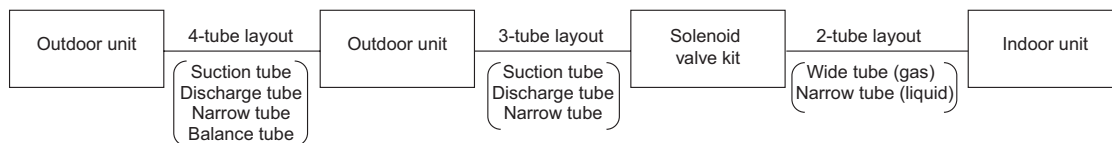


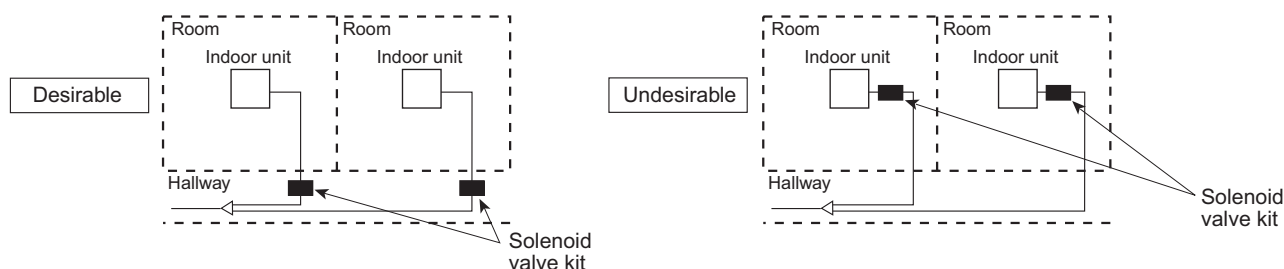
1. Model Selecting and Capacity Calculator

■ Installation standards

Relationship between A/C units and the refrigerant tubing



- Install the solenoid valve kit 30 m or less from the indoor unit.
- In quiet locations such as hospitals, libraries, and hotel rooms, the refrigerant noise may be somewhat noticeable. It is recommended that the solenoid valve kit be installed inside the corridor ceiling, at a location outside the room.
- The solenoid valve kit must be located not less than 2.5m above the floor or that cannot be touched.



Common solenoid valve kit

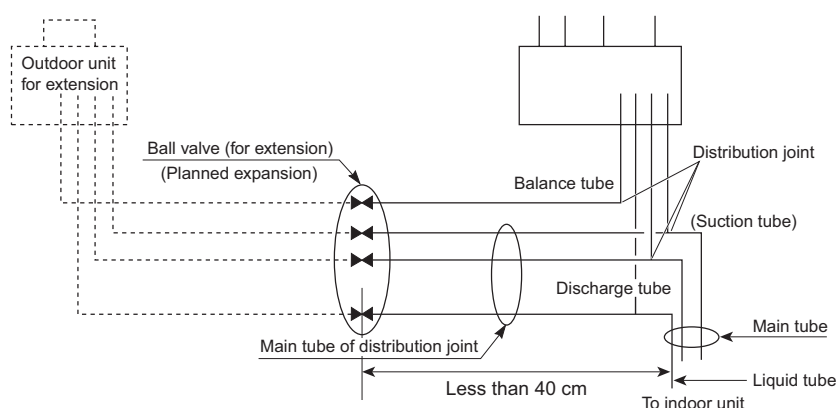
- Multiple indoor units under group control can utilize a solenoid valve kit in common.
- Categories of connected indoor unit capacities are determined by the solenoid valve kit.

Type of solenoid valve kit	Total capacity of indoor units (kW)
CZ-P160HR3	$5.6 < \text{Total capacity} \leq 16.0$
CZ-P56HR3	$2.2 \leq \text{Total capacity} \leq 5.6$

- If the capacity range is exceeded, use 2 solenoid valves connected in parallel.

(2) When adding ball valve for outdoor unit

1. Location: Install the ball valve at the main tube of the distribution joint.



2. Installation requirements

- Be sure to install the ball valve up-grade to prevent the inadvertent flow of oil.
- Install the ball valve at the shortest distance (within 40 cm) from the main tube. If the diameter of the ball valve is smaller than that of the main tube, use a reducer or the like to reduce the size of the tubing at that location.

NOTE

- If the ball valve is installed at the outdoor unit (including extension for outdoor unit), face the service port of the valve toward the outdoor unit side (see above illustration; dotted line) and allow a distance of over 50 cm from the outdoor unit. If the ball valve is installed between the indoor unit (including extension for indoor unit) and the main tube, face the ball valve toward the indoor unit side (see above illustration; dotted line).
- Use a field supply ball valve.

3. Electrical Wiring

- (6) • Use the standard power supply cables for Europe (such as H05RN-F or H07RN-F which conform to CENELEC (HAR) rating specifications) or use the cables based on IEC standard. (60245 IEC57, 60245 IEC66)
- Connecting cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed 5 or 3 *1.5 mm² flexible cord. Type designation 60245 IEC 57 (H05RN-F, GP85PCP etc.) or heavier cord.



WARNING

Loose wiring may cause the terminal to overheat or result in unit malfunction.

A fire hazard may also occur.

Therefore, ensure that all wiring is tightly connected.

When connecting each power wire to the terminal, follow the instructions on “How to connect wiring to the terminal” and fasten the wire securely with the fixing screw of the terminal plate.

3-4. Connecting Multiple Indoor Units to a Single Solenoid Valve Kit

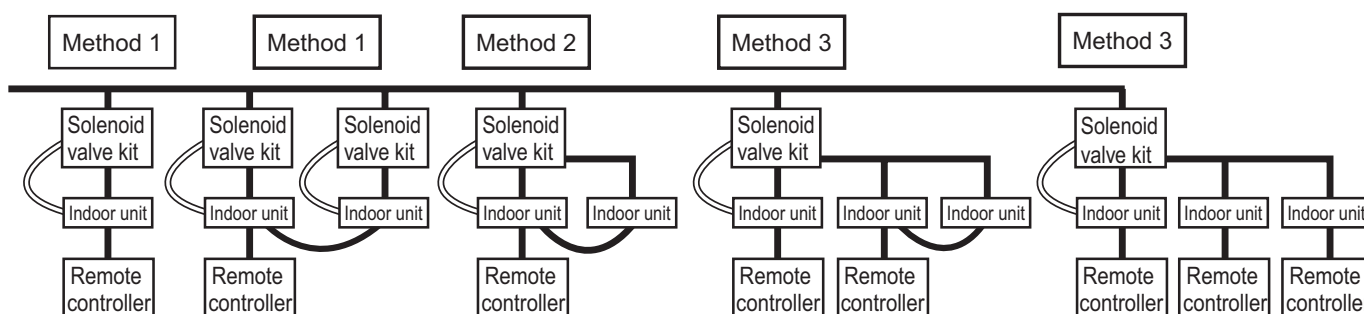
- It is possible to connect multiple indoor units to one solenoid valve kit.
The indoor units can be controlled individually or be operated as a group.
- It is possible to adopt multiple units with a common use of the solenoid valve kit per piece of refrigerant.
- Categories of connected indoor unit capacities are determined by the solenoid valve kit.

Type of solenoid valve kit	Total capacity of indoor units (kW)
CZ-P160HR3	5.6 < Total capacity ≤ 16.0
CZ-P56HR3	2.2 ≤ Total capacity ≤ 5.6

* If the capacity range is exceeded, use two solenoid valves connected in parallel.

Each Method (General) and Conditions

	Method 1	Method 2	Method 3
Method	Connecting one indoor unit with one solenoid valve kit	Group control is possible by connecting multiple indoor units to one solenoid valve kit.	Indoor units can operate individually by connecting multiple indoor units to one solenoid valve kit.
Connectable number of remote controls	1 piece	1 piece	Over 2 pieces
Possible operating functions	Individual control	Group control * Thermostat On/Off function is only individual control (when selecting the body thermostat).	Individual control available * Mixed group control available
Possible operating modes	Cool, Dry, Heating, Auto, Fan	Cool, Dry, Heating, Auto, Fan	Cooling, Dry, Heating, Fan * Auto selection is impossible.
Condition	–	Mixed cooling and heating is impossible.	Mixed cooling and heating is impossible. Auto selection is impossible.



