# SPLIT TYPE AIR CONDITIONER **Duct Type INSTALLATION INSTRUCTION**

(PART NO. 9372633021)

For authorized service personnel only.

	∆ WARNING
0	For the air conditioner to operate satisfactorily, install it as outlined in this installation instruction sheet.
0	Connect the indoor unit and outdoor unit with the room air conditioner piping and cords available from our standard parts. This installation instruction sheet describes the correct connections using the installation set available from our standard parts.
0	Installation work must be performed in accordance with national wiring standards by authorized personnel only.
(1)	If refrigerant leaks while work is being carried out, ventilate the area.  If the refrigerant comes in contact with a flame, it produces a toxic gas.

OUTDOOR UNIT ACCESSORIES (H)

### STANDARD PARTS

INDOOR UNIT ACCESSORIES

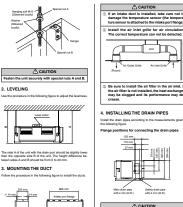
Name and Shape	Q'ty	Application	Name and Shape
Special rut A (large flange)	4	For suspending the indoor unit from ceiling	Power cap (B)
Special rut B (small flange)	4		Auxiliary pipe assembly
Coupler heat insulation (large)	1	For indoor side pipe joint (large pipe)	Edge cover
Coupler heat insulation (small)	1	For indoor side pipe joint (small pipe)	Tapping screw
Binder (small)	1	For fixing the remote controller cord	Quinting .
Remote controller	1		Putty 🔾
Tapping screw (flush heads)	2	For installing the remote controller	Coupler heat insulation
Remote controller cord		For connecting the remote controller	Pipe (drain)
~	1		Flexible tube
ODTIONS			Cap (drain)

- SELECTING THE MOUNTING POSITION

<u> </u>									
Select installation locations that can properly support the weight of the indoor and outdoor units. Install th units securely so that they do not topple or fall.									









3 CONNECTING THE PIPING

When bending the pipe, do not bend it as is. The pipe will be collapsed. In this case, cut the heat insulating pipe with a sharp if cutter as shown in the figure, and is bend it after exposing the pipe. After bending the pipe as you want, be sure to put the heat insulating pipe back on the minimulating pipe and pipe and pipe back on the minimulating pipe and pipe and



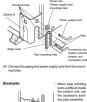




OUTDOOR UNIT











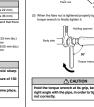




### ELECTRICAL REQUIREMENT

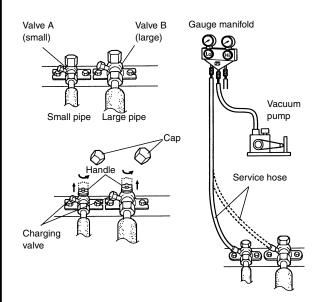
Power suppl	y cord (mm²)	Connection	cord (mm²)	Breaker capacity (A)
MAX.	MIN.	MAX.	MIN.	Division Capacity (A)
4.0	2.5	2.5	1.0	20

CONNECTION PIPE REQUIREMENT

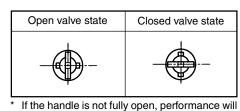


# 1. VACUUM

- (1) Vacuum inside the indoor unit and the piping to a pressure of 76 cmHg abs or less from the charging valve with a vacuum pump.
- (2) After vacuuming inside the indoor unit and the piping, remove the cap of the two valves.



(3) Open the handle of the two valves from the closed state.



drop and an abnormal sound will be generated.

(4) Tighten the cap of the two valves to the specified torque.

	Tightenir	ig torque			
	Large valve	Small valve			
Handle	1.47 N·m (15 kgf·cm) or less				
Сар	14.7 to 19.6 N·m (150 to 200 kgf·cm)				

## 2. ADDITIONAL CHARGE

Refrigerant suitable for a piping length of 7.5 m (Cooling model), 20 m (Reverse cycle model) is charged in the outdoor unit at

When the piping is longer than 7.5 m (Cooling model), 20 m (Reverse cycle model) additional charging is necessary. For the additional amount, see the table below

Pipe length Additional refrigerant	7.5 m	10 m	20 m	g/m
Cooling model	None	100 g	500 g	40 g/m
Reverse cycle model		None		60 g/m
Pipe length				

