



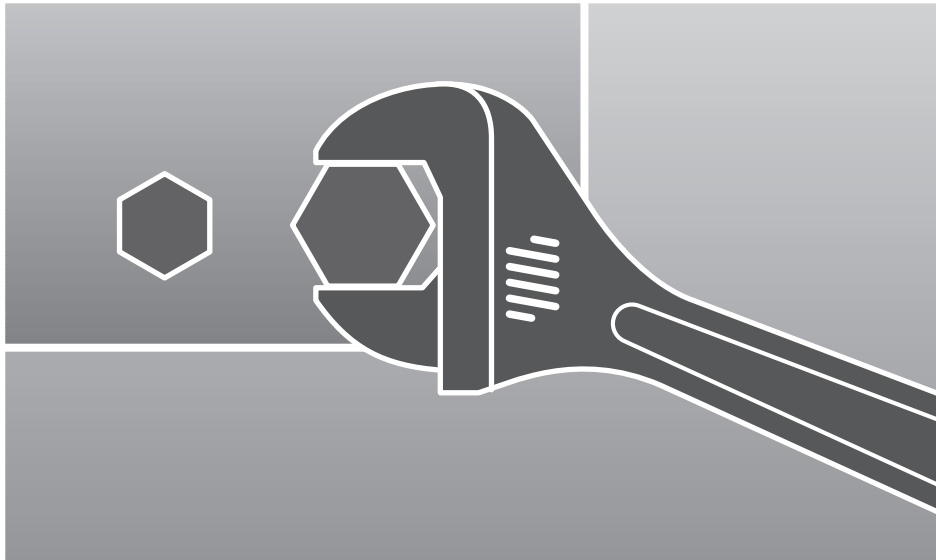
INSTALLATION MANUAL

Indoor Unit	Outdoor Unit
DH140CAV	UH140CAV
DH105CAV	UH105CAV

ENGLISH
ESPAÑOL
FRANÇAIS

AMG
Air Marketing Group LLC
System Air Conditioner
(Cooling and Heating)

INVERTER



ESF DB98-29515A(1)

Air Marketing Group LLC

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Safety Precautions

(Carefully follow the precautions listed below because they are essential to guarantee the safety of the equipment.)



WARNING

- Always disconnect the air conditioner from the power supply before servicing it or accessing its internal components.
- Verify that installation and testing operations are performed by qualified personnel.
- Verify that the air conditioner is not installed in an easily accessible area.

GENERAL INFORMATION

- ◆ Carefully read the content of this manual before installing the air conditioner and store the manual in a safe place in order to be able to use it as reference after installation.
- ◆ For maximum safety, installers should always carefully read the following warnings.
- ◆ Store the operation and installation manual in a safe location and remember to hand it over to the new owner if the air conditioner is sold or transferred.
- ◆ This manual explains how to install an indoor unit with a split system with two SAMSUNG units. The use of other types of units with different control systems may damage the units and invalidate the warranty. The manufacturer shall not be responsible for damages arising from the use of non compliant units.
- ◆ The manufacturer shall not be responsible for damage originating from unauthorized changes or the improper connection of electric and requirements set forth in the "Operating limits" table, included in the manual, shall immediately invalidate the warranty.
- ◆ The air conditioner should be used only for the applications for which it has been designed: the indoor unit is not suitable to be installed in areas used for laundry.
- ◆ Do not use the units if damaged. If problems occur, switch the unit off and disconnect it from the power supply.
- ◆ In order to prevent electric shocks, fires or injuries, always stop the unit, disable the protection switch and contact SAMSUNG's technical support if the unit produces smoke, if the power cable is hot or damaged or if the unit is very noisy.
- ◆ Always remember to inspect the unit, electric connections, refrigerant tubes and protections regularly. These operations should be performed by qualified personnel only.
- ◆ The unit contains moving parts, which should always be kept out of the reach of children.
- ◆ Do not attempt to repair, move, alter or reinstall the unit. If performed by unauthorized personnel, these operations may cause electric shocks or fires.
- ◆ Do not place containers with liquids or other objects on the unit.
- ◆ All the materials used for the manufacture and packaging of the air conditioner are recyclable.
- ◆ The packing material and exhaust batteries of the remote control (optional) must be disposed of in accordance with current laws.
- ◆ The air conditioner contains a refrigerant that has to be disposed of as special waste. At the end of its life cycle, the air conditioner must be disposed of in authorized centers or returned to the retailer so that it can be disposed of correctly and safely.

INSTALLING THE UNIT

IMPORTANT: When installing the unit, always remember to connect first the refrigerant tubes, then the electrical lines.
Always disassemble the electric lines before the refrigerant tubes.

- ◆ Upon receipt, inspect the product to verify that it has not been damaged during transport. If the product appears damaged, DO NOT INSTALL it and immediately report the damage to the carrier or retailer (if the installer or the authorized technician has collected the material from the retailer.)
- ◆ After completing the installation, always carry out a functional test and provide the instructions on how to operate the air conditioner to the user.
- ◆ Do not use the air conditioner in environments with hazardous substances or close to equipment that release free flames to avoid the occurrence of fires, explosions or injuries.

POWER SUPPLY LINE, FUSE OR CIRCUIT BREAKER

- ◆ Always make sure that the power supply is compliant with current safety standards. Always install the air conditioner in compliance with current local safety standards.
- ◆ Always verify that a suitable grounding connection is available.
- ◆ Verify that the voltage and frequency of the power supply comply with the specifications and that the installed power is sufficient to ensure the operation of any other domestic appliance connected to the same electric lines.
- ◆ Always verify that the cut-off and protection switches are suitably dimensioned.
- ◆ Verify that the air conditioner is connected to the power supply in accordance with the instructions provided in the wiring diagram included in the manual.
- ◆ Always verify that electric connections (cable entry, section of leads, protections...) are compliant with the electric specifications and with the instructions provided in the wiring scheme. Always verify that all connections comply with the standards applicable to the installation of air conditioners.

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Preparation for installation

When deciding on the location of the air conditioner with the owner, the following restrictions must be taken into account.

General

Do NOT install the air conditioner in a location where it will come into contact with the following elements:

- ◆ Combustible gases
- ◆ Saline air
- ◆ Machine oil
- ◆ Sulphide gas
- ◆ Special environmental conditions





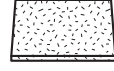






If you must install the unit in such conditions, first consult your dealer.

Avoid installing the air conditioner:

- ◆ In areas where it is exposed to direct sunlight. Close to heat sources.
- ◆ In damp areas or locations where it could come into contact with water (for example rooms used for laundry)
- ◆ In areas where curtains and furniture could affect the supply and discharge of air.
- ◆ Without leaving the required minimum space around the unit (as shown in the drawing).
- ◆ In scarcely ventilated areas.
- ◆ On surfaces that are unable to support the weight of the unit without deforming, breaking or causing vibrations during the use of the air conditioner.
- ◆ In a position that does not enable the condensate drainage pipe to be correctly installed (at the end of the installation. It is always essential to check the efficiency of the drainage system.)

Accessories

- ◆ The following accessories are supplied with the indoor unit. The type and quantity may differ depending on the specifications.

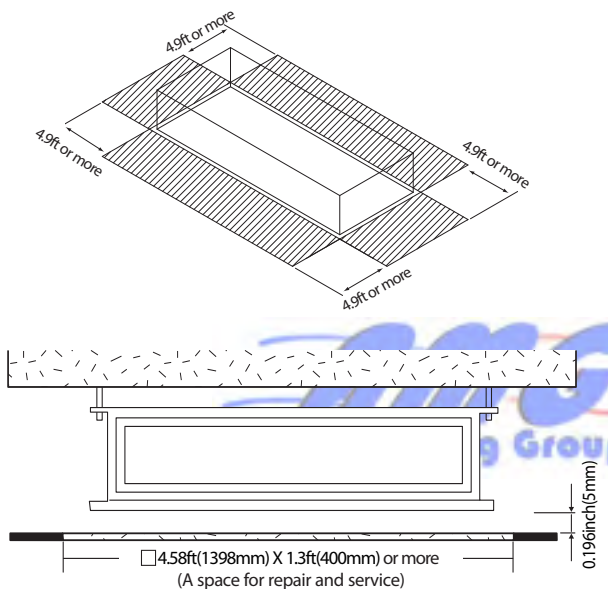
<p>User's manual</p> 	<p>Installation manual</p> 	<p>Pattern sheet</p> 	<p>Insulation drain</p> 	<p>Insulation cover pipe</p> 	
<p>Insulation pipe</p> 	<p>Insulation drain pipe</p> 	<p>Nut</p> 	<p>Rubber</p> 	<p>Cable-tie</p> 	<p>Drain socket</p> 

Deciding on where to install the indoor unit

Indoor unit

- ◆ There must be no obstacles near the air inlet and outlet.
- ◆ Install the indoor unit on a ceiling that can support its weight.
- ◆ Maintain sufficient clearance around the indoor unit.
- ◆ Make sure that the water dripping from the drain hose runs away correctly and safely.
- ◆ The indoor unit must be installed in this way, that they are out of public access. (Not touchable by the users)
- ◆ After connecting a chamber, insulate the connection part between the indoor unit and the chamber with t10 or thicker insulation. Otherwise, there can be air leak or dew from the connection part.

Space requirements for indoor unit



- You must have 1.969inch(5mm) or more space between the ceiling and the bottom of indoor unit. Otherwise, the noise from the vibration of indoor unit may bother the user. When the ceiling is under construction, the hole for check-up must be made to take service, clean and repair the unit.
- It is possible to install the unit at an height of between 7.2ft(2.2m) ~ 8.2ft(2.5m) from the ground, if the unit has a duct with a well defined length (1ft(304.8mm) or more), to avoid fan motor blower contact.

