gases because this will cause copper pipes or the connection points have been damaged that causing a gas leak.
  3.Close to machines that can send out electromagnetic waves because the electromagnetic waves will disturb operation of the control system. It may cause an error.
  4.In an area where flammable gases may leak or where there is dust inflammable air or areas with evaporation flammable substances in the air. For example in areas with thinner, gasoline if turn on the air conditioner in such conditions could cause a fire.
- The unit should not be operated for a long time in high humidity conditions such as near a door or window is opened because it will cause a lot of condensed water. This may damage the ceiling and furnitures.
- The manufacturer does not guarantee any damage that cause by neglecting the instructions in this manual.

A chilled water fan coil unit with ceiling concealed - duct type is air conditioner that needs to be designed with supply cool air to suit its use therefore the unit will work efficiently. In choosing to use and design of cool air ducts user should consult an air conditioner engineer or an installer who has experience in the air conditioning systems.

Delivery of products

1.Please verify that the air conditioner you have been delivered is the model that meets your needs and meets the product delivery receipt or not. You can check and compare information between the name plate and the delivery receipt.

2.The air conditioner that you have been delivered must have the same quality warranty card and model name as the product that you have ordered.

3.Check the product

When the product delivered to the consignee whose must check and ensure that the unit is inside the package. If the product does not meet such requirements, the consignee should not accept the product or make a notification with the dealer that you ordered immediately to request the replacement of new products.

Installation recommendations

The unit is suitable for hanging, ceiling mounted or hidden within the ceiling and connect the air pipe to send cool air to the point where you want to use it therefore user should choose the installation location before installing according to recommendations are as follows :

1.Area where the unit is installed must have a space around for useful of checking and maintenance the unit in the future.

2.The point to be fixed on the ceiling or structure must be strong enough to support the weight and vibration machine.

3.Cold air pipe connection should refer to the specification of the unit.

4.Cold water pipe connection both inlet and outlet should refer to the

specification of the unit.

5.Water pipes connection should refer to the specification of the unit.

6.Electrical wiring connection should refer to the specification of the unit.

7.Blower is designed for horizontal installation only.

8.The unit should be installed in the same level as possible to keep the unit working normally and reduce the vibration.

9.Type and thickness of the insulation must be in accordance with the installation standards. Cold water pipe both inlet and outlet must be insulated to prevent condensation.

10.Fan speed selection should use only one speed as appropriate for the area of using.

11.Water pipe should be bent so that water can flow out easily including having to do a drain trap to trap odors as well.

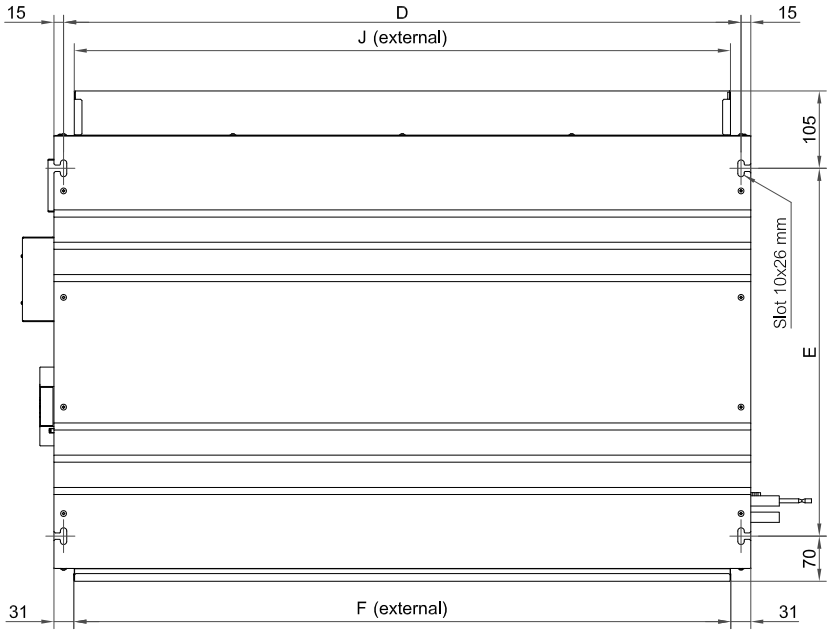
Selection of installation place

Select the place that can circulate cold and hot air regularly.