3. Electrical Wiring

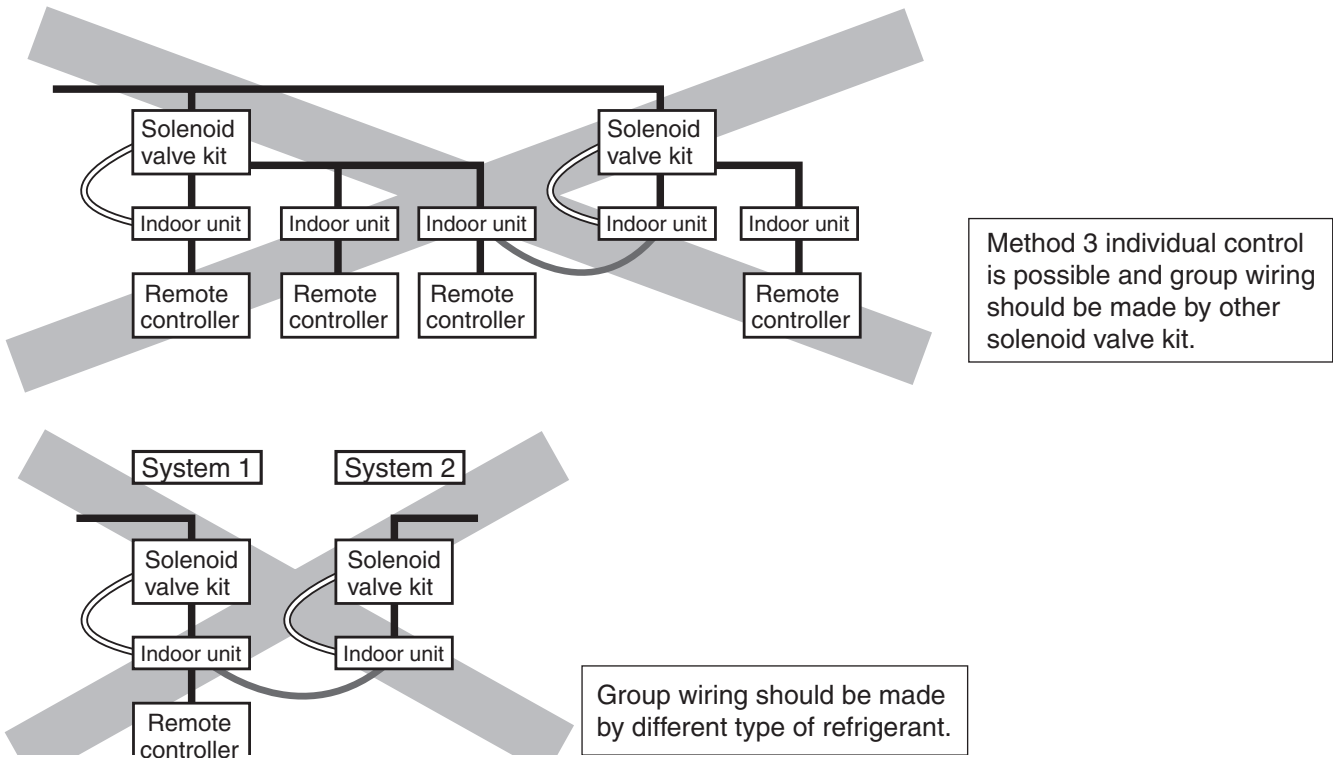
Necessity of setting changes by combination of each method

Type of combination: Necessity of setting
Method 1 only: Setting is unnecessary.
Method 2 included: Setting up in common use of a solenoid valve kit from “Remote Control” is necessary. *1 * Method 2 only is set. * Method 3 excluded
Method 3 included: Setting up in common use of a solenoid valve kit from a specific program settings software is necessary. *1 * Setting all connected indoor units

*1: Refer to “Test Run” for setting instructions.

Please note the following system example is prohibited and avoid the following connection.

2



7. Optional Parts


7-2. Solenoid Valve Kit for 3-Way System

■ CZ-P56HR3, CZ-P160HR3 (for R410A)

Installation Instructions


For safety installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- Observe all local, state, and national electrical codes.
- Pay close attention to all warning and caution notices given in this manual.



WARNING




This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.



CAUTION

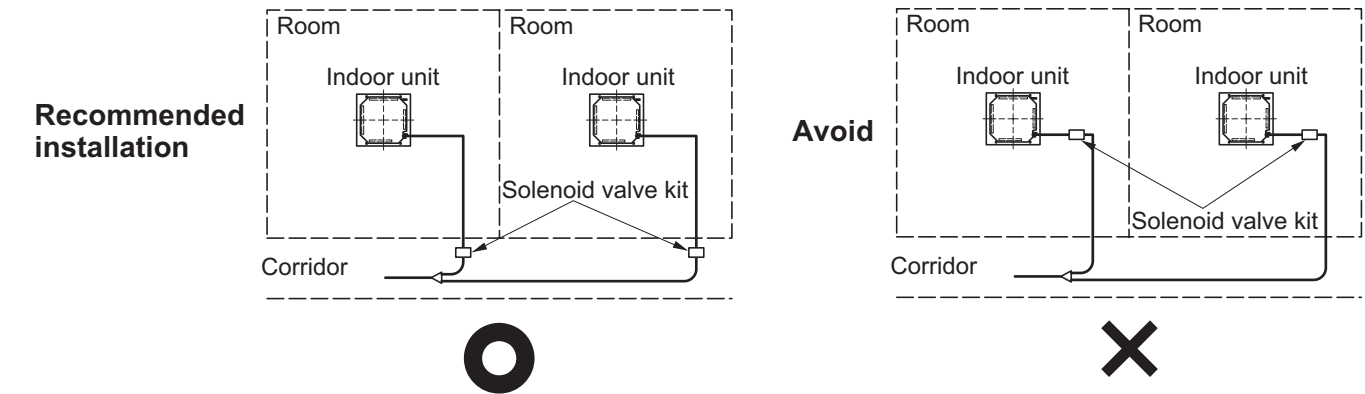
This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

1. Accessories

Part Name	Figure	Q'ty	Remarks
Washer		2	For hanging bolts
Hanging hook		1	Used to hang the solenoid valve kit
M4 screw		4	For hanging bolts

2. Positioning for Installation

- The solenoid valve kit must be installed at a location within 30 m of the indoor unit.
However, the length of wiring provided with the solenoid valve kit is 5 m. If the valve will be used with wiring that exceeds 5 m in length, use a terminal box (field supply) or similar device to extend the wiring.
Refer to “4. Wiring, Tubing, and Heat Insulation.”
- The solenoid valve kit produces some refrigerant noise. If it is to be installed in a quiet place such as a hospital, library or hotel, it is recommended that the solenoid valve kit be installed in the ceiling of a corridor, etc. apart from the room.
- The solenoid valve kit must be located not less than 2.5m above the floor or that cannot be touched.



7. Optional Parts

- Be sure to secure the solenoid valve kit with the hanging bolts not to cause any falling damage, using the hanging hooks.
Do not place the solenoid valve kit directly on the ceiling surface. Select a location where the ceiling is enough to support the weight of the solenoid valve Kit.
When installing the solenoid valve kit, **remember to install it with the top surface facing upward.**
(See the figure shown in the subsection “How to use the fittings” in “3. Valve Dimensions and Hanging Method.”)
- When installing the valve body, install with the top surface facing up. Secure 200mm or more of space to the front and 150mm space upward so that the service panel can be removed upward.
- **Never conduct drilling or welding on the sheet metal.** Place the solenoid valve kit so that it does not hinder draining.
- Do not cover air holes.

3. Valve Dimensions and Hanging Method

- There are 2 types of solenoid valve kits: type 56 and type 160. The corresponding indoor unit model capacities are shown in the table at right.