CAUTION

**The units must be installed according to distances declared, in order to permit accessibility from each side, either to guarantee correct operation of maintenance or repairing products.
The unit's parts must be reachable and removable completely under safety condition (for people or things).**

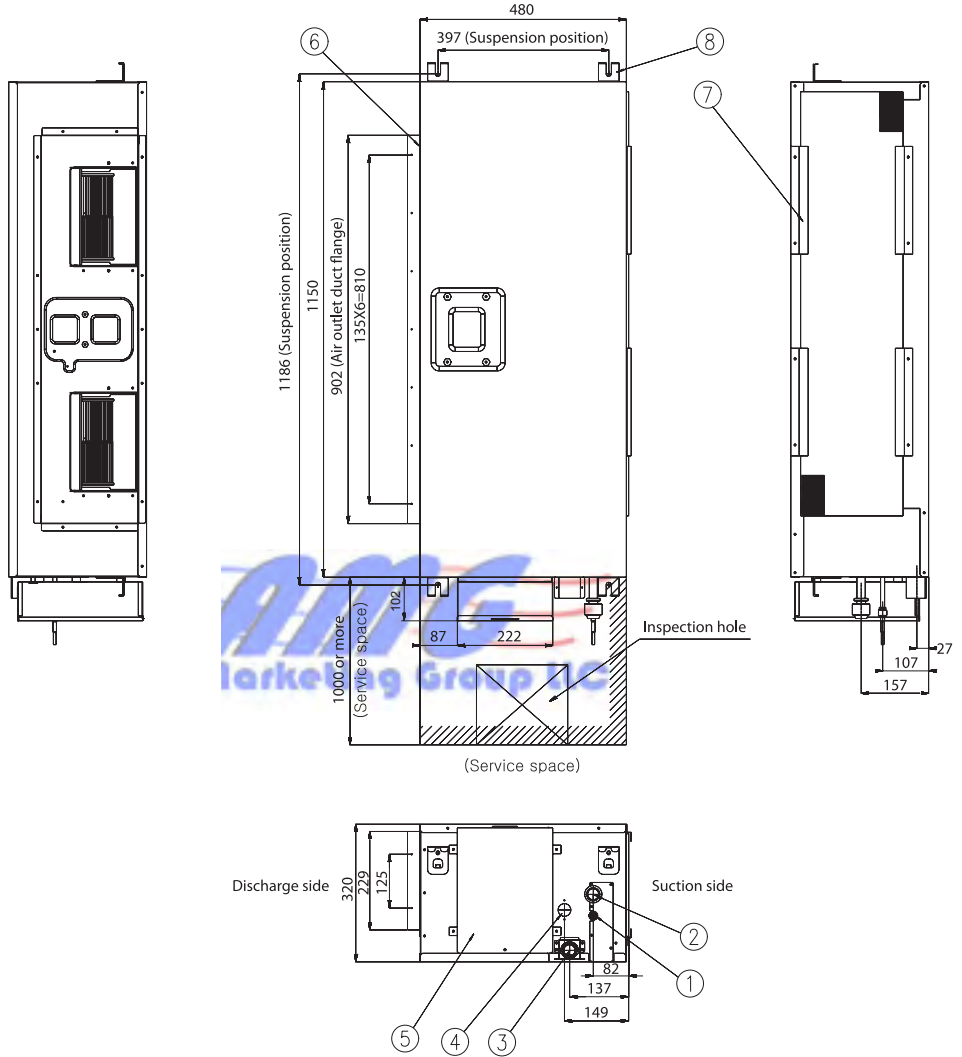
Weight				
Net weight	Indoor Unit	DH105CAV	kg(lb)	39(86)
		DH140CAV		55(121.1)
	Outdoor Unit	UH105CAV		90(198.4)
		UH140CAV		94(207.2)

Deciding on where to install the indoor unit (Continued)

Drawing of the indoor unit

DH105CAV

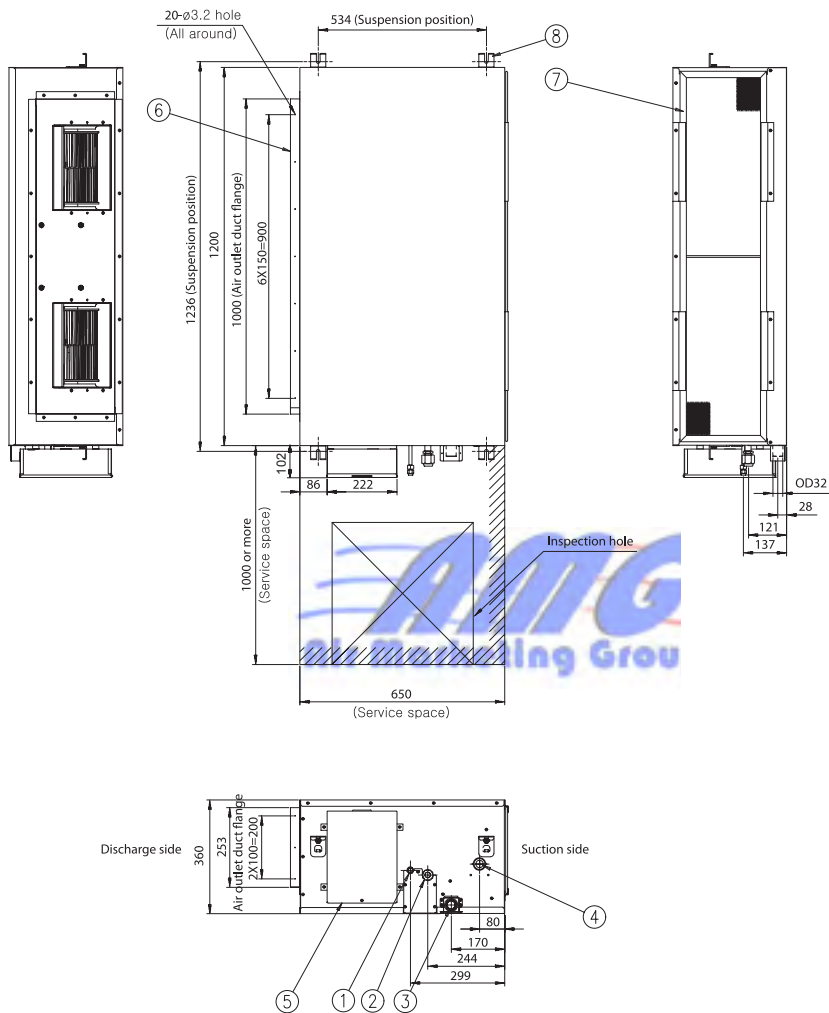
Unit : mm



No.	Name	Description
1	Liquid pipe connection	ø9.52
2	Gas pipe connection	ø15.88
3	Drain pipe connection	OD32 ID26(without drain pump)
4	Drain pipe connection	Using drain pump (Optional)
5	Power supply connection	
6	Air discharge flange	
7	Air filter	
8	Hook	M8~M10

DH140CAV

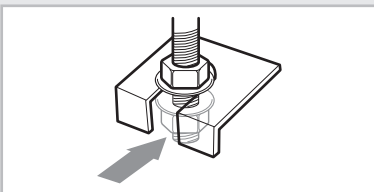
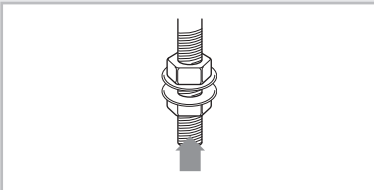
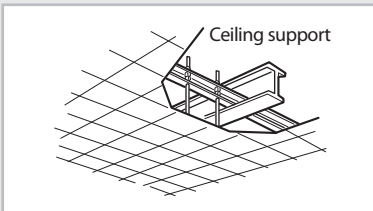
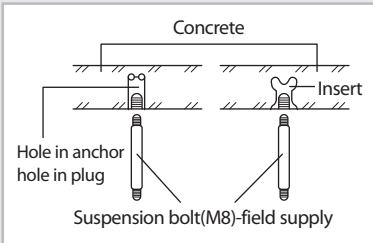
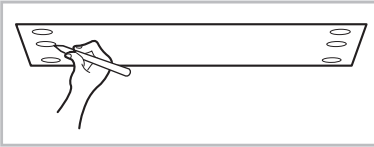
Unit : mm



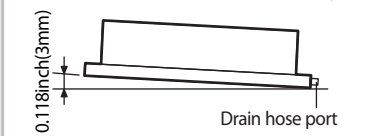
No.	Name	Description
1	Liquid pipe connection	ø9.52
2	Gas pipe connection	ø19.05
3	Drain pipe connection	OD32 ID26(without drain pump)
4	Drain pipe connection	Using drain pump (Optional)
5	Power supply connection	
6	Air discharge flange	
7	Air filter	
8	Hook	M8~M10

Indoor unit installation

It is recommended to install the refnet joint before installing the indoor unit.



When the drain hose is installed to the right.



- 1 Place the pattern sheet on the ceiling at the spot where you want to install the indoor unit.

Note Since the diagram is made of paper, it may shrink or stretch slightly due to temperature or humidity. For this reason, before drilling the holes maintain the correct dimensions between the markings.

- 2 Insert bolt anchors. Use existing ceiling supports or construct a suitable support as shown in figure.

- 3 Install the suspension bolts depending on the ceiling type.