Pipe length Additional refrigerant	30 m	40 m	50 m	g/m
Cooling model	900 g	1300 g	1700 g	40 g/m
Reverse cycle model	600 g	1200 g	1800 g	60 g/m

## **∴** CAUTION

- When moving and installing the air conditioner, do not mix gas other than the specified refrigerant (R22) inside the refrigerant cycle.
- When adding refrigerant, add the refrigerant from the charging valve at the completion of work.
- If the units are further apart than the maximum pipe length, correct operation can not be guaranteed

# **POWER**

**⚠** WARNING The rated voltage of this product is 380-415 V 3ø 50 Hz.

# Before turning on verify that the voltage is within the 342 to 457 V range.

- Always use a special branch circuit and install a special receptacle to supply power to the air
- Use a special branch circuit breaker and receptacle matched to the capacity of the air condi-(Install in accordance with standard.)
- Perform wiring work in accordance with standards so that the air conditioner can be operated safely and positively. Install a leakage special branch circuit breaker
- in accordance with the related laws and regulations and electric company standards.

### **CAUTION**

- The power source capacity must be the sum of the air conditioner current and the current of other electrical appliances. When the current contracted capacity is insufficient, change the contracted capacity.
- When the voltage is low and the air conditione is difficult to start, contact the power company the voltage raised.

# **ELECTRICAL WIRING**

	<u>∴</u> WARINING						
1	Before starting work, check that power is not being supplied to the indoor and outdoor unit.						
2	Match the terminal board numbers and connec-						

Erroneous wiring may cause burning of the elec-

**↑ WARNING** 

- Connect the connection cord firmly to the termi nal board. Imperfect installation may cause a fire.
- Always fasten the outside covering of the connection cord with the cord clamp. (If the insulator is chafed, electric leakage may occur.)
- Always connect the ground wire.

# **CAUTION**

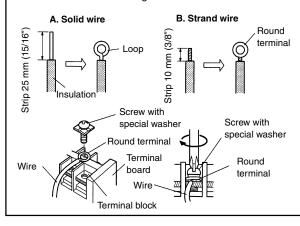
Do not bundle the remote controller cord, or wire the remote controller cord in parallel, with the indoor unit connection wire (to the outdoor unit) and the power supply cord. It may cause erroneous operation.

# **HOW TO CONNECT WIRING** TO THE TERMINALS

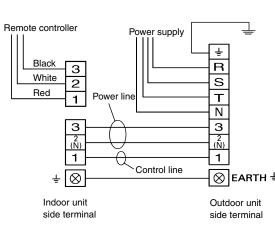
- A. For solid core wiring (or F-cable) (1) Cut the wire end with a wire cutter or wire-cutting pliers,
- then strip the insulation to about 25 mm (15/16") to ex pose the solid wire. (2) Using a screwdriver, remove the terminal screw(s) on the
- terminal board. (3) Using pliers, bend the solid wire to form a loop suitable for
- the terminal screw. 4) Shape the loop wire properly, place it on the terminal board and tighten securely with the terminal screw using a screw-

### B. For strand wiring

- 1) Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 10 mm (3/8") to expose the strand wiring.
- (2) Using a screwdriver, remove the terminal screw(s) on the terminal board.
- (3) Using a round terminal fastener or pliers, securely clamp a round terminal to each stripped wire end. (4) Position the round terminal wire, and replace and tighter the terminal screw using a screwdriver.

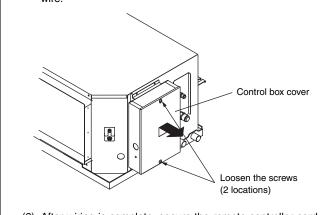


### 1. CONNECTIONS DIAGRAMS

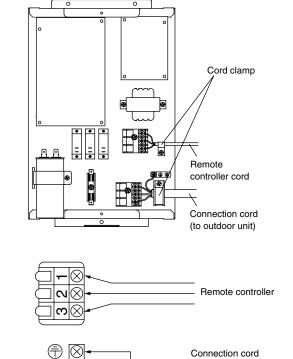


# 2. INDOOR UNIT

(1) Remove the control box cover and install each connection



(2) After wiring is complete, secure the remote controller cord, connection cord, and power supply cord with the cord clamps. (3) Install the control box cover.