Avoid installing in the following places.

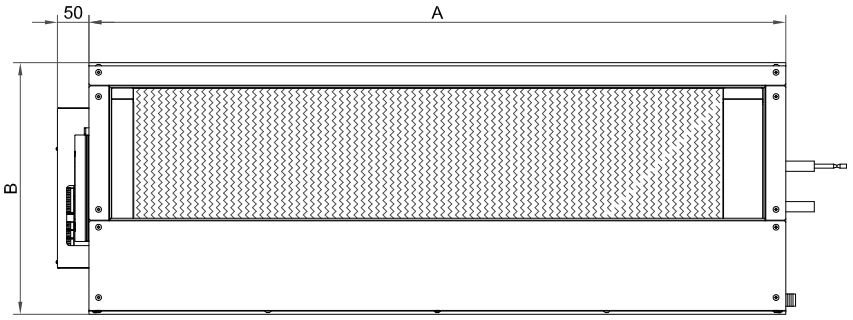
- Place exposed to air with high salt content (seaside area)
- Place in acidic or basic atmosphere (hot spring, factory producing chemical or medicine, and places where exhaust gases can affect to the air conditioner). If the air conditioner is placed in those area, the heat exchanger and some parts will be corroded.
- Place where iron or other metal dust is present. If iron or other metal dust adheres to or collects on the interior of the air conditioner, it may spontaneously combust and start to fire.
- Place where oil aerosol or lubricating oil can spread in the atmosphere. This can corrosive the heat exchanger. The aerosol will obstruct heat exchanging, damage plastic parts and cause the insulator to slip off and other problems.
- A restaurant kitchen where a lot of oil is used. This causes oil adhering to air filter which will decrease the air conditioner working efficiency. Condensing oil will damage plastic parts and other problems.
- Place near obstacle for example ventilator or lamp which impede the air flow (air impeding will decrease the air conditioner working efficiency and stop the air conditioner to work)
- Place where generator is used from the inside. The electric frequency and voltage will be fluctuated. Therefore, the air conditioner work in a wrong way.
- Do not use the air conditioner for special purposes such as preserving food, precision instruments, or art objects, or where breeding animals or growing plants are kept. (This may degrade the quality of preserved materials.)
- Place where any of high-frequency appliances (including inverter devices, private power generators, medical equipment, and communication equipment). (A malfunction of the air conditioner, abnormal control, or problems due to noise to such appliances / equipment may occur.)
- The area under the air conditioner can be damaged because of moisture (if the ventilator is blocked or the relative humidity level is over 80%, water will be condensed into droplets from the inside. This droplets can damage the air conditioner.)
- When the wireless remote controller is used in a room equipped with an inverter-type fluorescent light or at a place exposed to direct sunlight, signals from the remote controller may not be received correctly.
- Place where organic solvent is used. The air conditioner can not be used for chilling liquid carbonic acid or chemical factories.
- Place near a door or window exposed to humid outside air (Dew dropping may form.)