CAUTION ♦ Ensure that the ceiling is strong enough to support the weight of the indoor unit. Before hanging the unit, test the strength of each attached suspension bolt.
 ♦ If the length of suspension bolt is more than 4.92ft(1.5m), it is required to prevent vibration.
 ♦ If this is not possible, create an opening on the false ceiling in order to be able to use it to perform the required operations on the indoor unit.

- 4 Screw eight nuts to the suspension bolts making space for hanging the indoor unit.

CAUTION You must install all the suspension rods.

- 5 Hang the indoor unit to the suspension bolts between two nuts.

Note Piping must be laid and connected inside the ceiling when suspending the unit. If the ceiling is already constructed, lay the piping into position for connection to the unit before placing the unit inside the ceiling.

- 6 Screw the nuts to suspend the unit.

- 7 Adjust level of the unit by using measurement plate for all 4 sides.

Note For proper drainage of condensate, give a 0.118inch(3mm) slant to the left or right side of the unit which will be connected with the drain hose, as shown in the figure. Make a tilt when you wish to install the drain pump, too.

Purging the unit

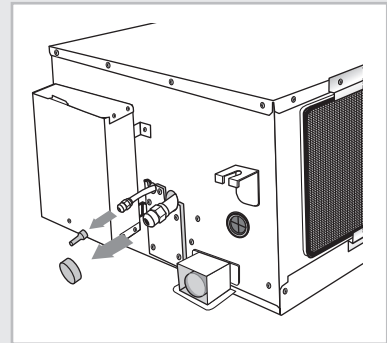
From factory the unit is supplied and set with a pre-charge of nitrogen gas (insert gas). Therefore, all insert gas must be purged before connecting the assembly piping.

Unscrew the pinch pipe at the end of each refrigerant pipe.

Result: All inert gas escapes from the indoor unit.

Note To prevent dirt or foreign objects from getting into the pipes during installation, do NOT remove the pinch pipe completely until you are ready to connect the piping.

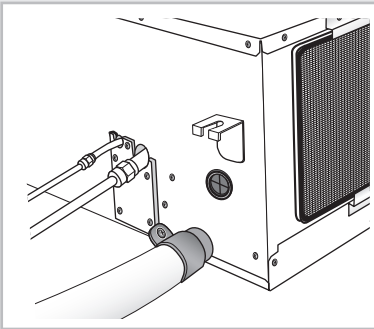
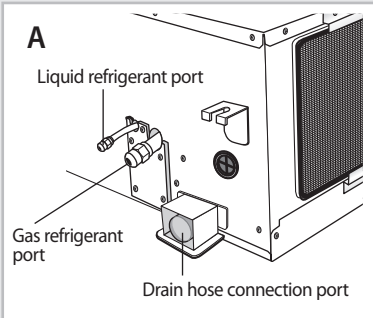
- CAUTION**
- ◆ Connect the indoor and outdoor units using pipes with flared connections(not supplied). For the lines, use insulated, unwelded, degreased and deoxidized copper pipe, (Cu DHP type to ISO 1337), suitable for operating pressures of at least 4200kPa and for a burst pressure of at least 20700kPa. Copper pipe for hydro-sanitary applications is completely unsuitable.
 - ◆ For sizing and limits (height difference, line length, max. bends, refrigerant charge, etc.) see the outdoor unit installation manual.
 - ◆ All refrigerant connection must be accessible, in order to permit either unit maintenance or removing it completely.



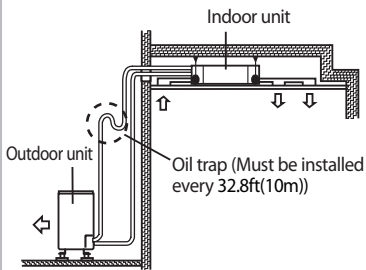
* The designs and shape are subject to change according to the model.

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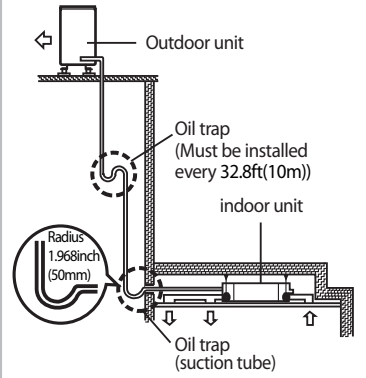
Connecting the refrigerant pipe



a. When the indoor unit is above the outdoor unit



b. When the outdoor unit is above the indoor unit



There are two refrigerant pipes of different diameters:

- ◆ A smaller one for the liquid refrigerant
- ◆ A larger one for the gas refrigerant
- ◆ The thickness of tube should not be less than 0.039inch(1mm).
- ◆ The inside of copper tube must be clean & has no dust.

The connection procedure for the refrigerant pipes varies according to the exit position of the pipes from the indoor unit, as seen when facing the indoor in the "A" side.

- ◆ Liquid refrigerant port
- ◆ Gas refrigerant port
- ◆ Drain hose connection port

- 1 Remove the pinch pipe on the pipes and connect the assembly pipes to each pipe, tightening the nuts, first manually and then with a torque wrench, a spanner applying the following torque.

Outer Diameter	Torque (ft.lb)
6.35 mm (1/4")	13.2
9.52 mm (3/8")	31.0
12.70 mm (1/2")	40.6
15.88 mm (5/8")	48.0
19.05 mm (3/4")	73.6

Note If the pipes must be shortened refer to page 11.

- 2 Must use insulator which is thick enough to cover the refrigerant tube to protect the condensate water on the outside of pipe falling onto the floor and the efficiency of the unit will be better.

- 3 Cut off any excess foam insulation.

- 4 Be sure that there must be no crack or wave on the bended area.

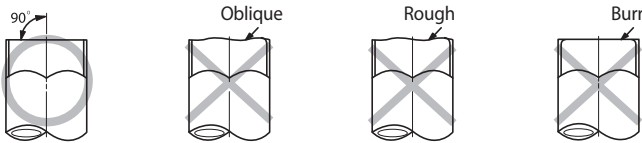
- 5 It would be necessary to double the insulation thickness(0.393inch(10mm)or more)to prevent condensation even on the insulator when if the installed area is warm and humid.

- 6 Shape an oil trap as shown in figure the oil trap must be fomed every level difference of 32.8ft(10m).

Cutting/Flaring the pipes

1 Make sure that you have the required tools available.
(pipe cutter, reamer, flaring tool and pipe holder).

2 If you wish to shorten the pipes, cut it with a pipe cutter, taking care to ensure that the cut edge remains at a 90° angle with the side of the pipe. Refer to the illustrations below for examples of edges cut correctly and incorrectly.



3 To prevent any gas from leaking out, remove all burrs at the cut edge of the pipe, using a reamer.

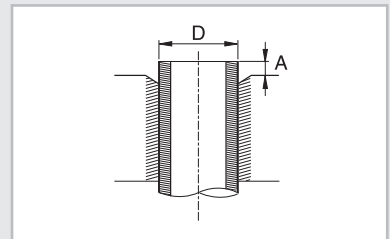
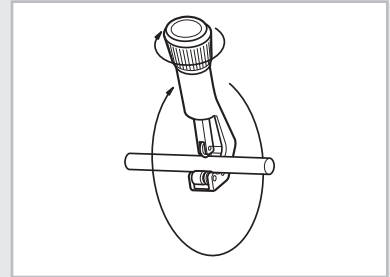
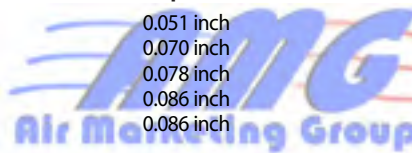
4 Slide a flare nut on to the pipe and modify the flare.

Outer diameter (D)

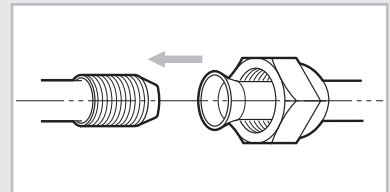
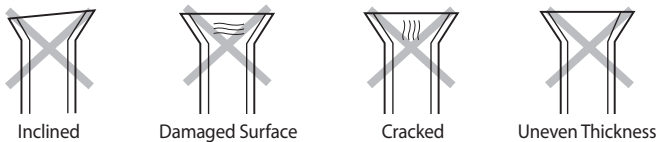
- 6.35 mm (1/4")
- 9.52 mm (3/8")
- 12.70 mm (1/2")
- 15.88 mm (5/8")
- 19.05 mm (3/4")

Depth (A)

- 0.051 inch
- 0.070 inch
- 0.078 inch
- 0.086 inch
- 0.086 inch



5 Check that the flaring is correct, referring to the illustrations below for examples of incorrect flaring.



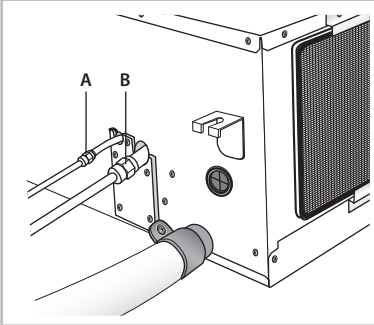
6 Align the pipes and tighten the flare nuts first manually and then with a torque wrench, applying the following torque.