Outdoor unit

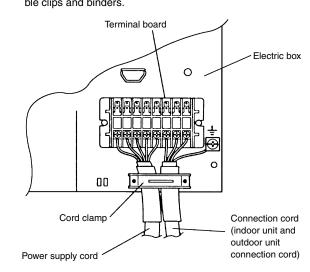
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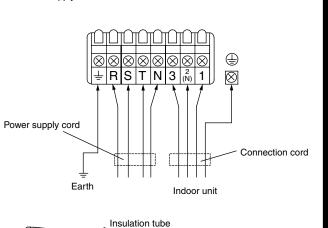
② Install so that the wires for the remote controller will not come in contact with other connection wires.

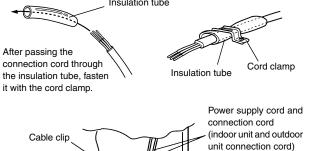
and connection wires when installing.

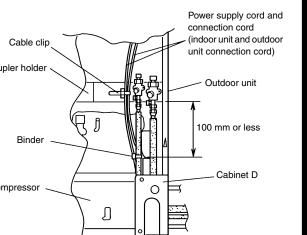
### 3. OUTDOOR UNIT

- (1) Remove outdoor unit cabinet A and connect the power supply cord and the outdoor unit connection cord wired at the
- (2) Fasten the power supply cord and connection cord with cable clips and binders.









**Error contents** 

Outdoor temperature sensor open

# **SPECIAL INSTALLATION METHODS**

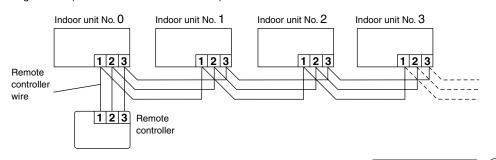
**⚠** CAUTION When setting the rotary switch and DIP switches, do not touch any other parts on the circuit board directly with your bare hands.

② Be sure to turn off the main power.

### 1. GROUP CONTROL SYSTEM

A number of indoor units can be operated at the same time using a single remote controller

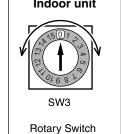
(1) Wiring method (indoor unit to remote controller)

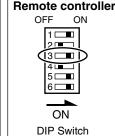


(2) Rotary switch setting (indoor unit) Set the unit number of each indoor unit using the rotary switch on the indoor unit circuit board.

The rotary switch is normally set to 0

(3) DIP switch setting (remote controller) Change DIP switch No. 3 on the remote controller from OFF to ON.

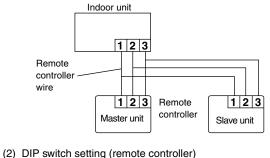




## 2. DUAL REMOTE CONTROLLERS (OPTIONAL)

Two separate remote controllers can be used to operate the indoor units

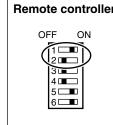
(1) Wiring method (indoor unit to remote controller)



Set the remote controller DIP switch Nos. 1 and 2 according to the following table.

Change the DIP switch (SW2-3) on the indoor unit circuit board from OFF to ON.

Slave unit DIP-SW No. 1 DIP-SW No. 2 DIP-SW No. 1 DIP-SW No. 2 1 (Normal) ON OFF OFF OFF ON ON 2 (Dual)



DIP Switch

Indoor unit

DIP Switch

# REMOTE CONTROLLER **SETTING**

## **CAUTION** ) In order to detect the room

temperature correctly when using the temperature sensor of the remote controller, do <ائسمان⊅ not install the remote controller in a place where it will be exposed to direct sunlight or

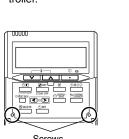
the indoor unit.

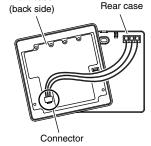
When installing the remote controller and cord near a source of electromagnetic waves, separate the remote controller from the source of the electromagnetic waves and use shielded cord.

Do not touch the remote controller PC board and PC board parts directly with your hands.