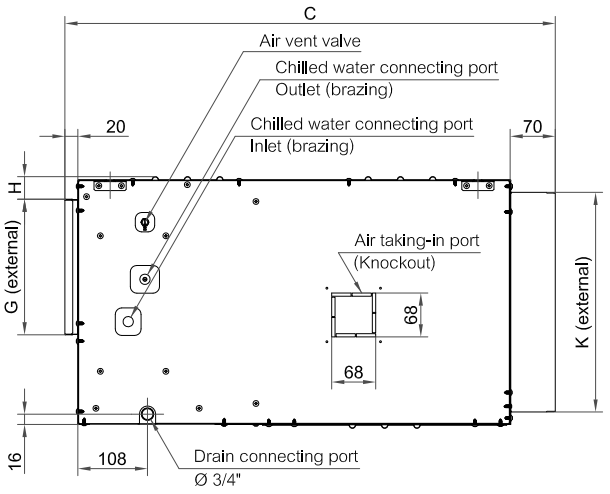
External view



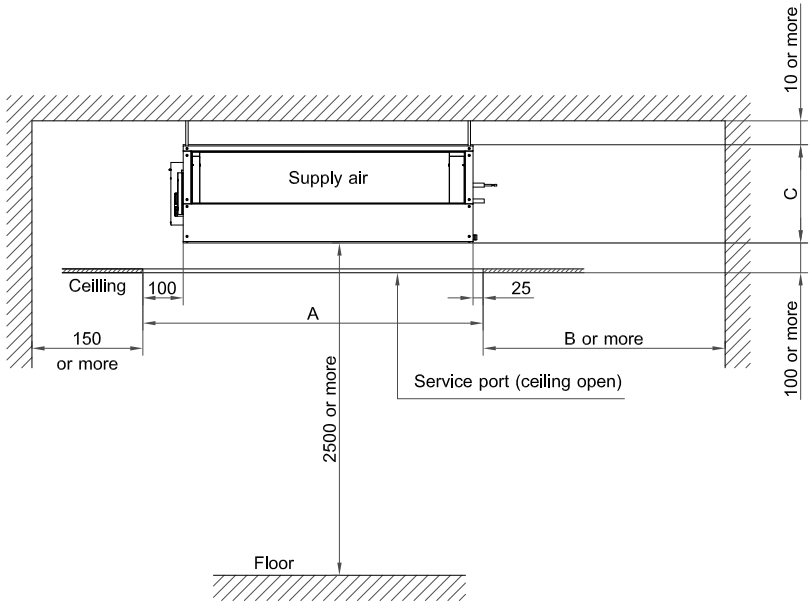
MODEL	DIMENSIONS									
	A	B	C	D	E	F	G	H	J	K
42CMS004W212RE	870	310	675	840	480	808	160	20	807	260
42CMS004W312RE	870	310	675	840	480	808	160	20	807	260
42CMS006W212RE	870	345	715	840	520	808	180	20	807	295
42CMS006W312RE	870	345	715	840	520	808	180	20	807	295
42CMS008W312RE	870	345	715	840	520	808	180	20	807	295
42CMS008W412RE	870	345	715	840	520	808	180	20	807	295
42CMS010W312RE	1000	360	715	970	520	938	180	20	937	310
42CMS010W412RE	1080	360	715	1050	520	1018	180	20	1017	310
42CMS012W312RE	1080	390	715	1050	520	1018	210	20	1017	340
42CMS012W412RE	1150	390	715	1120	520	1088	210	20	1087	340
42CMS014W312RE	1080	390	765	1050	570	1018	210	30	1017	340
42CMS014W412RE	1150	390	765	1120	570	1088	210	30	1087	340
42CMS016W312RE	1150	390	765	1120	570	1088	210	30	1087	340
42CMS016W412RE	1150	390	765	1120	570	1088	210	30	1087	340
42CMS020W312RE	1280	390	765	1250	570	1218	210	30	1217	340
42CMS020W412RE	1280	390	765	1250	570	1218	210	30	1217	340