Valve	Flare nut		Valve cap		Pressure port cap		Valve needle		Pressure port	
	Wrench (inch)	ft.lb	Wrench (inch)	ft.lb	Wrench (inch)	ft.lb	Wrench (inch)	ft.lb	Wrench (inch)	ft.lb
1/4"	0.67	13.2	0.91	14.8	0.7	11.8~13.3	Allen (hex.) 0.2	6.64	-	0.25
3/8"	0.87	31.0	0.91	14.8	0.7	11.8~13.3	Allen (hex.) 0.2	6.64	-	0.25
1/2"	1.02	40.6	1.14	29.5	0.7	11.8~13.3	Allen (hex.) 0.2	9.59	-	0.25
5/8"	1.14	48.0	1.14	29.5	0.7	11.8~13.3	Allen (hex.) 0.2	9.59	-	0.25
3/4"	1.42	73.6	1.5	29.5	0.7	11.8~13.3	Allen (hex.) 0.2	9.59	-	0.25

CAUTION

In case of welding the pipe, you must weld with nitrogen gas blowing.

Performing leak test & insulation



Leak test

◆ LEAK TEST WITH NITROGEN (before opening valves)

In order to detect basic refrigerant leaks, before recreating the vacuum and recirculating the R-410A, it's responsible of installer to pressurize the whole system with nitrogen (using a cylinder with pressure reducer) at a pressure above 30 bar (gauge).

◆ LEAK TEST WITH R-410A (after opening valves)

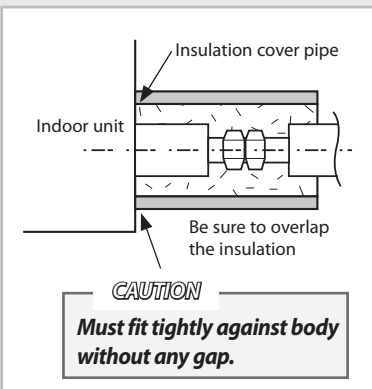
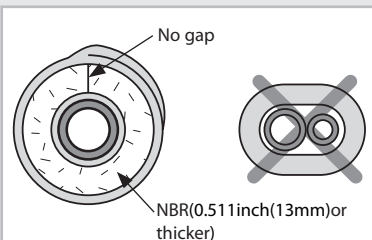
Before opening valves, discharge all the nitrogen into the system and create vacuum. After opening valves check leaks using a leak detector for refrigerant R-410A.

CAUTION

Discharge all the nitrogen to create a vacuum and charge the system.

Insulation

Once you have checked that there are no leaks in the system, you can insulate the piping and hose.



CAUTION
Must fit tightly against body without any gap.

- 1 To avoid condensation problems, place **T0.511inch(13mm) or thicker Acrylonitrile Butadien Rubber** separately around each refrigerant pipe.

Note Always make the seam of pipes face upwards.

- 2 Wind insulating tape around the pipes and drain hose avoiding to compress the insulation too much.
- 3 Finish wrapping insulating tape around the rest of the pipes leading to the outdoor unit.
- 4 The pipes and electrical cables connecting the indoor unit with the outdoor unit must be fixed to the wall with suitable ducts.

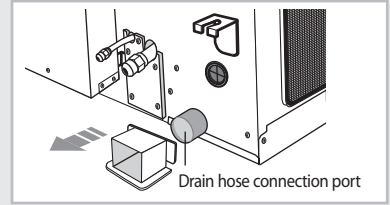
CAUTION

All refrigerant connection must be accessible, in order to permit either unit maintenance or removing it completely.

Drain hose installation

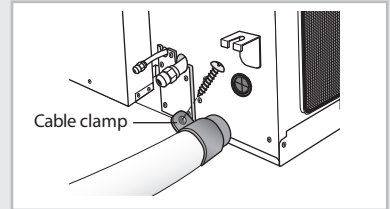
Care must be taken when installing the drain hose for the indoor unit to ensure that any condensate water is correctly drained outside. The drain hose can be installed to the right of the base pan.

1 Unscrew the 4 tapped screws to remove the cover of the drain hose connection port.



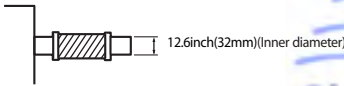
2 Insert the flexible hose to the drain hose port.

Note Fix the flexible hose to the indoor unit with the supplied cable clamp securely. (Use the screwdriver to fix the flexible hose securely.)



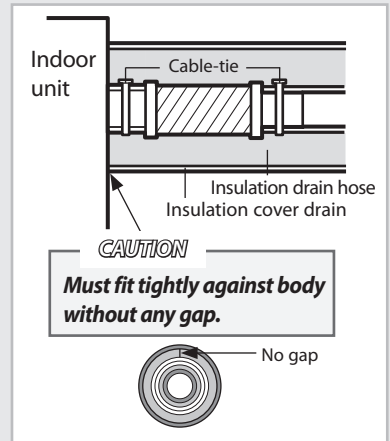
3 Install the drain hose so that its length can be as short as possible. Internal diameter of the drain hose should be the same or slightly bigger than the external diameter of the drain hose port.

◆ Inner diameter of the drain hose



Note

- ◆ Give a slightly slant to the drain hose for proper drainage of condensate.
- ◆ Fix the flexible hose to the PVC with the supplied cable tie securely.



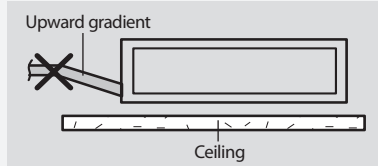
4 Wrap the drain hose with the insulation drain as shown in figure and secure it.

Drain hose installation (Continued)

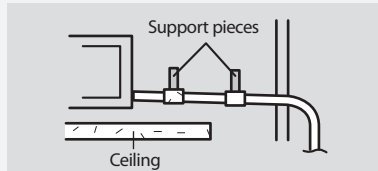
CAUTION

When not installing the drain pump

Do not give the hose upward gradient after the connection port. This will cause water to flow backwards when the unit is stopped, resulting in water leaks.



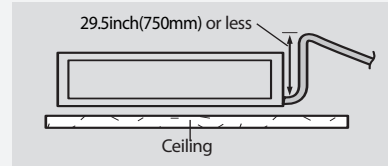
Do not apply force to the piping on the unit side when connecting the drain hose. The hose should not be allowed to hang loose from its connection to the unit. Fasten the hose to a wall, frame or other support as close to the unit as possible.



When installing the drain pump

The maximum height of drain pump hose is 29.5inch(750mm) or less.

If it is raised higher than 29.5inch(750mm), there can be water leaks.

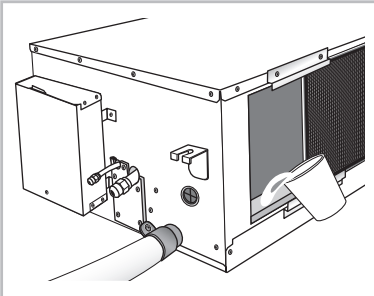


Testing the drainage

Prepare a little water about 1.32 gallon(5 liter).

1 Pour water into the base pan in the indoor unit as shown in figure.

2 Confirm that the water flows out through the drain hose.



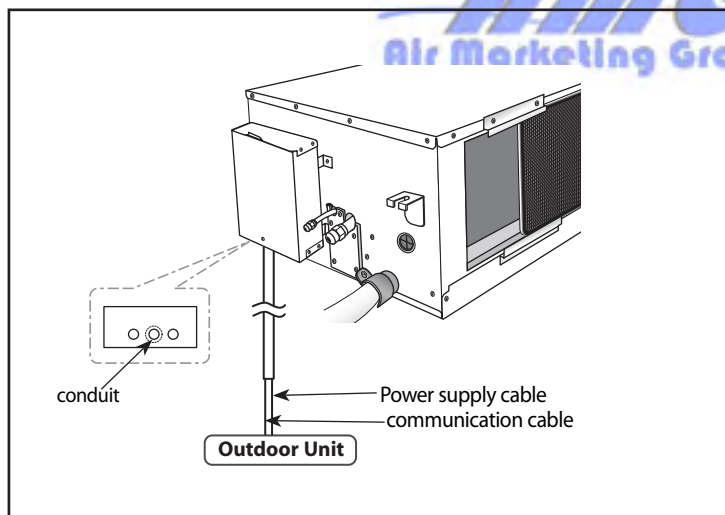
Connecting the connection cord

CAUTION

- ◆ Always remember to connect the refrigerant pipes before performing the electric connections. When disconnecting the system, always disconnect the electric cables before disconnecting the refrigerant pipes.
- ◆ Always remember to connect the air conditioner to the grounding system before performing the electric connections.

The indoor unit is powered by the outdoor unit by means of a H07 RN-F connection cable (or a more power model), with insulation in synthetic rubber and jacket in polychloroprene(neoprene), in accordance with the requirements of standard EN 60335-2-40.

- 1 Remove the screw on the electrical component box and remove the cover plate.
- 2 Route the connection cord through the side of the indoor unit and connect the cable to terminals; refer to the figure below.
- 3 Route the other end of the cable to the outdoor unit through the ceiling & the hole on the wall.
- 4 Reassemble the electrical component box cover, carefully tightening the screw.
- 5 Be sure to run the power supply cable and the communication cable through electronic conduit as seen in below picture.