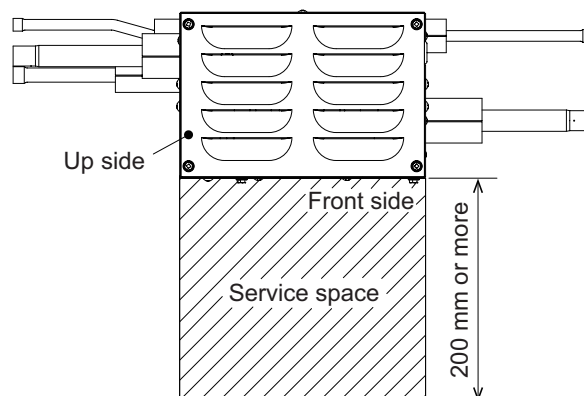
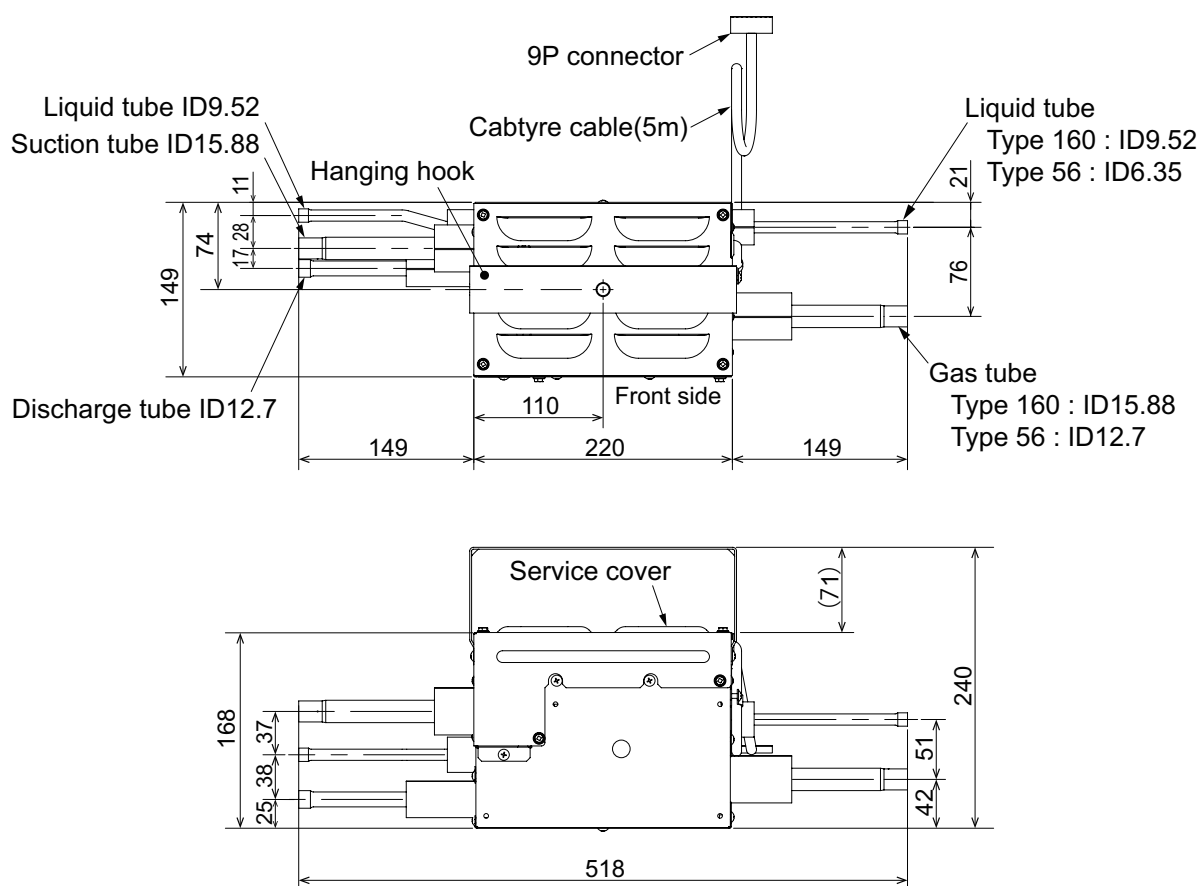


Fig. 7-1 Service space

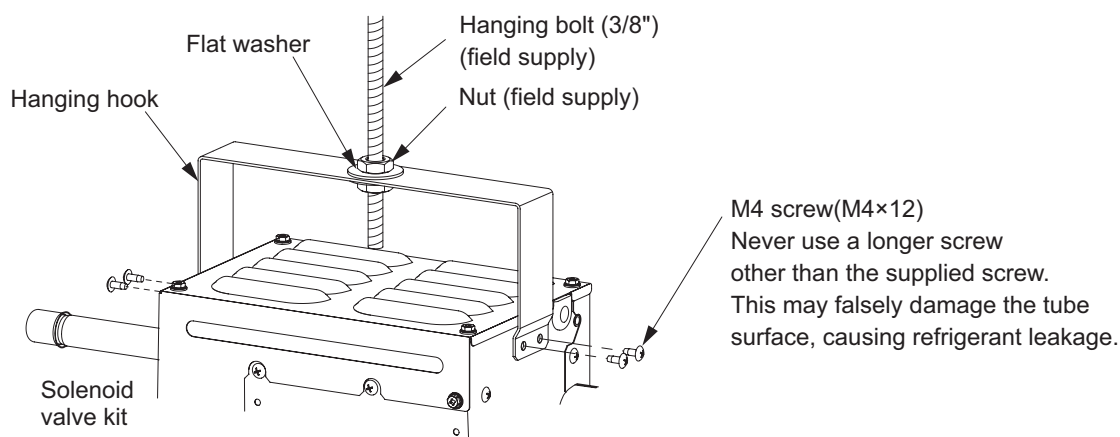
Solenoid Valve Kit	Indoor Unit Capacity
CZ-P56HR3	22 – 56 Type
CZ-P160HR3	71 – 160 Type
$\begin{pmatrix} \text{CZ-P160HR3} \times 2 \\ \text{or} \\ \text{CZ-P56HR3} \times 1 \\ + \\ \text{CZ-P160HR3} \times 1 \end{pmatrix}$	224 Type
CZ-P160HR3 \times 2	280 Type



Note: This figure shows the unit with suspension fittings attached.

7. Optional Parts

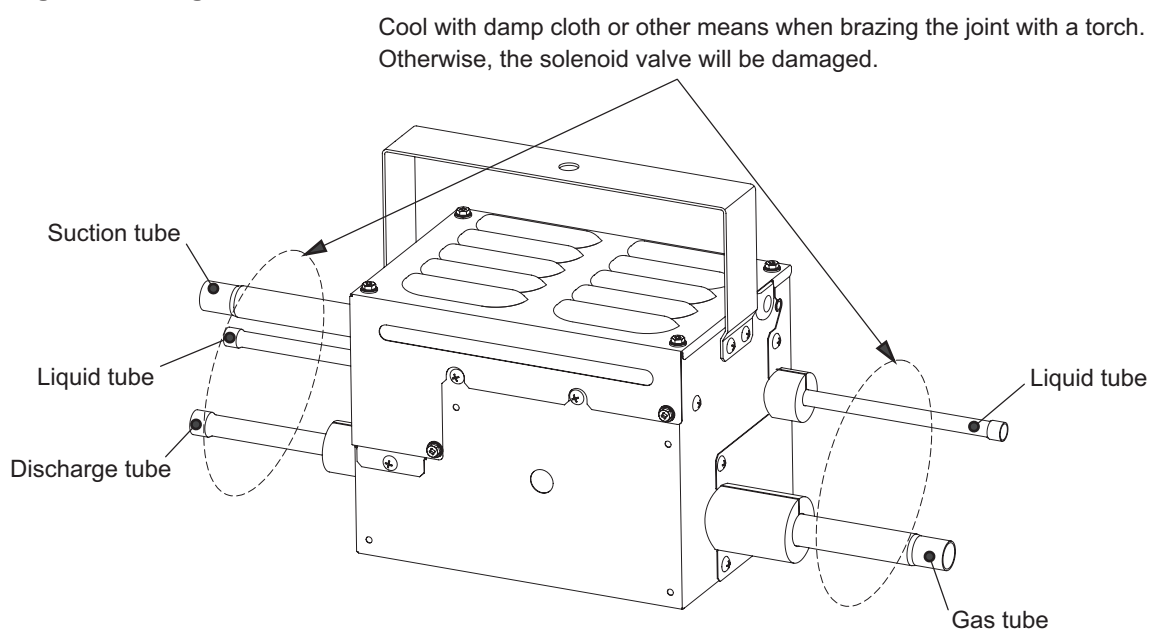
How to use the fittings



- Be sure to attach the supplied hanging hook.

4. Wiring, Tubing, and Heat Insulation

1. Refrigerant tubing



- When brazing, be sure to perform nitrogen replacement inside the tube so that oxidation coating does not form inside the tube.

2. Wiring

Connect the 9P connector coming from the solenoid valve kit through the power inlet of the indoor unit to the 9P connector (red) of the Solenoid Valve Control PCB (sold separately). (Figs. 7-2-1, 2, 3)

Accessory wire length is 5 m.

In case the wire is not long enough, cut the wire halfway and connect additional wire (field supply) as an extension using a terminal box (field supply).

Additional wire must be "H05VVF 0.5mm²" or "60227 IEC53".

Anchor the cabtyre cable using the binding bands inside the unit.