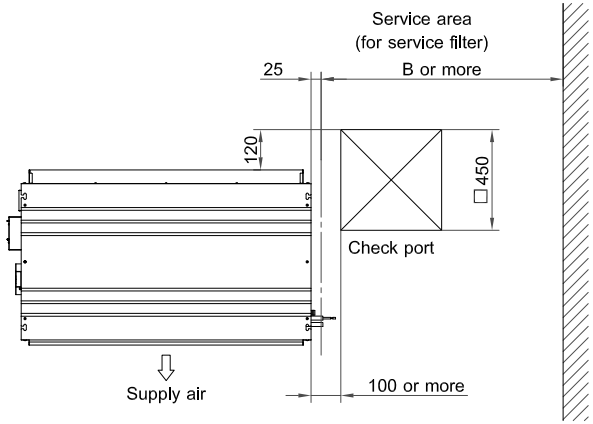
UNIT IN mm

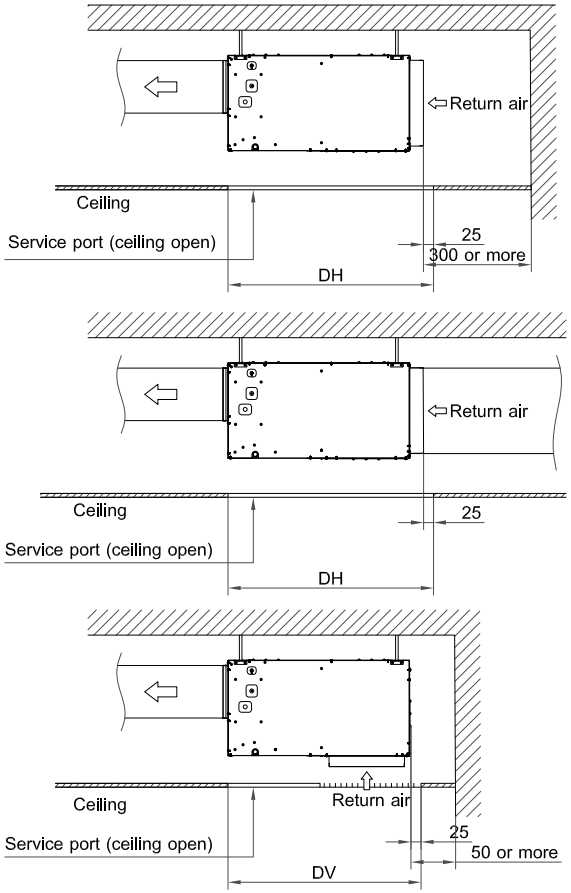


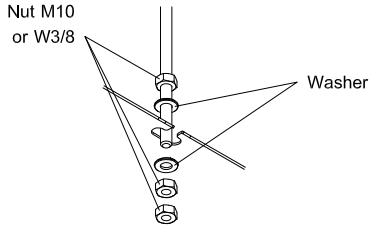


Installation space







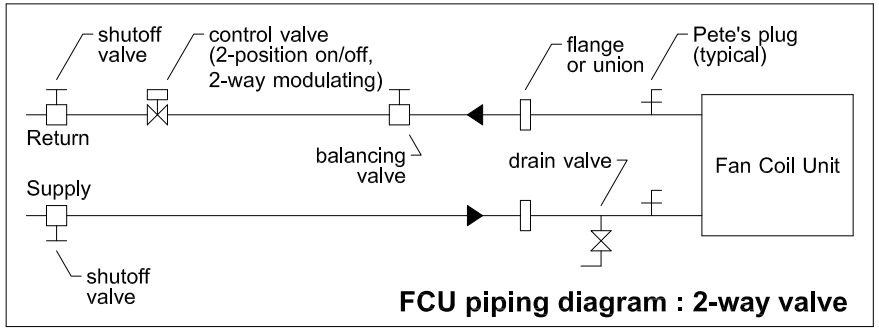


MODEL	DIMENSIONS				
	A	B	C	DH	DV
42CMS004W_12RE	995	810	310	680	610
42CMS006W_12RE	995	810	345	720	650
42CMS008W_12RE	995	810	345	720	650
42CMS010W312RE	1125	940	360	720	650
42CMS010W412RE	1205	1020	360	720	650
42CMS012W312RE	1205	1020	390	720	650
42CMS012W412RE	1275	1090	390	720	650
42CMS014W312RE	1205	1020	390	770	700
42CMS014W412RE	1205	1090	390	770	700
42CMS016W_12RE	1205	1090	390	770	700
42CMS020W_12RE	1405	1220	390	770	700