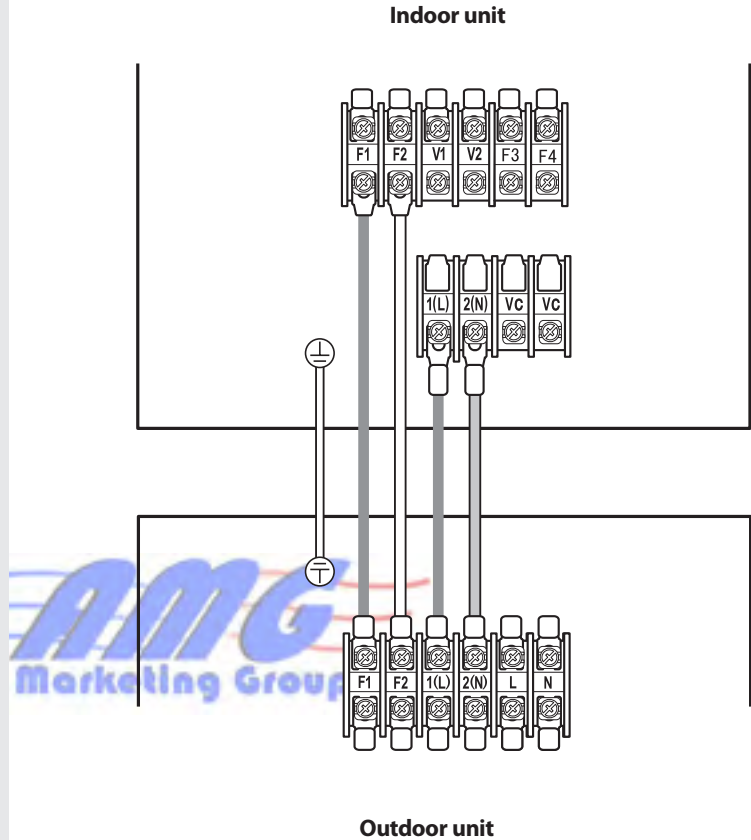


Connecting the connection cord (Continued)

Wiring diagram

DH105/140CAV

When using 1 phase



Between Indoor and Outdoor Connection Cord Specifications

Power Supply (Single Phase)			Earth Cable	Communication Cable	Home server
Power Supply	Max/Min(V)	Connection Wire			
208-230V~/60Hz	±10%	1.25mm ²	Ø 1.6mm, 1 wire	0.75~1.25mm ² 2 wires	0.75~1.25mm ² 2 wires

* For connection cord, use the grade H07RN-F or H05RN-F materials.

* Screws on terminal block must not be unscrewed with the torque less than 0.87ft.lb(0.12kgf·m)

Adjusting air flow

E. S. P(External Static Pressure) setting for phase control motor

With its phase control motor, you can adjust the indoor unit fan speed depending on the installation condition. If the external static pressure is high so that the duct becomes longer or if the external static pressure is low so that the duct becomes shorter, adjust the fan speed by referring the following table. Refer to the page 18 to set the option code.

Static Pressure	DH140CAV	DH105CAV
	Option Code	Option Code
12mmAq	016774-13C2FF-200001-300000	015774-11C2DD-200001-300000
10mmAq	016774-13C2CC-200001-300000	015774-11C28A-200001-300000
8mmAq	016774-13C2AA-200001-300000	015774-11C248-200001-300000
6mmAq	016774-13C286-200001-300000	015774-11C224-200001-300000
4mmAq	016774-13C264-200001-300000	015774-11C0F1-200001-300000
2mmAq	016774-13C240-200001-300000	015774-11C0E0-200001-300000
0mmAq	016773-13C32E-200001-300000	015773-11C1CE-200001-300000


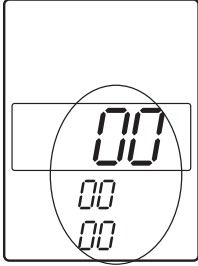

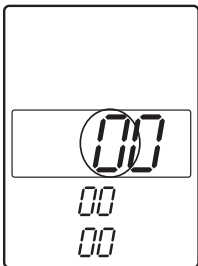
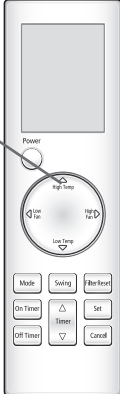
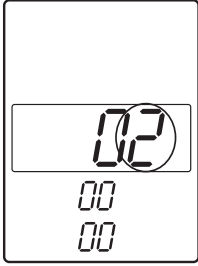
Note

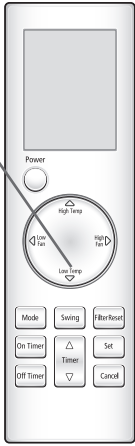
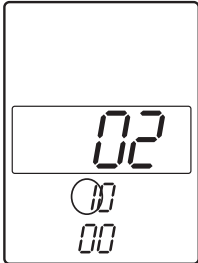
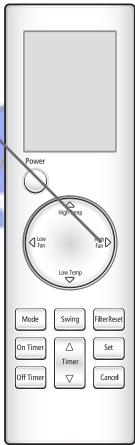
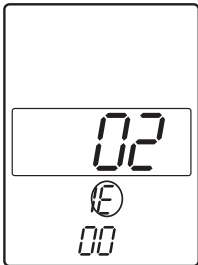

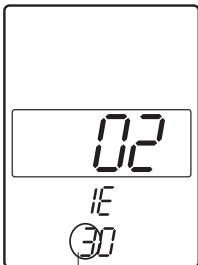
- ◆ represents E. S. P(External Static Pressure) range of factory setting. You don't have to adjust the fan speed separately if the external static pressure of the installation place is in . When it is out of , input the appropriate option code.
- ◆ If you input the inappropriate option code, error may occur or the air conditioner is out of order. The option code must be inputted correctly by the installation specialist or service agent.

Setting up the mode option

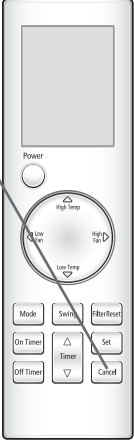
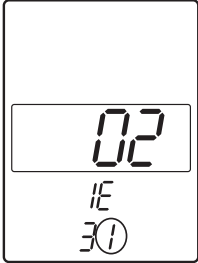

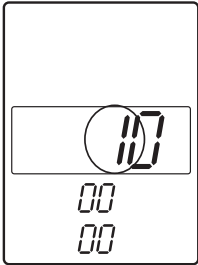
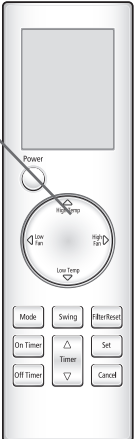
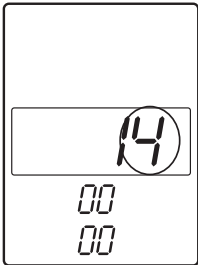
Be sure to input the option code suitable for the indoor unit by use of wireless remote controller after replacing the PCB of indoor unit. Follow to do the following 27 steps sequentially.

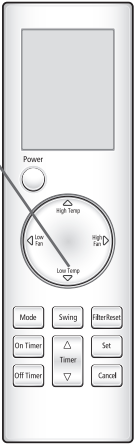
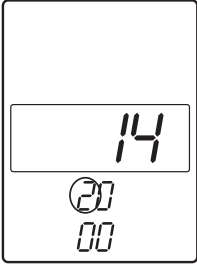
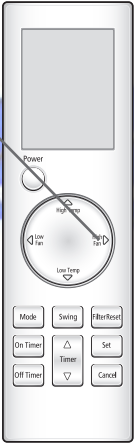
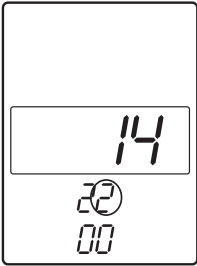

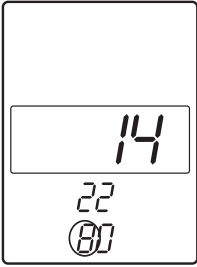
Example : 021E31-142285-2A3114-39421F

Operation method	Applicable button	Indicating state
<p>※ Step 1 <u>Method)</u> ① Remove the battery of remote controller. ② Push the Off Timer and Cancel button simultaneously. ③ Insert the battery.</p> <p><u>Result)</u> When the display of remote controller is indicated as shown in the right, then go to the step 2.</p>		
<p>※ Step 2 <u>Method)</u> If the first digit of remote controller shows "0", go to the step 3. If it shows 1, press the Mode button one time to change it into 0 and then go to step 3.</p>		
<p>※ Step 3 <u>Method)</u> Input the second digit of option code by pressing the High Temp button. example) 021E311422852A311439421F</p> <p><u>Result)</u> If 2 is displayed, go to the step 4 (whenever pressing the button, 1~9, A,B,C,D,E,F are lit in order.)</p>		

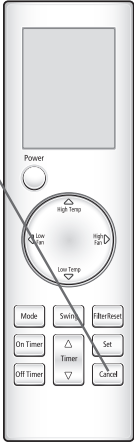
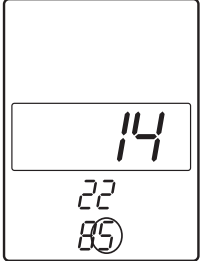

Operation method	Applicable button	Indicating state
<p>*Step 4</p> <p><u>Method)</u> Input the third digit of option code by pressing the Low Temp button. example) 021E311422852A311439421F</p> <p><u>Result)</u> If 1 is displayed, go to the step 5.</p>		
<p>* Step 5</p> <p><u>Method)</u> Input the fourth digit of option code by pressing the High Fan button. example) 021E311422852A311439421F</p> <p><u>Result)</u> If E displays, go to step 6.</p>		
<p>* Step 6</p> <p><u>Method)</u> Input the fifth digit of option code by pressing the On Timer button. example) 021E311422852A311439421F</p> <p><u>Result)</u> If 3 displays, go to step 7.</p>		 <p style="text-align: center;">SEGS</p>

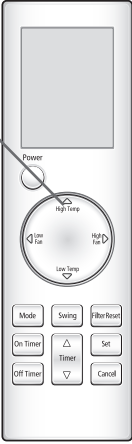
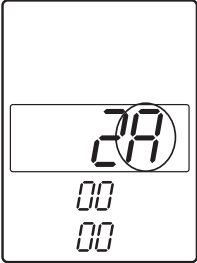
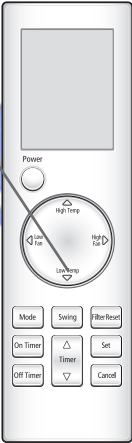