Do not route the cabtyre cable through the same wiring conduit as the remote controller wiring or inter-unit control wiring.

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

7. Optional Parts

NOTE

The wire should be fixed with the clamp inside the indoor unit.

Do not route the wire through a tube together with the remote-control line and inter-unit operation line.

- Recommended wire size
6-core cable, 0.5 mm² or more (300V or more)
- Grounding should be done between the indoor unit and solenoid valve kit.

If required wire length is less than 5 m

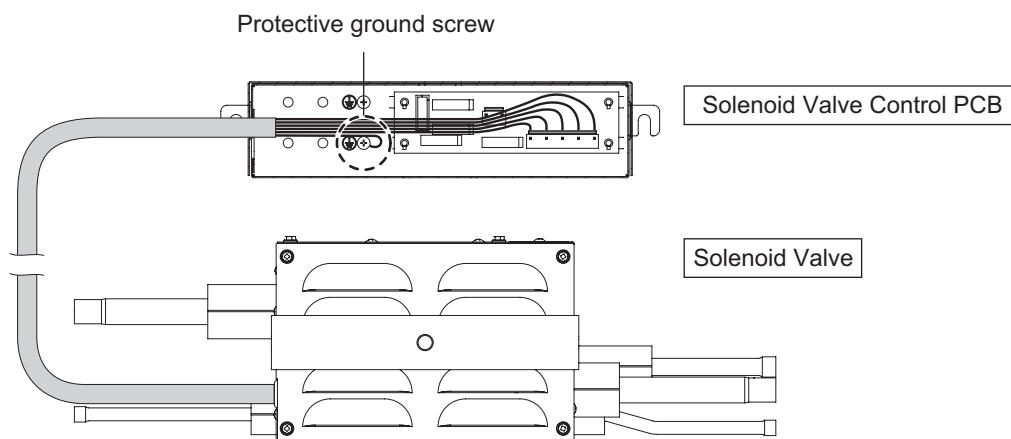


Fig. 7-2-1 Connection

Indoor unit : K1 type (45 ~ 106)

Indoor unit : E1 type (224 ~ 280)

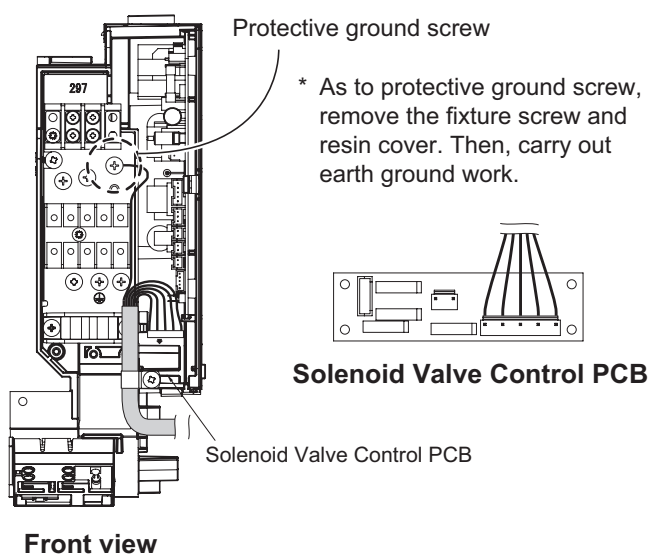


Fig. 7-2-2 Connection for S-45 ~ 106MK1E5

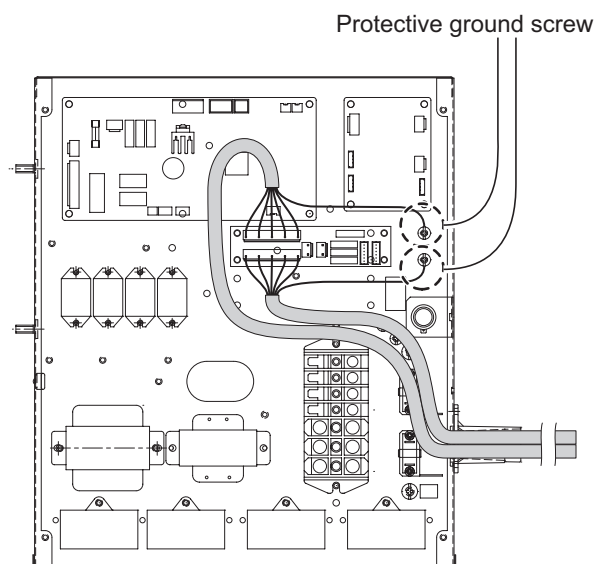


Fig. 7-2-3 Connection for S-224 ~ 280ME1E5

3. Heat Insulation

(Be sure to insulate the tubing after finishing leak inspection.)

- Be sure to insulate the tubing.
- Wrap insulators (field supply) having a thickness of 10 mm or more with heat resistance of 120°C or more around the discharge tubes and gas tubes, and 80°C or more around the suction tubes and liquid tubes.
- Use the supplied thermal insulation tape to bind the areas where there are seams and gaps between the thermal insulation that is wrapped around each tube.
- Failure to conduct thermal insulation may cause water leakage due to condensation.

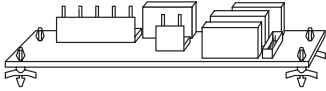
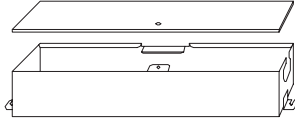
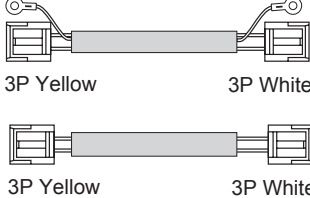

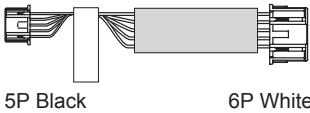
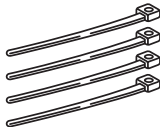
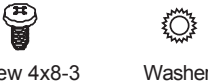
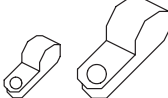
7. Optional Parts

7-3. Solenoid Valve Controller

■ CZ-CAPE2

Installation Instructions

1. Supplied Parts

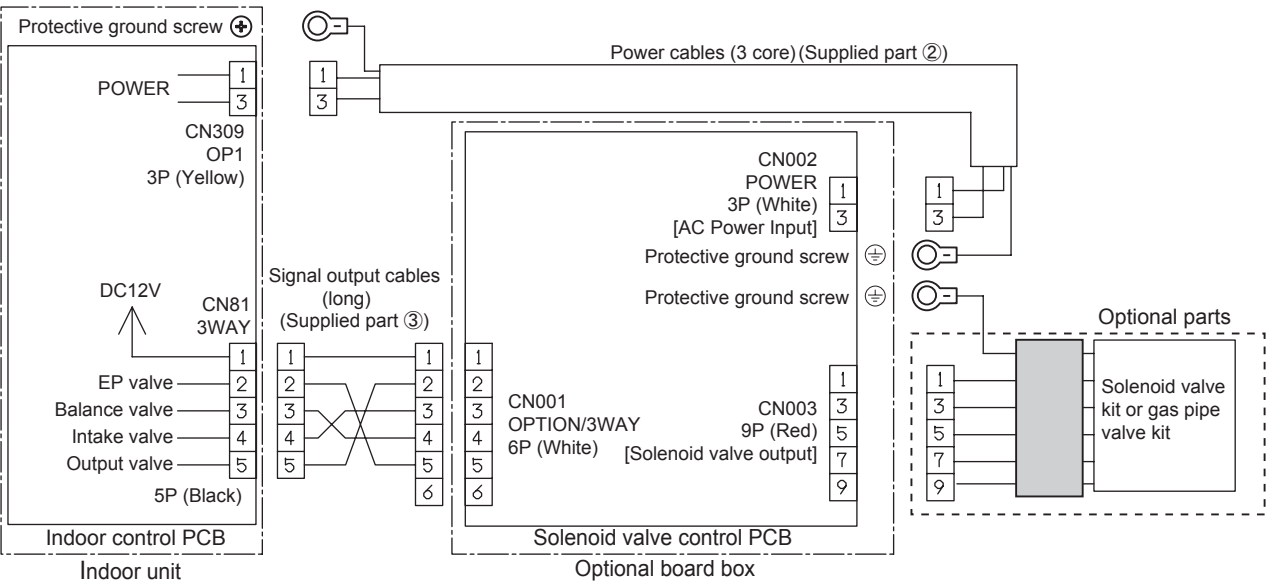
<p>① Solenoid Valve Control PCB</p> 	<p>④ Optional board box</p> 
<p>② Power cables (3 core/2 core)*</p> 	<p>⑤ Fastening screws</p>  <p>Screw 4x4-2 (1 pc.) Screw 4x10-2 (2 pcs.)</p>
<p>③ Signal output cables(long/short)*</p> 	<p>⑥ Cable tie (4 pcs.)</p> 
	<p>⑦ Protective ground screw for indoor unit</p>  <p>Screw 4x8-3 Washer</p>
	<p>⑧ Nylon clamp(F7,F14)</p> 

* Use the long cables and 3 core cables when the solenoid valve controller is installed outside the indoor unit.