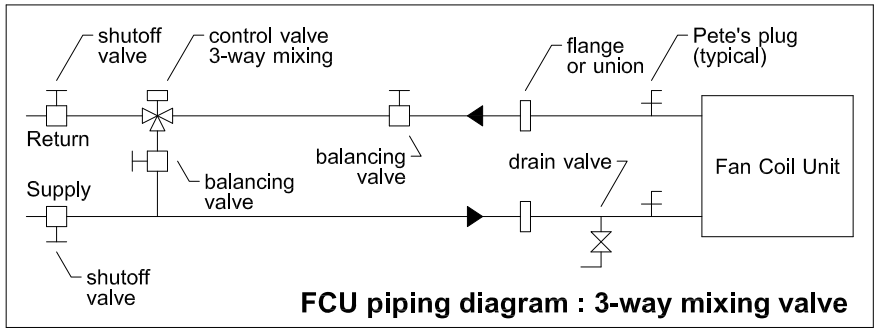
UNIT IN mm

Chilled water piping

Piping diagram

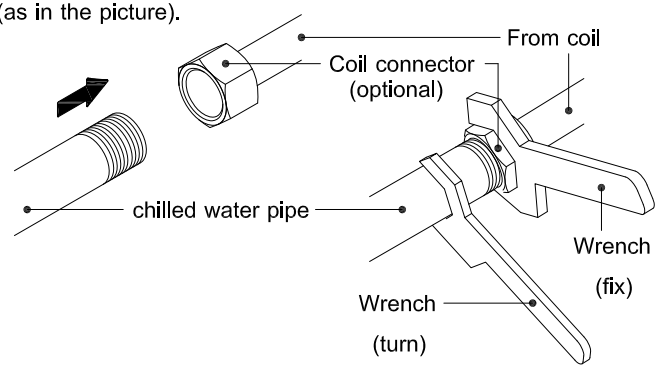


FCU piping diagram : 2-way valve



FCU piping diagram : 3-way mixing valve

- To connect the pipe to or from the air conditioner, turn (tighten) it by using 2 wrenches (as in the picture).



- Connecting the pipe to the coil, the pipe must be insulated to prevent condensation.

Insulation material / pipe

Pipes and insulation must be made of the following materials :

- Pipe : VP25 Rigid vinyl chloride pipe
- Insulation : Polyethylene foam, thickness 10 mm or more.

Drain piping work

CAUTION

Following the Installation Manual, perform the drain piping work so that water is properly drained, and apply a heat insulation so as not to cause a dew dropping. Inappropriate piping work may result in water leakage in the room and wet of furniture.

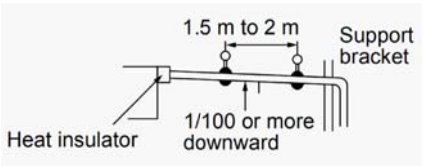
Insulation / Pipe Material

Pipes and insulation must be made of the following materials.

- Pipe : Rigid vinyl chloride pipe VP20
- Insulation : Polyethylene foam : 10 mm thickness or more

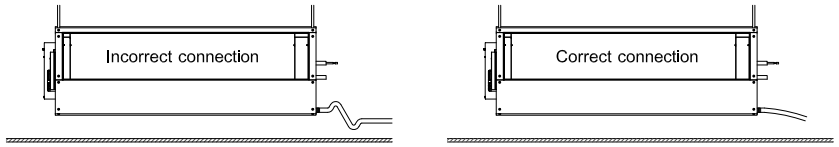
Specification

- The drain pipe of the fan coil unit must be insulated.
- Be sure to apply insulation to the connecting parts of the fan coil unit. Incomplete insulation may cause dripping.
- Arrange the drain pipe in a downward oblique direction (1/100 or more), and do not increase the size and trap water in the pipe, it may cause abnormal sound.

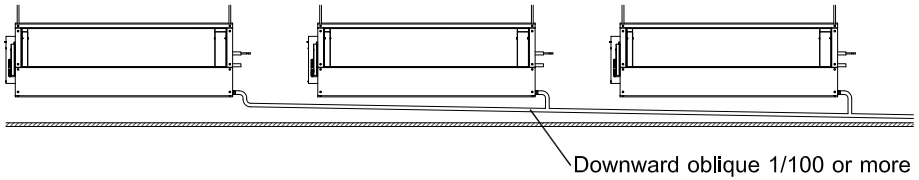


- The length of the transverse pipe should be limited to 20 m or less. In case of using long pipes, attach the brackets 1.5 to 2 m apart to prevent swaying and falling.