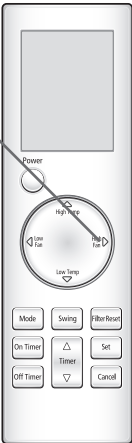
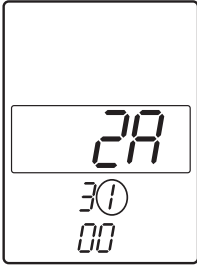
Setting up the mode option (Continued)

Operation method	Applicable button	Indicating state
<p>※ Step 7</p> <p><u>Method)</u> Input the sixth digit by pressing the Cancel button. _____ example) 021E311422852A311439421F</p> <p><u>Result)</u> If 1 displays, go to step 8.</p>		
<p>※ Step 8</p> <p><u>Method)</u> After completion up to step 7, pressing Mode button. _____</p> <p>① 1~7 steps are saved internally. ② If the first number is 1 at the time, it is correct. So go to step 9.</p> <p>If wanting to see the screen of 2~7 steps, press the mode button repeatedly to make the first digit 0.</p>		
<p>※ Step 9</p> <p><u>Method)</u> Input the eighth digit by pressing the High Temp button. _____ example) 021E311422852A311439421F</p> <p><u>Result)</u> If 4 displays, go to step 10.</p>		


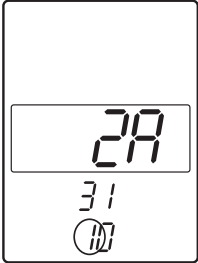
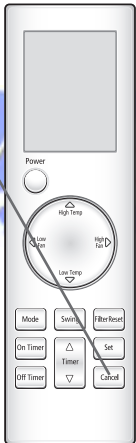
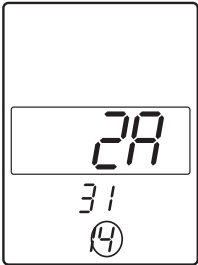

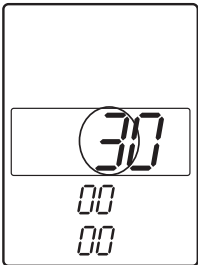
Operation method	Applicable button	Indicating state
<p>*Step 10 <u>Method)</u> Input the ninth digit by pressing the Low Temp button. _____ example) 021E31142<u>2</u>852A311439421F</p> <p><u>Result)</u> If 2 displays, go to step 11.</p>		
<p>*Step 11 <u>Method)</u> Input the tenth digit by pressing the High Fan button. _____ example) 021E31142<u>2</u>852A311439421F</p> <p><u>Result)</u> If 2 displays, go to step 12.</p>		
<p>*Step 12 <u>Method)</u> Input the 11st digit by pressing the On Timer button. _____ example) 021E311422<u>8</u>52A311439421F</p> <p><u>Result)</u> If 8 displays, go to step 13.</p>		

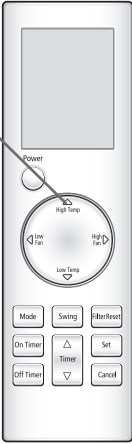
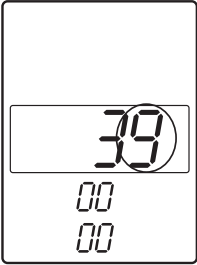
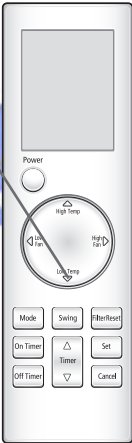
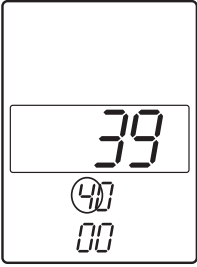
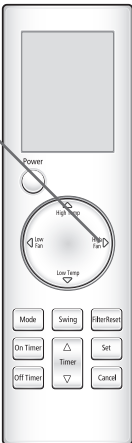
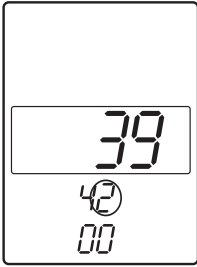
Setting up the mode option (Continued)

Operation method	Applicable button	Indicating state
<p>※ Step 13</p> <p><u>Method)</u> Input the 12th digit by pressing the Cancel button. example) 021E311422852A311439421F</p> <p><u>Result)</u> If 5 displays, go to step 14.</p>		
<p>※ Step 14</p> <p><u>Method)</u> After completion up to step 13, pressing Mode button.</p> <p>① Previous steps are saved internally.</p> <p>② If the first number is 2 at the time, it is correct. So go to step 15.</p> <p>If wanting to see previous screen, press the mode button repeatedly to make the first digit to with digit.</p>		<p>■ Error</p> <p>① If the On/Off, Timer and Fan indicator is flickering, the wrong option code is input. Put off the power of indoor unit and turn it on again and then input the option code again. If the same error occurs, it is the EEPROM is defective or not inserted. Replace the PCB.</p> <p>② If all of On/Off, Timer, Fan and Filter Sign indicator are flickering along with the "Tiring" sound, there is option code already input which are different from the current ones. Check the option code and press the button again if correct. Option code will be input.(Check the option code correctly. At the time, if the same error continues to occur, the option code is out of input range. Check the option code again and repeat the step 1~14.</p>



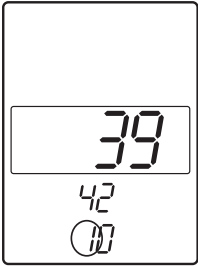

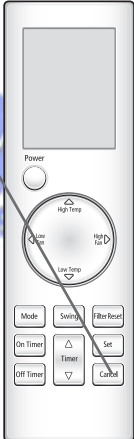
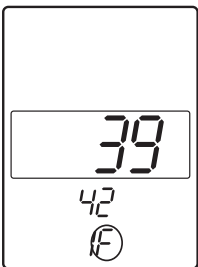

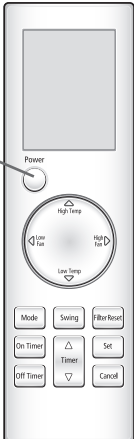
Operation method	Applicable button	Indicating state
<p>* Step 15 <u>Method)</u> Input the 14th digit by pressing the High Temp button. example) 021E311422852A311439421F</p> <p><u>Result)</u> If A displays, go to step 16.</p>		
<p>* Step 16 <u>Method)</u> Input the 15th digit by pressing the Low Temp button. example) 021E311422852A311439421F</p> <p><u>Result)</u> If 3 displays, go to step 17.</p>		
<p>* Step 17 <u>Method)</u> Input the 16th digit by pressing the High Fan button. example) 021E311422852A311439421F</p> <p><u>Result)</u> If 1 displays, go to step 18.</p>		

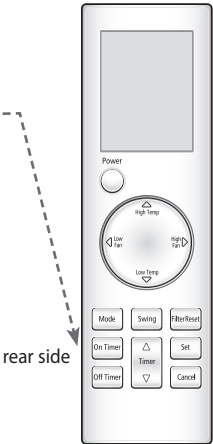
Setting up the mode option (Continued)

Operation method	Applicable button	Indicating state
<p>※ Step 18 <u>Method)</u> Input the 17th digit by pressing the On Timer button. example) 021E311422852A311439421F</p> <p><u>Result)</u> If 1 displays, go to step 19.</p>		
<p>❖ Step 19 <u>Method)</u> Input the 18th digit by pressing the Cancel button. example) 021E311422852A311439421F</p> <p><u>Result)</u> If 4 displays, go to step 20.</p>		
<p>※ Step 20 <u>Method)</u> After completion up to step 20, pressing Mode button.</p> <p>① Previous steps are saved internally. ② If the first number is 3 of the time, it is correct. so go to step 22.</p> <p>If wanting to see previous screen, press the mode button repeatedly to make the first digit to with digit.</p>		

Operation method	Applicable button	Indicating state
<p>※ Step 21 <u>Method)</u> Input the 20th digit by pressing the High Temp button. example) 021E311422852A31143<u>9</u>421F</p> <p><u>Result)</u> If 9 displays, go to step 22.</p>		
<p>※ Step 22 <u>Method)</u> Input the 21th digit by pressing the Low Temp button. example) 021E311422852A311439<u>4</u>21F</p> <p><u>Result)</u> If 4 displays, go to step 23.</p>		
<p>❖ Step 23 <u>Method)</u> Input the 22th digit by pressing the High Fan button. example) 021E311422852A3114394<u>2</u>1F</p> <p><u>Result)</u> If 2 displays, go to step 24.</p>		

Setting up the mode option (Continued)

Operation method	Applicable button	Indicating state
<p>※ Step 24</p> <p><u>Method</u></p> <p>Input the 23th digit by pressing the On Timer button. </p> <p>example) 021E311422852A311439421F</p> <p><u>Result</u></p> <p>If 1 displays, go to step 25.</p>		
<p>※ Step 25</p> <p><u>Method</u></p> <p>Input the 24th digit by pressing the Cancel button. </p> <p>example) 021E311422852A311439421F</p> <p><u>Result</u></p> <p>If F displays, go to step 26.</p>		
<p>※ Step 26</p> <p><u>Method</u></p> <p>Turn the remote controller toward the indoor unit and press the Power button, and if the "Ting" or "Tiring" sounds, the input of option is completed. </p> <p>If error displays, solve the problem with reference to the right side.</p>		<p>■ Error</p> <p>① If the On/Off, Timer and Fan indicator is flickering, the wrong option code is input. Put off the power of indoor unit and turn it on again and then input the option code again.</p> <p>If the same error occurs, it is the EEPROM is defective or not inserted. Replace the PCB.</p> <p>② If all of On/Off, Timer, Fan and Filter Sign indicator are flickering along with the "Tiring" sound, there is option code already input which are different from the current ones.</p> <p>Check the option code and press the button again if correct. Option code will be input.(Check the option code correctly. At the time, if the same error continues to occur, the option code is out of input range. Check the option code again and repeat the step 1~26.</p>