2. Wiring Diagram

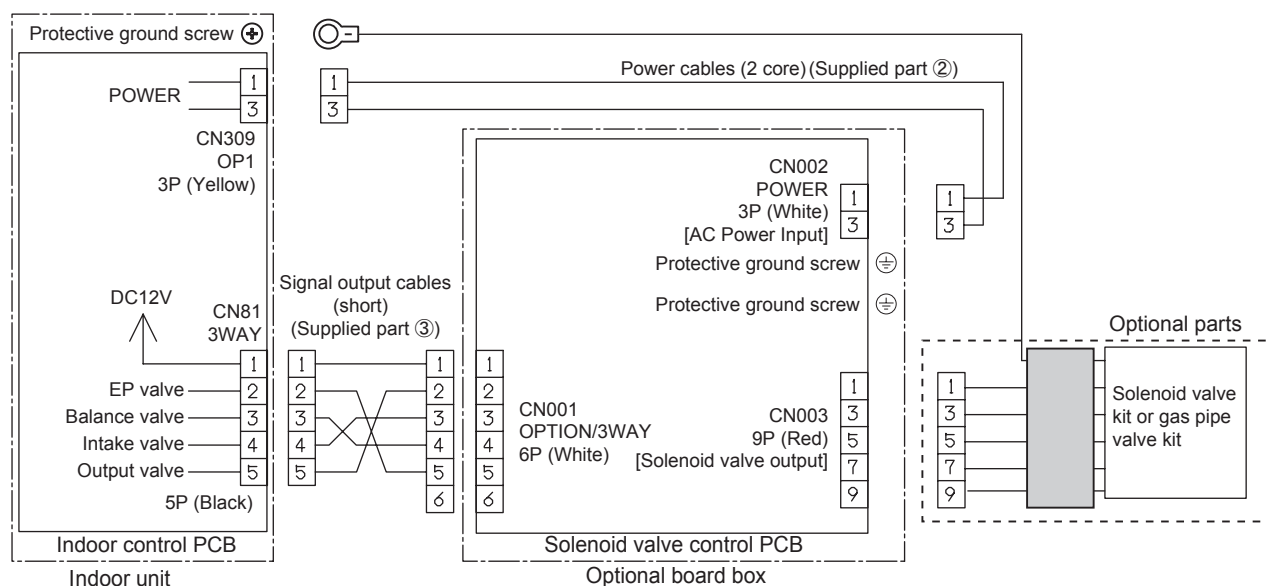
- Connect to the indoor control PCB with power cable(2 core/3 core) (Supplied part ②) and Signal output cable (Supplied part ③).
- The connected solenoid valve is a solenoid valve kit, or a gas pipe valve kit.

Normal installation



7. Optional Parts

Models where installation is possible in indoor unit electrical box

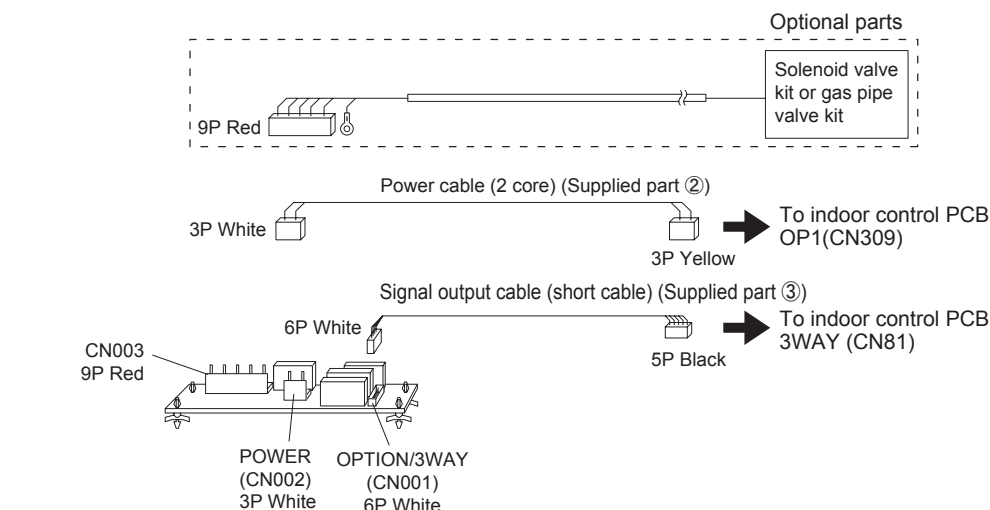


3. Installation Procedures

※Note: See the reverse side for procedures for installation on various indoor units.

Models where installation is possible in indoor unit electrical box

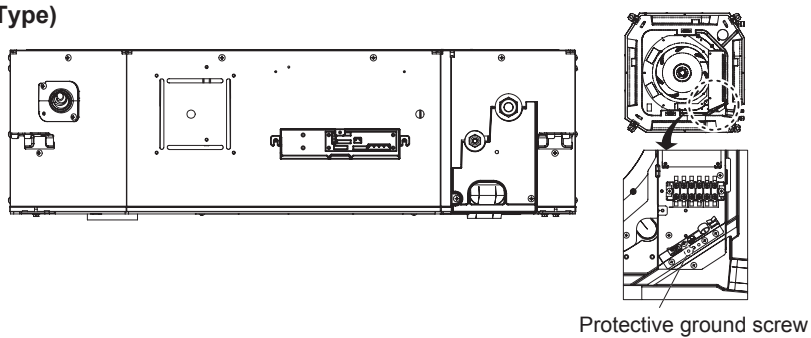
1. Install the spacers for the solenoid valve control PCB in the electrical box.
2. Wire according to the following procedure.
 - Connect the 3P white connector of power cable(2 core) (Supplied part ②) to POWER (CN002) on the solenoid valve control PCB.
 - Connect the 3P yellow connector to OP1 (CN309) on the indoor control PCB.
 - Connect the 6P white connector of Signal output cable (the short cable) (Supplied part ③) to OPTION/3WAY (CN001) on the solenoid valve control PCB.
 - Connect the 5P black connector to 3WAY (CN81) on the indoor control PCB.
 - Connect the connector from the solenoid valve kit or gas pipe valve kit (9P red) to the 9P red connector (CN003) on the solenoid valve control PCB.
 - Connect the ground wire of the solenoid valve kit or gas pipe valve kit to the indoor unit using the screw and washer (supplied part ⑦).
3. When you have finished wiring work, check to be sure that there are no nipped portions in the wiring.



7. Optional Parts

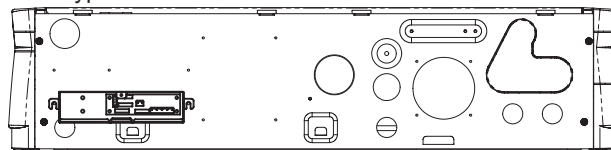
Figure of installation to each Indoor unit

4-Way Cassette (U1 Type)

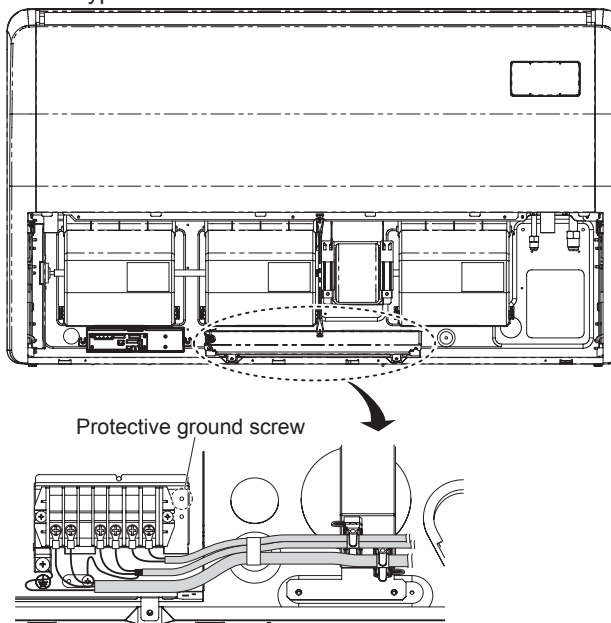


Ceiling (T1 Type)