- Do not connect the drainpipe in a billowy line because it will cause the water to flow inconveniently.



- If there are many unit in the same place, the sewer can be made together as shown in the picture.



- Rigid vinyl chloride tubing cannot be connected to the drain connection port of the fan coil unit. To connect the drain connection port, be sure to use / secure the hose supplied with the pipe strap. Otherwise, damage may occur, or water is leaking from the drain connection port.

Electrical connection

CAUTION

- Use the specified wires for wiring connecting the terminals. Securely fix them to prevent external forces applied to the terminals from the terminals.
- Incomplete connection or fixation may cause a fire or other trouble.
- Connect earth wire. (ground wire connection) Incomplete grounding causes an electric shock.
- Do not connect earth wires to gas pipes, water pipes, lightening conductor or telephone earth wires.
- Be sure to connect the wires matching the terminal numbers. Incorrect connection causes an error.

Wiring procedure

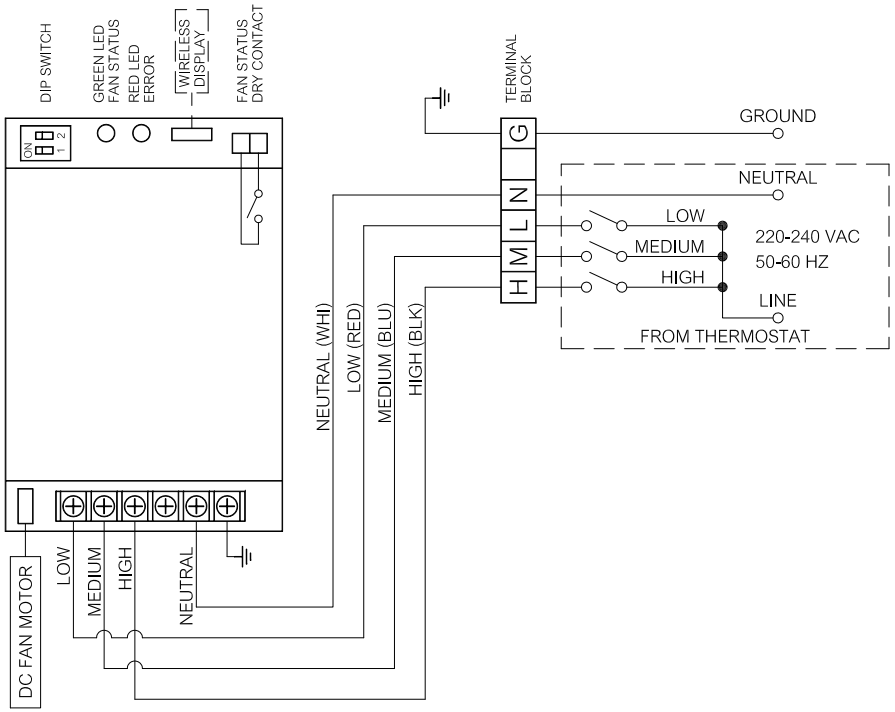
1 Loosen the cover fixing screws of the electric control box. Then remove the cover.

2 Connect the system connection wires and remote-control wires to the terminal block of electrical control box.

3 Tighten the screws of the terminal blocks and secure the wires to the electrical control box with cable holder. (Do not strain the wires in the connection to the terminal block.)