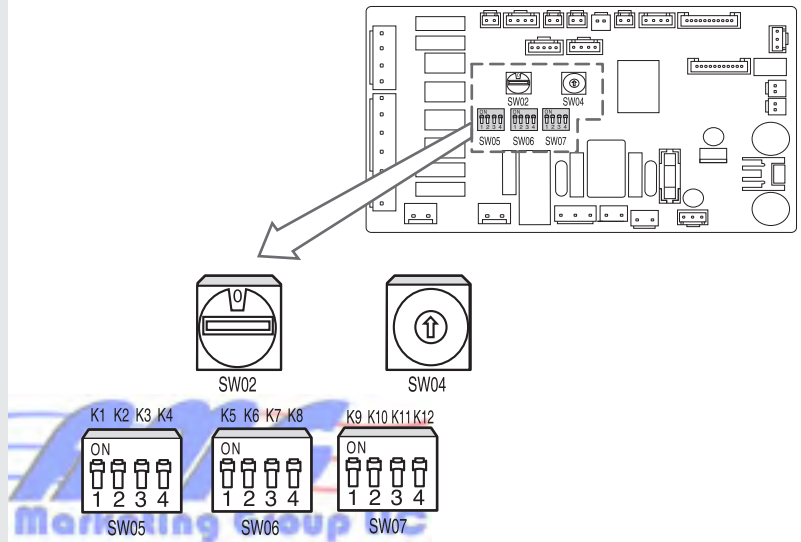
Operation method	Applicable button	Indicating state
<p>※ Step 27 Method) If the steps 1 to 26 are completed, remove the battery and insert it again to return to the original display of remote controller. (Operation mode/SET TEMP. /fan speed displays.)</p>		<p>■ Error</p> <p>① If the On/Off, Timer and Fan indicator is flickering, the wrong option code is input. Put off the power of indoor unit and turn it on again and then input the option code again. If the same error occurs, it is the EEPROM is defective or not inserted. Replace the PCB.</p> <p>② If all of On/Off, Timer, Fan and Filter Sign indicator are flickering along with the "Tirring" sound, there is option code already input which are different from the current ones. Check the option code and press the button again if correct. Option code will be input.(Check the option code correctly. At the time, if the same error continues to occur, the option code is out of input range. Check the option code again and repeat the step 1~26.</p>

Option items

Model	Option Code
DH105CAV	015774-11C248-200001-300000
DH140CAV	016774-13C2AA-200001-300000

Assigning address to indoor unit

- 1 Before installing the indoor unit, assign an address to the indoor unit according to the air conditioning system plan.
- 2 The address of the indoor unit is assigned by adjusting MAIN(SW02) and RMC(SW04) rotary switches.



- 3 It is required to set the RMC address if you install the wired remote control and/or the centralized control.
- 4 If you install optional accessories such as the wired remote control, centralized control, etc. see an appropriate installation manual.
- 5 If an optional accessory is not installed, you do not have to set the RMC address. However, adjust K1 and K2 switches of the SW05 DIP switch to "ON" position in this case.

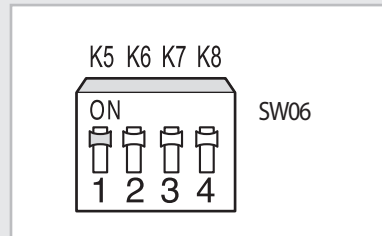
Additional functions

Compensation for lost temperature in heating operation

- ◆ Reduces the difference between an actual room temperature and a sensed temperature by the air conditioner when heating.

Switch No.	Switch ON	Switch OFF
K5	3.6 °F compensation	9°F compensation

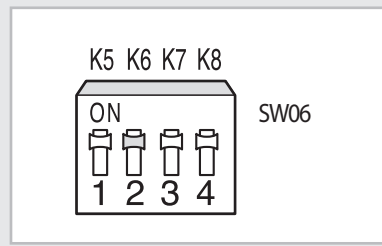
* Only for DH140CAV model.



Adjusting filter cleaning cycle

- ◆ You can adjust the cycle for filter sign indicator.

Switch No.	Switch ON	Switch OFF
K6	1000 hours	2000 hours

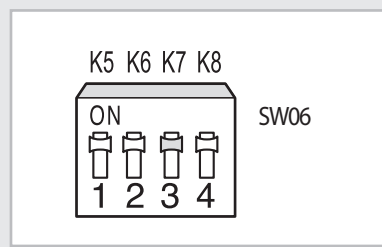


Hot water heater

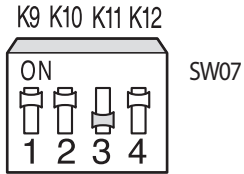
- ◆ You must adjust the K7 when you install the hot water heater.

Switch No.	Switch ON	Switch OFF
K7	No use of hot water heater	Use of hot water heater

* Only for DH140CAV model.



Additional functions (Continued)



External control

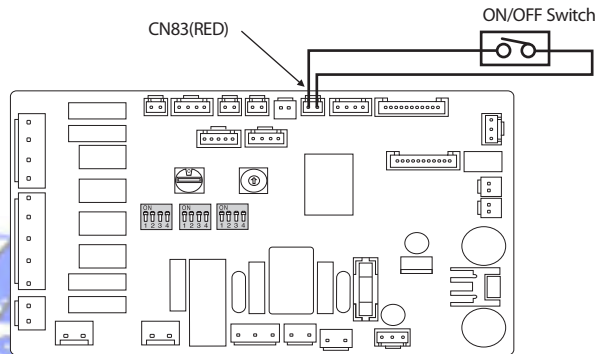
- You must adjust the K11 when you use external control.

Switch No.	Switch ON	Switch OFF
K11	No use of external control	Use of external control

- You can use external control when the K11 switch is turned off.

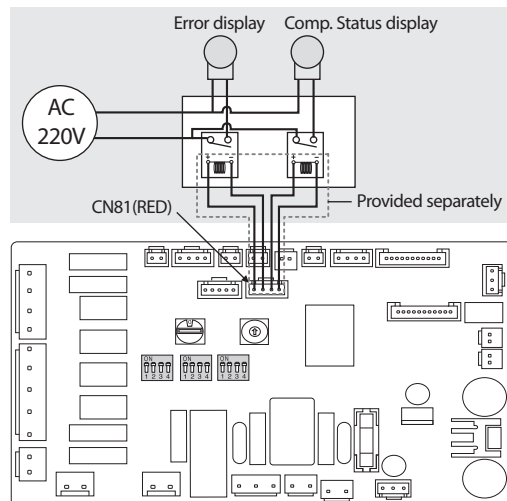
Operation ON/OFF Function

Connector No.	SHORT	OPEN
CN83(RED)	Operation ON	Operation OFF



Operation State Display

Connector No.	Function
PIN #1 and #2 of CN81(RED)	+12V Out if any error occurs
PIN #3 and #4 of CN81(RED)	+12V Out when the compressor is operating



Filter Replacement (Optional)

Installation Method

The shape and installation method are subject to change according to the models.

- 1 When air enters back side
Fix the indoor unit support to the top of the air inlet with screws.

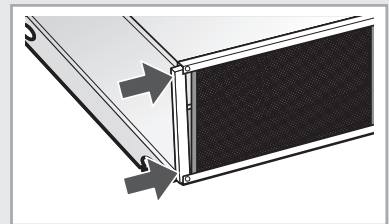
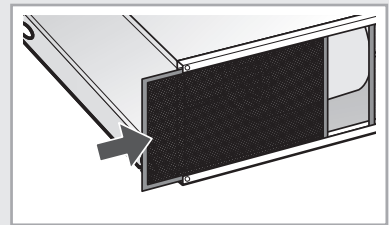
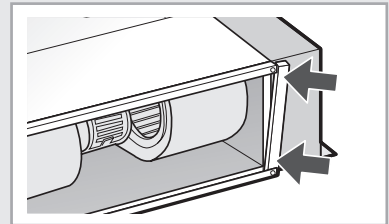
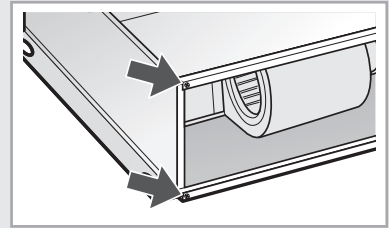
When air enters bottom side
Fix the cover to the back of the product with screws.

- 2 Put pads on the support.

- 3 Put the indoor unit on the support.








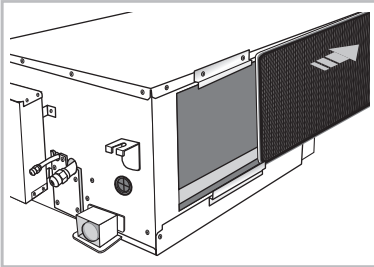
- 4 Insert another pad between the indoor unit and the support.