36-56 Type

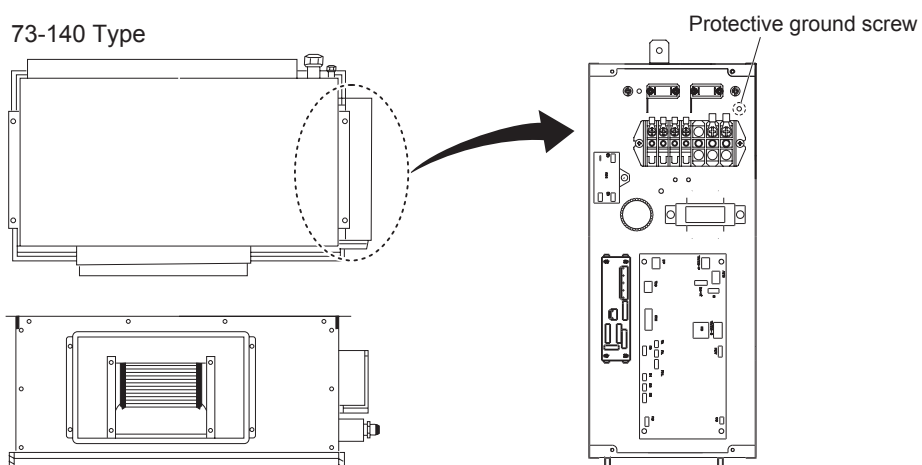


73-140 Type



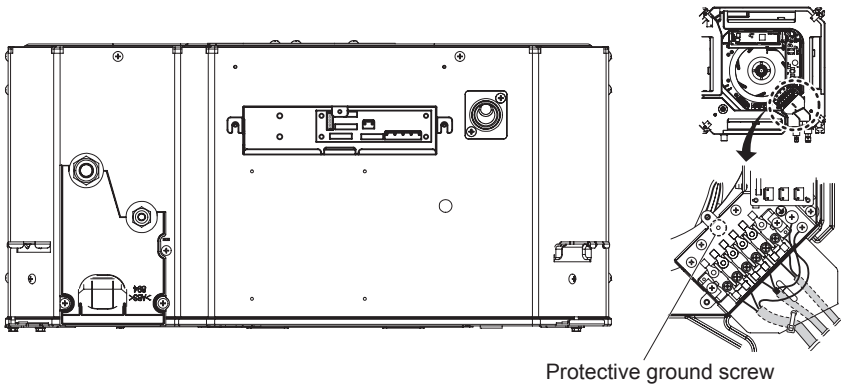
High Static Pressure Ducted (E1 Type)

73-140 Type

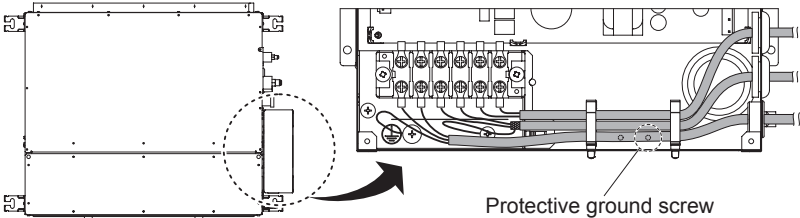


7. Optional Parts

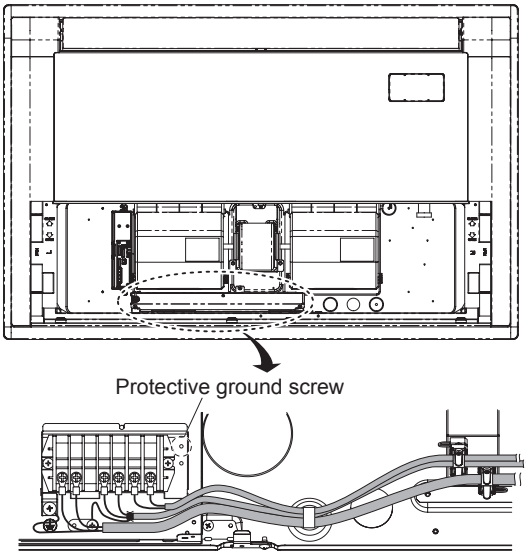
4-Way Cassette 60x60 (Y1 Type)



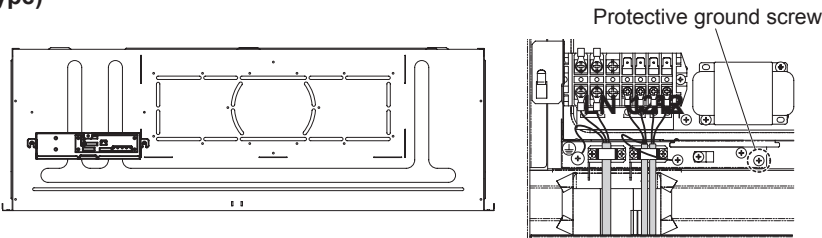
Slim Low Static Ducted (M1 Type)



1-Way Cassette (D1 Type)

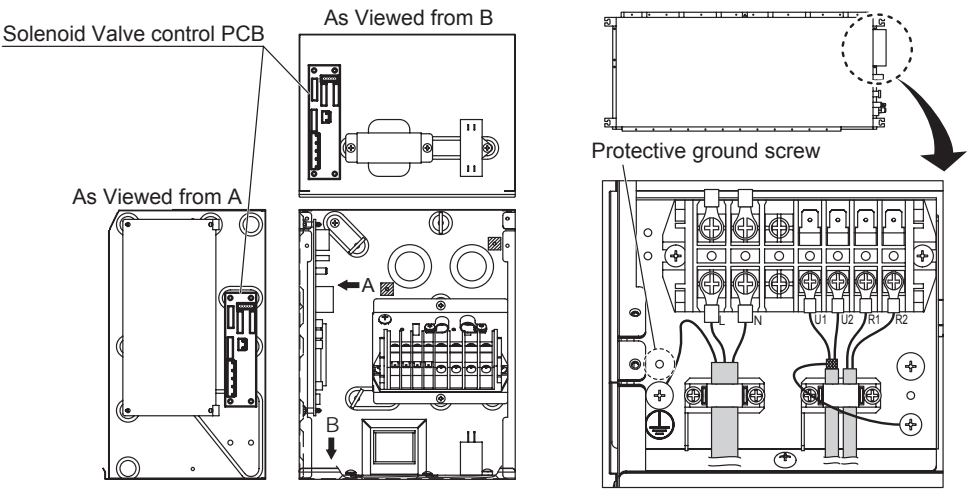


2-Way Cassette (L1 Type)