# 1. INSTALLING THE REMOTE CONTROL-

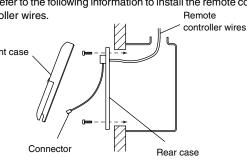
(1) Open the operation panel on the front of the remote controller, remove the two screws indicated in the following figure, and then remove the front case of the remote con-





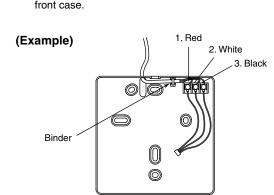
When installing the remote controller, remove the connector from the front case. The wires may break if the connector is not removed and the front case hangs down. When installing the front case, connect the connector to the front case.

(2) Install the rear case to the wall, etc. with the two tapping Refer to the following information to install the remote controller wires. controller wires

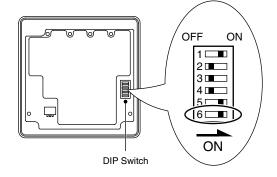


### 2. ROUTING THE REMOTE CONTROLLER **WIRES**

- (1) Install the remote controller wires to the terminals on the
- top of the rear case as shown in the following figure. (2) Fasten the wires with the binder. (3) If the remote controller wires run through the room, use a tool to cut away the thin area on the upper center of the



# 3. SETTING THE DIP SWITCHES When using a battery (memory backup)



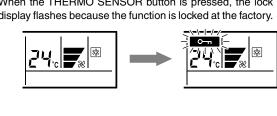
Change the DIP switch setting to use batteries. (The DIP switch is not set to use batteries at the factory.) Change DIP switch No. 6 from OFF to ON. If batteries are not used, all of the settings stored in memory will be deleted if there is a power failure.

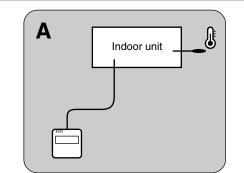
# 4. SETTING THE ROOM TEMPERATURE DETECTION LOCATION

The detection location of the room temperature can be selected from the following three examples. Choose the detection location that is

## A. Indoor unit setting (factory setting)

display flashes because the function is locked at the factory.





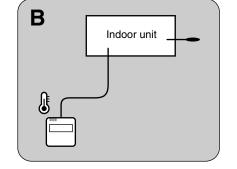
perature sensor.

(1) Press the THERMO SENSOR button for 5 seconds or more to unlock the function. The thermo sensor display flashes and then disappears when the function is unlocked.



(3) Press the THERMO SENSOR button again for 5 seconds or and then remains on when the function is locked.

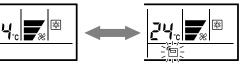
(4) Make sure that the function is locked.

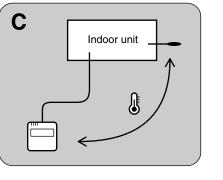


ler can be used to detect the room temperature.

The temperature sensor of the indoor unit or the remote control-

(2) Press the THERMO SENSOR button to select the temperature sensor of the indoor unit or the remote controller.





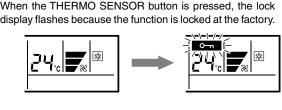
## **NOTES**

If the function to change the temperature sensor is used as shown in examples A and B (other than example C), be sure to lock the detection

best for the installation location.

The room temperature is detected by the indoor unit tempera-

(1) When the THERMO SENSOR button is pressed, the lock



B. Remote controller setting The room temperature is detected by the remote controller tem-

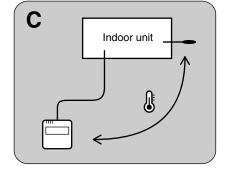


more to lock the function. The thermo sensor display flashes

C. Indoor unit/remote controller setting (room temperature sensor selection)

(1) Press the THERMO SENSOR button for 5 seconds or more to unlock the function. The thermo sensor display flashes

and then disappears when the function is unlocked.

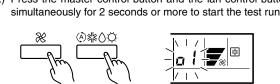


location. If the function is locked, the lock display om will flash when the THERMO SENSOR button is pressed.

# **TEST RUN**

# **⚠** CAUTION Supply power to the crankcase heater for at least

12 hours before the start of operation in winter. (1) Stop the air conditioner operation. (2) Press the master control button and the fan control button



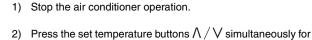
(3) Press the start/stop button to stop the test run.

