Contents

5. TEST RUN

1. Preparing for Test Run

1. Preparing for Test Run

● **Before attempting to start the air conditioner, check the following.**

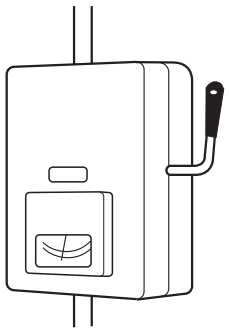
(1) All loose matter is removed from the cabinet especially steel filings, bits of wire, and clips.

(2) The control wiring is correctly connected and all electrical connections are tight.

(3) The protective spacers for the compressor used for transportation have been removed. If not, remove them now.

(4) The transportation pads for the indoor fan have been removed. If not, remove them now.

(5) The power has been connected to the unit for at least 5 hours before starting the compressor. The bottom of the compressor should be warm to the touch and the crankcase heater around the feet of the compressor should be hot to the touch.

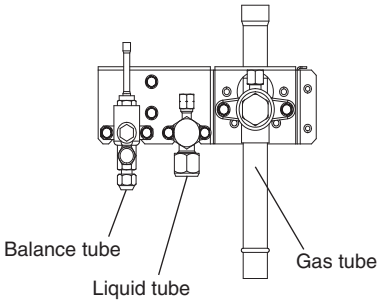


ON

(Power must be turned ON at least 5 hours before attempting test run)

Power mains switch

(6) Both the gas and liquid tube service valves are open. If not, open them now.



(7) Request that the customer be present for the trial run. Explain the contents of the operating instructions, then have the customer actually operate the system.

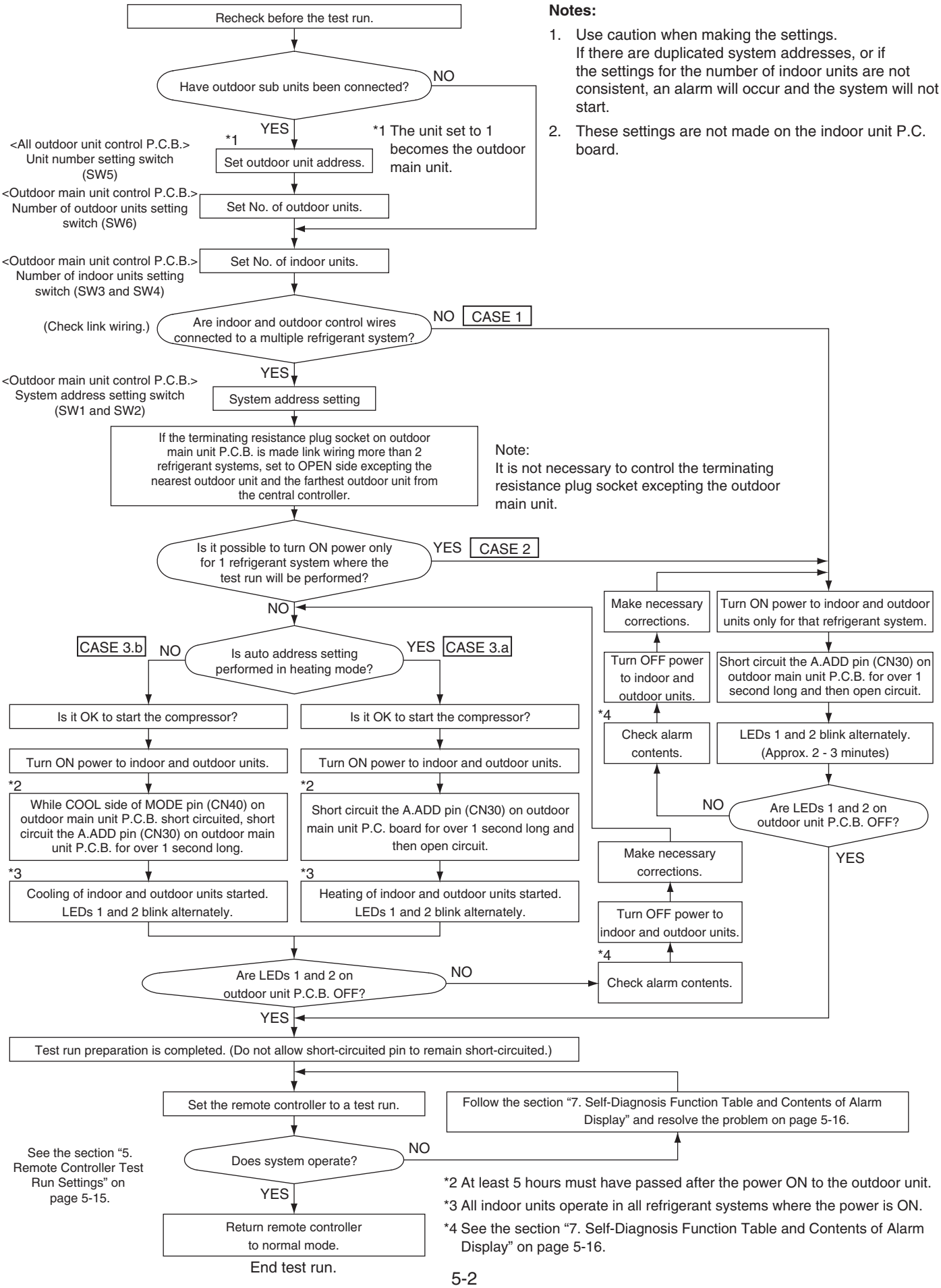
(8) Be sure to give the operating instructions and warranty certificate to the customer.