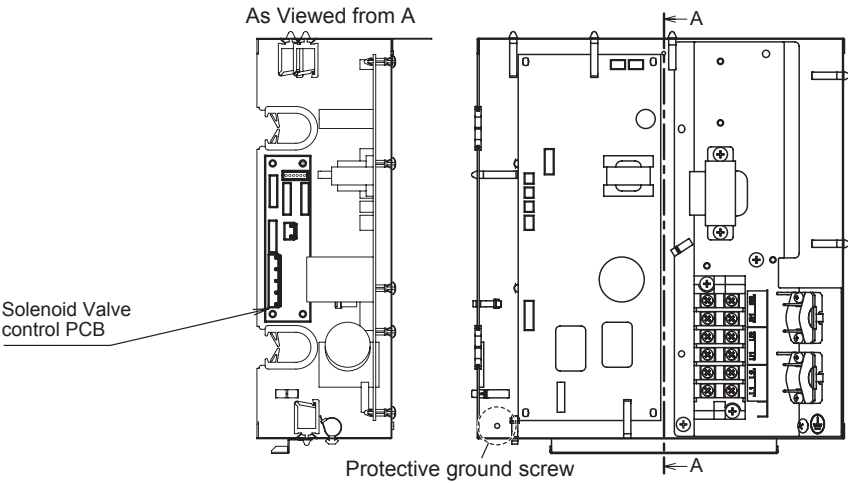


7. Optional Parts

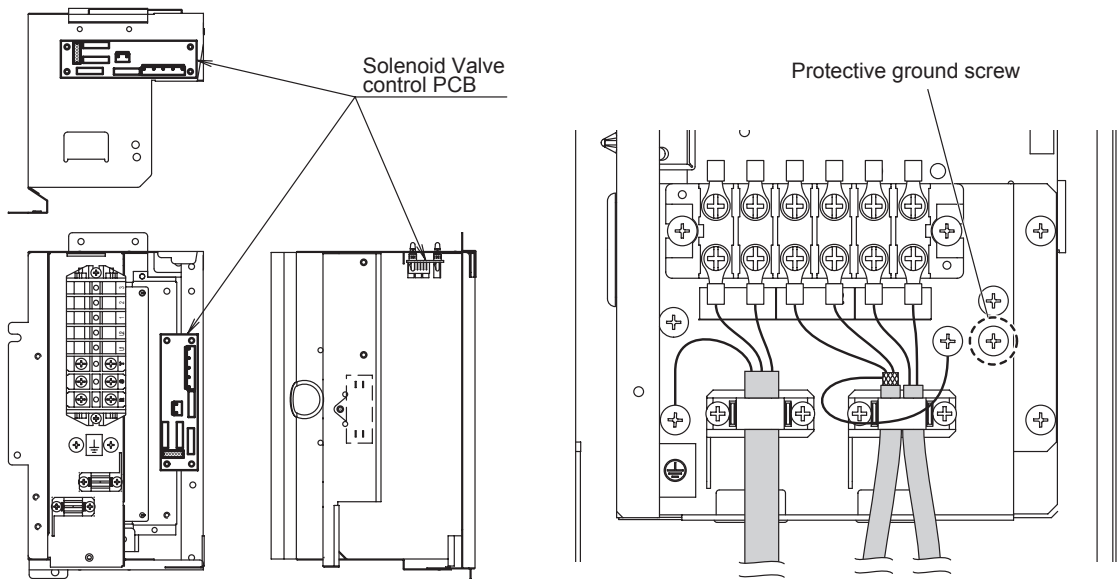
Low Silhouette Ducted (F1 Type)



Low Silhouette Ducted (F2 Type)



Floor Standing (P1 Type)
Concealed Floor Standing (R1 Type)



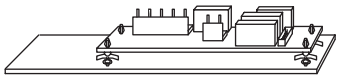
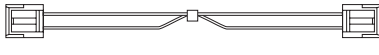
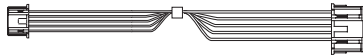
7. Optional Parts

7-4. Solenoid Valve Controller

■ CZ-CAPEK2

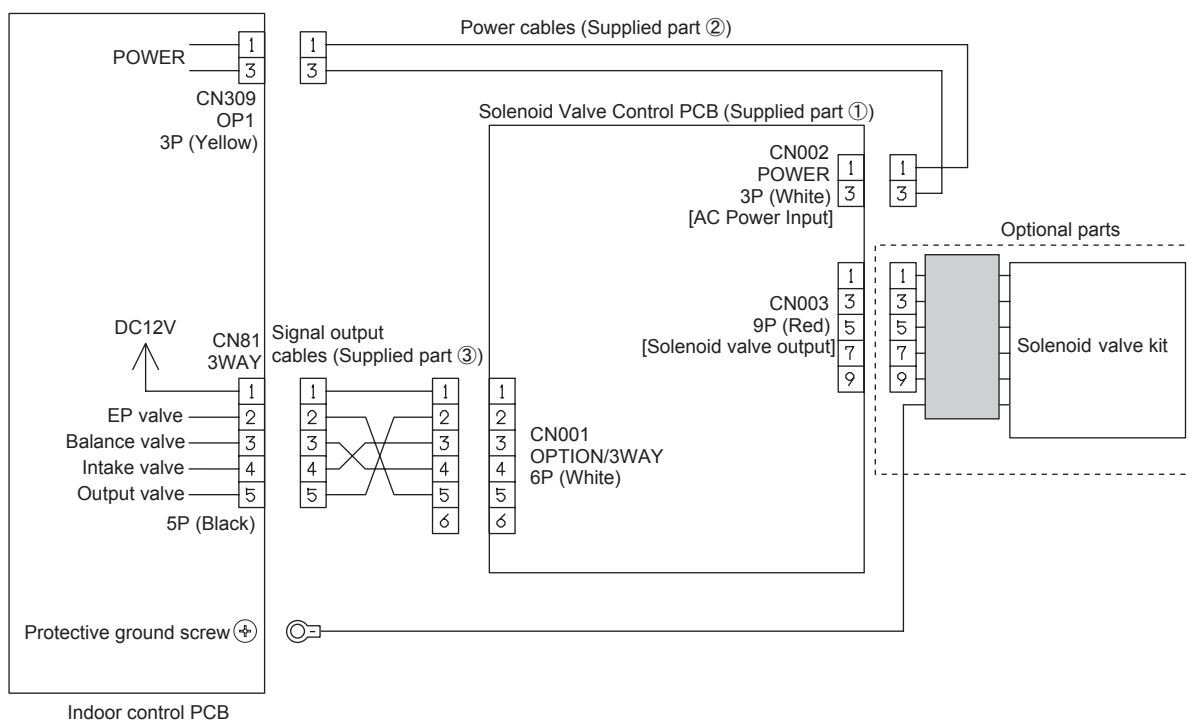
Installation Instructions

1. Supplied Parts

① Solenoid Valve Control PCB 	② Power cables  3P Yellow 3P White	③ Signal output cables  5P Black 6P White
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2. Wiring Diagram

- Connect to the indoor control PCB with Power cable (Supplied part ②) and Signal output cable (Supplied part ③)
- The connected solenoid valve is a solenoid valve kit.



3. Installation

3-1. How to remove the grille

- Remove the two screw covers bellow the grille and open the front panel. (Fig.7-3)
- Remove the six screws. (Fig.7-3)
- Remove the terminal block cover. (Fig.7-3)
- Warp the lower flap to take out the pins and remove the lower flap. (Fig.7-4)

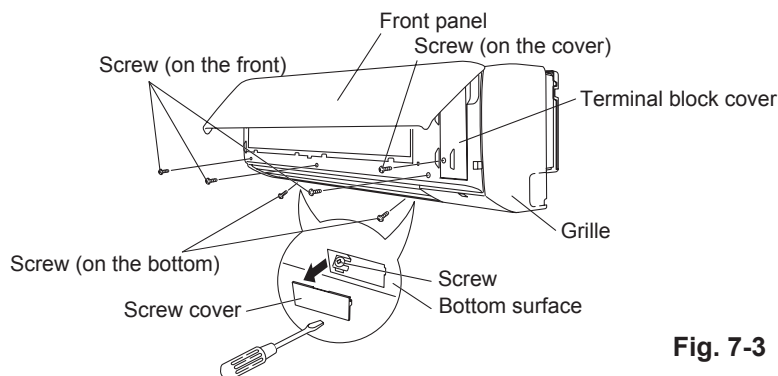


Fig. 7-3

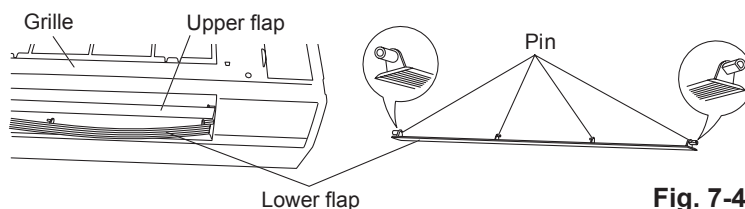


Fig. 7-4

7. Optional Parts

- Hold the both sides of the grille and pull upwards to remove from the frame. (Fig.7-5)
- Remove the electrical component box cover. (Fig.7-6)

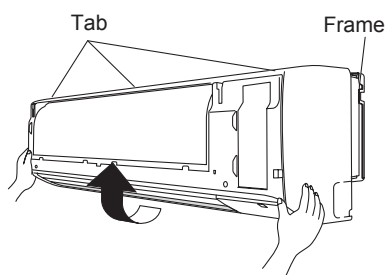


Fig. 7-5

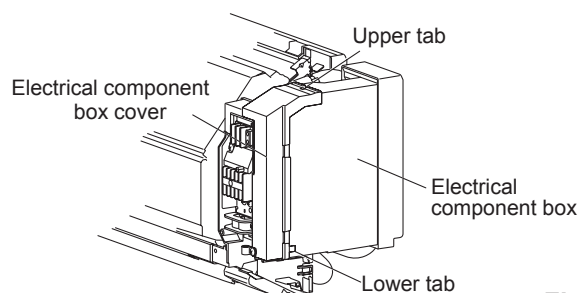


Fig. 7-6

3-2. How to install the board

- Disconnect the CN033 (White), CN103 (Green), CN102 (Red), CN100 (White), CN082 (White), CN104 (Yellow) connectors from the indoor control PCB and take out the indoor control PCB. (Fig.7-7)
- * When you take out the indoor control PCB, lift the tab holding the indoor control PCB. (Fig.7-8)
- Connect the 3P connector (yellow) of the power cables (supplied part ②) to the CN309 OP1 connector (yellow) on the indoor control PCB. (Fig.7-7)
- Connect the 5P connector (black) of the signal output cables (supplied part ③) to the CN081 3WAY connector (black) on the indoor control PCB. (Fig.7-7)
- Connect the removed connectors to their original positions on the indoor control PCB and insert the PCB. (Fig.7-7)
- * Be sure to connect all the connectors.