4 Cover the electrical control box without overlapping the wires.

Wiring diagram



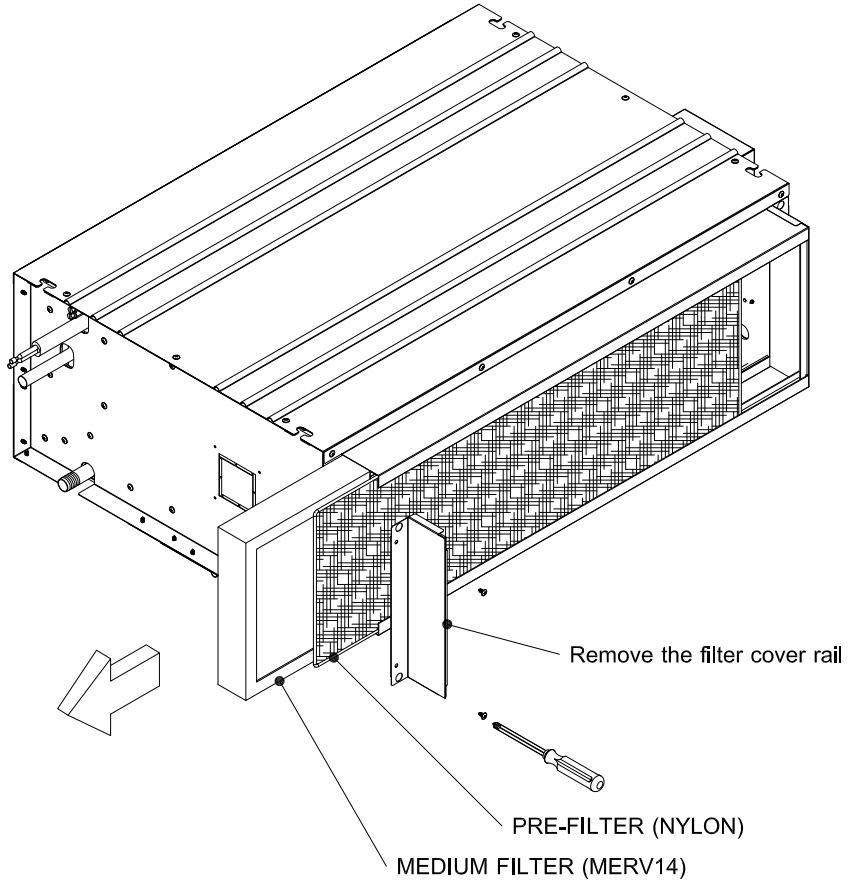
Service the air filter

When using the air conditioner for a certain distance, the air conditioner may produce less cooling, it should be maintained as follows.

1.Turn off the main power switch to cut off the power to the unit.

2.Remove the pre-filter and clean it with soap or detergent, rinse with clean water and dry under the sun.

3.Remove the medium filter and clean the dust out of the filter by using a vacuum cleaner.(Don't wash by the water).



Troubleshooting

When the fan coil unit is malfunctioning. Before calling for service personnel, please check make sure that:

1. The circuit breaker is in the ON position.
2. The temperature control switch is in the lowest number.
3. The fan control switch is in the HIGH position.
4. The air filter panel is in sufficiently clean condition.
5. The power switch is in the COOL mode.

When checking, if it is found that the air conditioner is still not working or unable to cool normally Turn off the power switch and main switch. and call a trusted service technician for service.

Consideration before calling a technician.

Check the following items before calling a technician because you may be able to fix it. But if after checking, the air conditioner still malfunctions. Please stop using the air conditioner and consult your dealer.

Malfunction	Preliminary Checking
Air conditioner not working	>Check wires that missing or not. >Check the electric current crash or not. >Check remote control that set up time correct or not.
Cooling capacity drop	>Check temperature set up suitable or not. >Check that the sunlight in the room directly or not. >Check the door and windows it open or not. > Check if anything is blocking the air vents inside of the unit. > Check if there is an excessive heat source in the room. > Check if the ventilators are working or not. > Check if the air filter is dirty or not.
Steam or smoke comes out from the air conditioner while it is operating.	> The cause may be caused by the heat in the room reacting with the cold that comes out of the air conditioner.

Note :

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Note :

Carrier (Thailand) Co., Ltd

1858/63-74 Fl. 14-15
Debaratana KM. 4.5 Str., South Bangna Ward,
Bangna Dist., Bangkok 10260

Carrier Call Center

Tel : 02-090-9900