# [SELF-DIAGNOSIS]

When the error indication "E:EE" is displayed, follow the following items to perform the self-diagnosis. "E:EE" indicates an error

# 1. REMOTE CONTROLLER DISPLAY

5 seconds or more to start the self-diagnosis.



Refer to the following tables for the description of each error Unit number (usually 0) — Error code

(3) Press the set temperature buttons  $\Lambda/V$  simultaneously for 5 seconds or more to stop the self-diagnosis.

Ex. Self-diagnosis

Error code	Error contents
00	Communication error (indoor unit remote controller)
01	Communication error (indoor unit outdoor unit)
02	Room temperature sensor open
03	Room temperature sensor short-circuited
04	Indoor heat exchanger temperature sensor open
05	Indoor heat exchanger temperature sensor short-circuited
06	Outdoor heat exchanger temperature sensor open
07	Outdoor heat exchanger temperature sensor short-circuited
08	Power source connection error

### Outdoor temperature sensor short-circuited 0b Discharge pipe temperature sensor open Discharge pipe temperature sensor short-0d Outdoor high pressure abnormal Discharge pipe temperature abnormal 0F Model abnormal 11 Indoor fan abnormal 12 Outdoor signal abnormal 13 Outdoor EEPROM abnormal

Float switch operated

## 2. OUTDOOR UNIT LEDS

When a malfunction occurs in the to the LEDs.

Error code

09

**0A** 

Error contents	LED1	LED2	LED3	LED4	LED5	LED6
Signal abnormal	_	1	×	0	×	×
Indoor unit abnormal	_		×	×	0	×
Discharge pipe temperature abnormal	_		×	×	×	0
Outdoor heat exchanger temperature abnormal	_		×	×	0	0
Outdoor temperature abnormal	_	_	×	0	×	0
Power source connection error	_	_	0	×	×	×
EEPROM abnormal	_	1	0	0	0	0
	0	0	0	0	0	0
Outdoor high pressure	0		_			_

When the fault is cleared, the LED lamp goes off.

○: 0.1s ON/0.1s OFF (flash) —: Indefinite

# Heat & Cool model (reverse cycle) only

LED layout outdoor unit, the LEDs on the circuit board light to indicate the error. Refer to the following table for the LED3 CLED6 description of each error according LED2 LED5 LED1 \ \ \ \ \ \ \ LED4

Life contents	LLDI	LLDZ	LLD3		LLDJ	LLDU
Signal abnormal	_	_	×	0	×	×
Indoor unit abnormal	_		×	×	0	×
Discharge pipe temperature abnormal	_		×	×	×	0
Outdoor heat exchanger temperature abnormal	_		×	×	0	0
Outdoor temperature abnormal	_	1	×	0	×	0
Power source connection error	_		0	×	×	×
EEPROM abnormal	_	_	0	0	0	0
	0	0	0	0	0	0
Outdoor high pressure abnormal	0	_	_		_	_
Discharge pipe temperature abnormal	_	0	_	-	_	_

However, for discharge pipe temperature abnormal and high pressure abnormal, the LED lamp lights continuously for 24 hours, as long as the power is not turned off.

3. CANCELING AUTO RESTART

The auto restart function will be canceled.

The auto restart function can be canceled

(1) DIP switch setting (indoor unit)

[DIP-SWITCH SETTING]

# Indoor unit

	NO.	SW state			Data!!	
		OFF		ON	- Detail	
CWO.	1	1	*	-	Remote sensor setting	
SW2 DIP-Switch	2	Edge	*	Pulse	Control input setting	
	3	Validity	*	Invalidity	Auto restart setting	

## Remote controller

		NO.	SW state			Detail.
			OFF		ON	Detail
	DIP-Switch	1			*	Dual remote controller setting
		2	*	:		
		3	One unit *		Multiple unit	Group control setting
		4	Heat & Cool model		Cooling only model	Model setting
		5	Invalidity		Validity *	Auto changeover setting
		6	Invalidity *		Validity	Memory backup setting

\*: Factory setting

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