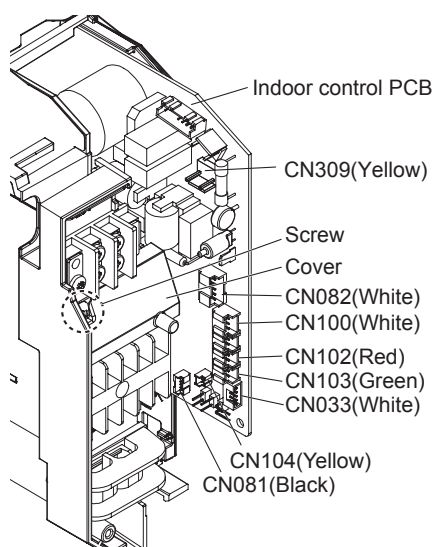


Fig. 7-7

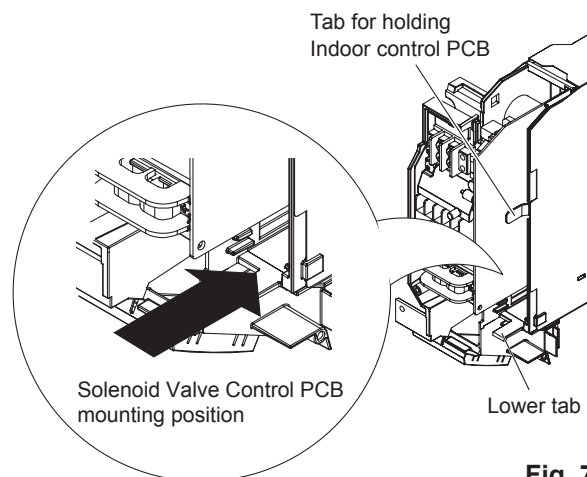


Fig. 7-8

- Remove the screw and the cover.(Fig.7-7)
- Connect the solenoid valve kit ground wire to the indoor unit ground wire mounting position. Also connect the 9P connector (red) of the solenoid valve kit to the CN003 9P connector (red) on the solenoid valve control PCB. (Figs.7-9, 10)
- Connect the 3P connector (white) of the power cables (supplied part ②) to the CN002 POWER connector (white) on the solenoid valve control PCB (supplied part ①) (Fig.7-9)
- Connect the 6P connector (white) of the signal output cables (supplied part ③) to the CN001 3WAY connector (white) on the solenoid valve control PCB.(Fig.7-9)
- Insert the solenoid valve control PCB into its mounting position. (Fig.7-8)
- * Pay attention to the insertion direction of the solenoid valve control PCB. (Fig.7-9)
- Hook the upper tab of the electrical component box cover to the electrical component box first, and then fit the lower tab. (Figs.7-6, 8)
- * Pay attention not to catch the wires in the electrical component box cover.
- Clamp the wiring from the solenoid valve kit. (Fig.7-10)
- Attach the screw and the cover.(Fig.7-7)

7. Optional Parts

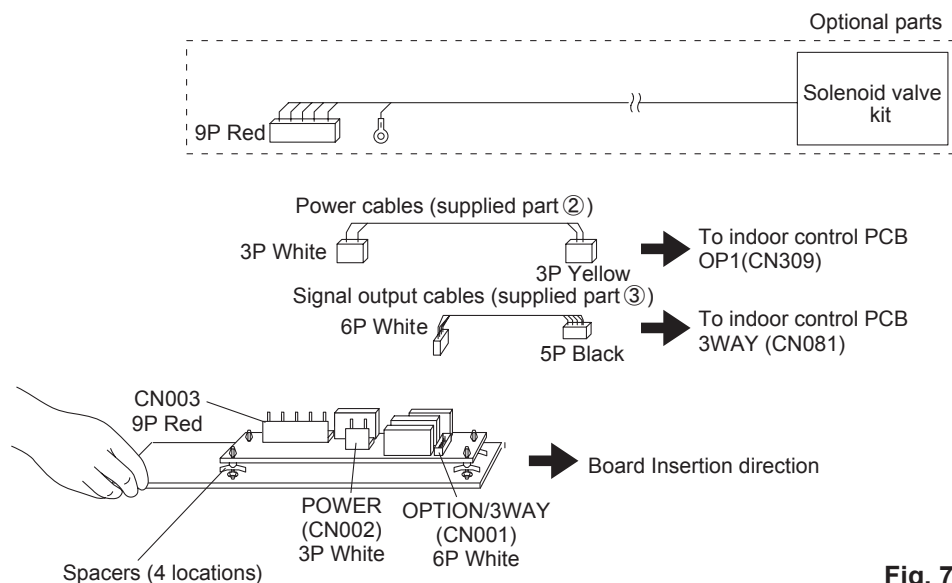


Fig. 7-9

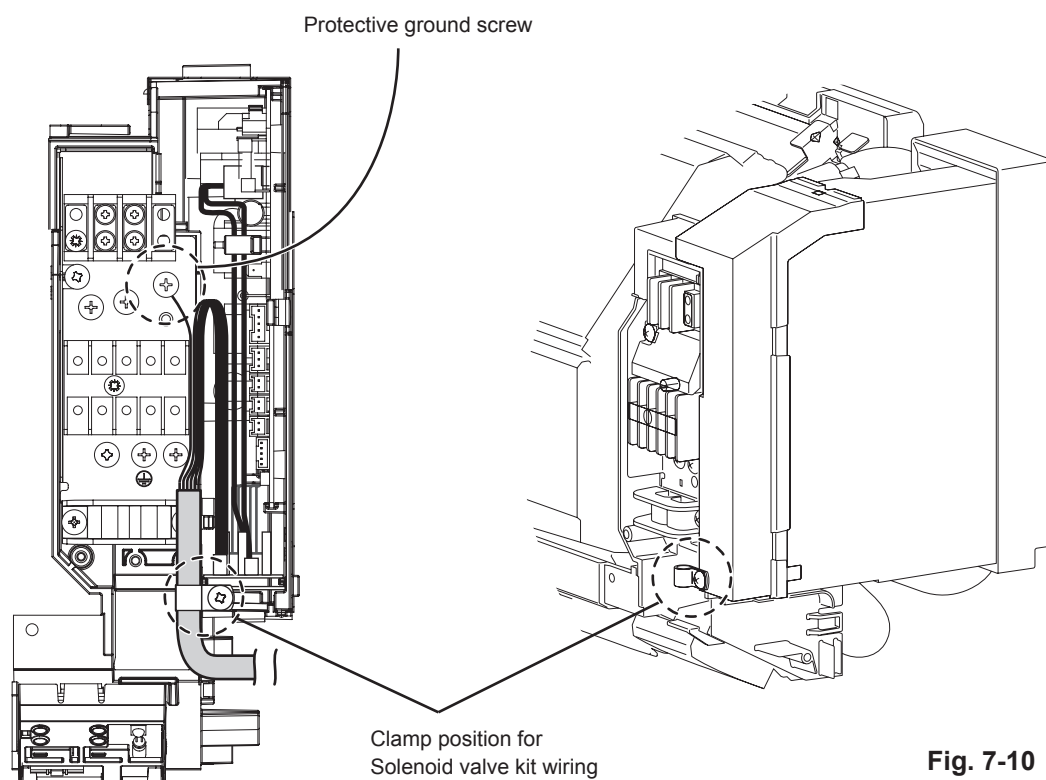


Fig. 7-10

3-3. How to attach the grille

- Fit the grille to the three tabs on the upper part of the frame and attach the grille. (Fig.7-5)
- Press the grille to its original position. Attach six screws and two screw covers. (Fig.7-3)
- * For the screws on the front, attach screws in turn from the electrical component box side.
- Warp the lower flap and fit the pins to the grooves on the grille to attach the flap. (Fig.7-4)
- Close the front panel. (Fig.7-3)