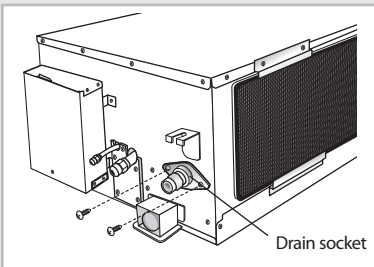
Drain pump installation (Optional)

Accessories

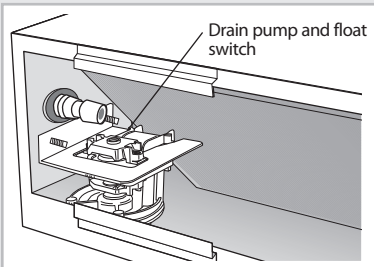
Drain pump and float switch(1)	M4 X 12 tapped screw (4)	Cable-tie (3)	Insulation drain (2)	Drain hose (1)
				



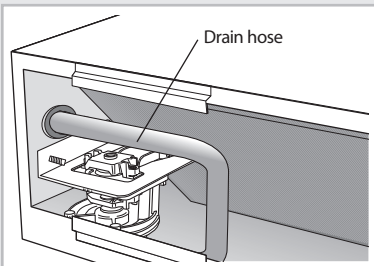
- 1 Remove the air filter.



- 2 Assemble the drain socket as seen in the picture after removing the rubber cap.



- 3 Assemble the float switch with the drain pump.



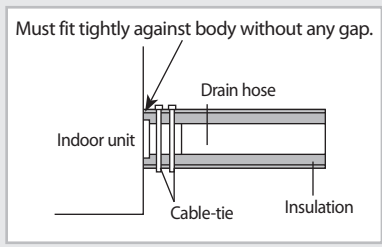
- 4 Connect the drain hose.

Note

Attach the drain hose tightly with the cable tie or a bonding agent so that it does not get removed or water does not drain.

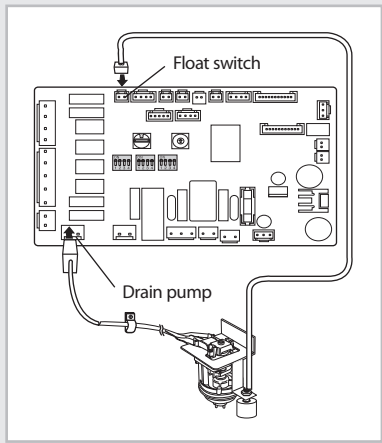
5 Insert the flexible hose into the drain socket until it clicks.

- Note*
- ◆ Check if water does not drain.
 - ◆ Insulate the drain hose so that frost does not form.



6 Connect the cable to the electrical component box as shown at the figure.

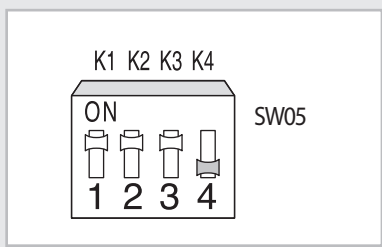
- Note* Connect the drain pump cable to yellow terminal(CN74) and the float switch to black terminal(CN51).



7 Adjust K4 DIP switch(SW05) to the "OFF" position.

Switch No.	Switch Position	Using Drain Pump
K4	ON	X
	OFF	O

- Note* Wrap the drain tube outlet on the right and left side of the indoor unit with an insulating materials.



Technical Specification & Product feature

Model	DH105CAV	DH140CAV
Capacity(Cooling and Heating)	36000/38200 Btu/h	48000/54600 Btu/h
Power Input	0.39kw	0.61kw
Running Current	1.77A	2.85A
Refrigerant	98.7 oz	98.7 oz

- * Maximum installation height: up to 11.8ft(3.6m)
- * Condensate discharge pump(built-in): Max. 2.46ft(0.75m)
- * Length of pipes and difference in height: see the outdoor unit installation manual
- * Vacuum and refrigerant charge: see the outdoor unit installation manual























Troubleshooting

■ Detection of errors

- ◆ If an error occurs during the operation, one or more LED flickers and the operation is stopped except the LED.
- ◆ If you re-operate the air conditioner, it operates normally at first, then detect an error again.

LED Display on the receiver & display unit

■ LED Display

Abnormal conditions	Indicators					Remarks
	Concealed Type					
	Green	Red				
	Standard Type					
						
Power reset		X	X	X	X	
Error of temperature sensor in the indoor unit (Open/Short)	X	X		X	X	
Error of heat exchanger sensor in the indoor unit		X		X	X	
Error of the outdoor temperature sensor		X	X		X	
Error of the condensor temperature sensor		X	X		X	
Error of the discharge temperature sensor		X	X		X	
1. No communication for 2 minutes between indoor units (Communication error for more than 2 minutes)						1. Indoor unit error (Display is unrelated with operation) 2. Outdoor unit error (Display is unrelated with operation)
2. Indoor unit receiving the communication error from outdoor unit						
3. Outdoor unit tracking 3 minutes error	X	X			X	
4. When sending the communication error from the outdoor unit, the mismatching of the communication numbers and installed numbers after completion of tracking. (Communication error for more than 2 minutes)						

● On ◐ Flickering X Off

- ◆ If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

Troubleshooting (Continued)


LED Display

Abnormal conditions	Indicators					Remarks
	Concealed Type		⏻	🌀	📅	
	Green	Red				
	Standard Type		⏻	🌀	📅	
	⏻	🌀				
Communication error between indoor units	●	X	X	X	●	
1. Error of electronic expansion valve close 2. Error of electronic expansion valve open 3. 2 nd detection of high temperature cond 4. 2 nd detection of high temperature discharge 5. Error of reverse phase 6. Compressor down due to 6 th detection of freezing	X	X	●	●	●	
Detection of the float switch	X	X	●	●	●	
Error of setting option switches for optional accessories	X	X	●	X	●	
EEPROM error	●	X	●	●	X	
EEPROM option error	●	●	●	●	●	

● On ● Flickering X Off

◆ If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

Wired remote control

- ◆ If an error occurs,  is displayed on the wired remote control. If you would like to see an error code, press the Test button.

Outdoor unit

Display	Explanation	Remark
801	Indoor unit Communication Error	Communication Error
802	Indoor/Outdoor unit Communication Time Out Error 60 Packet Over data	
201	Indoor unit is not connected	
203	Communication Error between Outdoor Main and Inverter Micom (Occurred after 1 minute detection in Main and Inverter)	Indoor Sensor Error
821	Indoor Temp. Sensor (Open/Short Error)	
822	Indoor Unit Eva in Sensor (Open/Short Error)	
828	Indoor Unit Eva in Sensor Separation	Outdoor Sensor Error
221	Outdoor Temp. Sensor Error (Open/Short Error)	
230	COND Temp. Sensor Error (Open/Short Error)	
251	Inverter Compressor Discharge Temp. sensor Error (Open/Short Error)	Self Diagnosys Error
425	Power cable miss connection error	
853	Indoor Float S/W 2 nd Detection	
460	Outdoor unit - indoor unit communication wire miss connection (Connected to Power terminal)	Outdoor Unit Protection Control Error
554	Outdoor unit refrigerant Full leakage (Gas leak)	
458	Outdoor Fan 1 Error	
475	Outdoor Fan 2 Error	Wired Remote Control Error
476	Discharge over temperature	
461	[Inverter] Compressor starting error	
462	Primary Current Over Trip error	Error of setting option for wired remote control COM2
464	[Inverter] DC PEAK error(O.C)	
467	[Inverter] Compressor Rotation error	
468	[Inverter] Current Sensor error	Error of setting option for wired remote control COM2
469	[Inverter] DC LINK Sensor error	
471	[Inverter] EEPROM Read/Write Error	
474	[Inverter] Heatsink temperature over Error	Error of setting option for wired remote control COM2
556	Outdoor unit Capacity Setup option error	
601	Communication error between Indoor unit and wired remote control	
602	Communication error between Master and Slave wired remote control	Error of setting option for wired remote control COM2
606	COM1/COM2 Cross-installed error	
EA	Error of setting option for wired remote control COM2	

Additional accessories







For information on additional options and accessories, see either product catalogue or accessories installation and operation manual.

Receiver & display unit accessories

Concealed type

◆ Receiver & display unit








◆ Wire kit

Receiver & display unit	STS 2S-2x10 tapped screw	2S-4x12 tapped screw	User's manual	Installation manual	Wire kit (length 10m)
1	4	2	1	1	1
					







Standard type

◆ Receiver & display unit







◆ Wire kit

Receiver & display unit	M4x16 tapped screw	Cable-tie	Cable clamp	User's manual	Installation manual	Wire kit (length 10m)
1	7	2	5	1	1	1
						




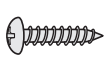


Wireless remote control accessories

Wireless remote control	Battery	Remote control holder	M4x12 tapped screw	User's manual	Installation manual
1	2	1	2	1	1
					

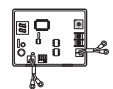



Centralized control accessories

Centralized control	Cable-tie	Cable clamp	M4x16 tapped screw	User's manual	Installation manual
1	2	5	7	1	1
					

Function control accessories







Function control	Cable-tie	Cable clamp	M4x16 tapped screw	User's manual	Installation manual
1	2	6	7	1	1
					

Transmitter accessories

Transmitter	Transmitter power cable	Transmitter communication cable	Installation manual
1	1	1	1
			

Note If you would like to install the centralized control, you must install the transmitter in the outdoor unit.

Wired remote control accessories

Wired remote control	Cable-tie	Cable clamp	M4x16 tapped screw	User's manual	Installation manual
					
Indoor unit power drawing cable	Communication cable of the wired remote control	Communication and power cable			