(9) When replacing the control PCB, be sure to make all the same settings on the new PCB as were in use before replacement.
The existing EEPROM is not changed, and is connected to the new control PCB.

5

2. Test Run Procedure

2. Test Run Procedure



Notes:

1. Use caution when making the settings.
   If there are duplicated system addresses, or if the settings for the number of indoor units are not consistent, an alarm will occur and the system will not start.
2. These settings are not made on the indoor unit P.C. board.

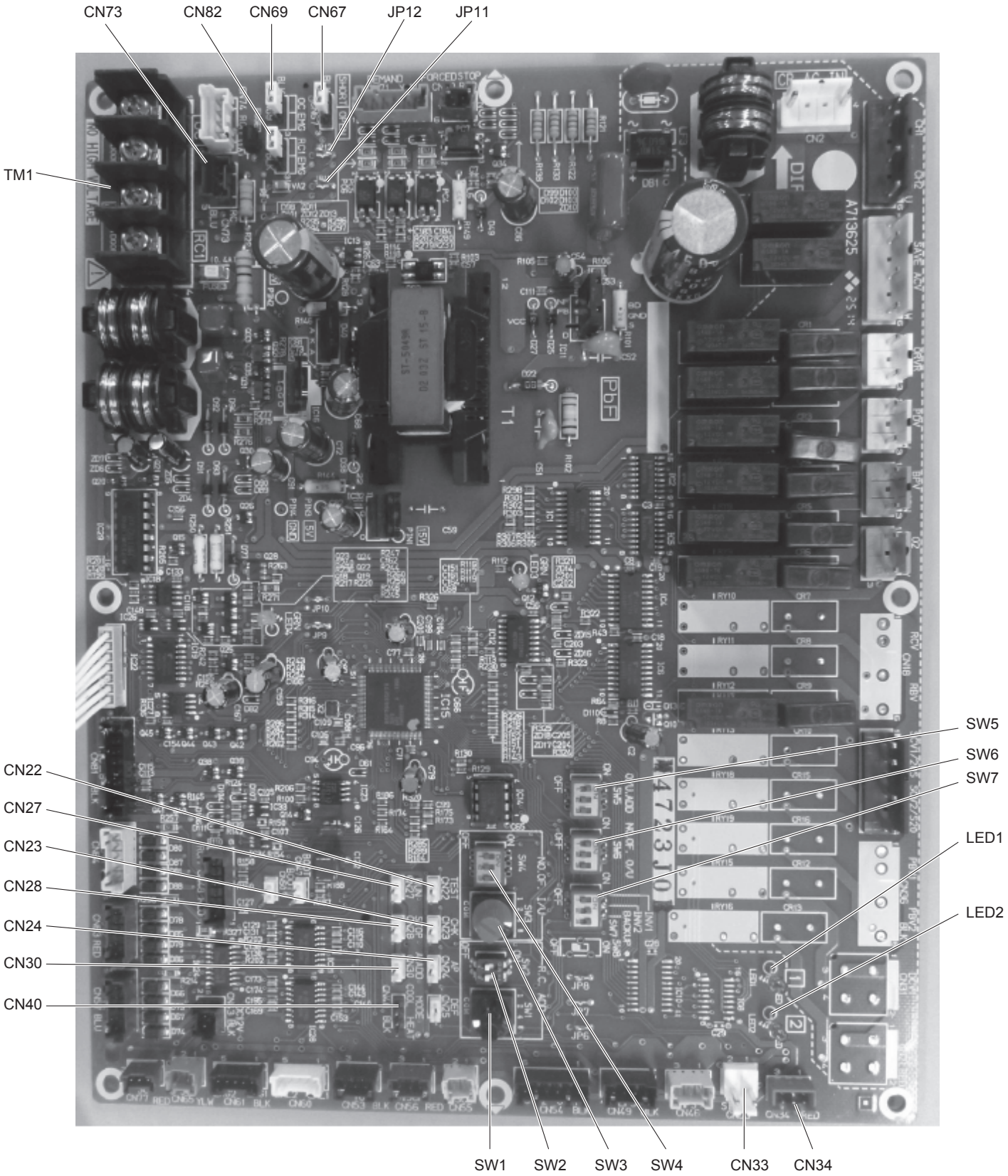
*2 At least 5 hours must have passed after the power ON to the outdoor unit.

*3 All indoor units operate in all refrigerant systems where the power is ON.

*4 See the section "7. Self-Diagnosis Function Table and Contents of Alarm Display" on page 5-16.

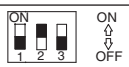
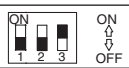
3. Main Outdoor Unit PCB Setting

3. Main Outdoor Unit PCB Setting

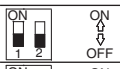
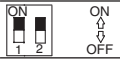


3. Main Outdoor Unit PCB Setting

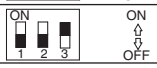
● **Examples of the No. of indoor units settings (SW4, SW3)**

No. of indoor units	Indoor unit setting (SW4) (3P DIP switch) 10 20 30	Indoor unit setting (SW3) (Rotary switch)
1 unit (factory setting)	All OFF 	 Set to 1
11 units	1 ON 	 Set to 1
21 units	2 ON 	 Set to 1
31 units	3 ON 	 Set to 1
40 units	1 & 3 ON 	 Set to 0
58 units	2 & 3 ON 	 Set to 8
64 units	All ON 	 Set to 4

● **Examples of refrigerant circuit (R.C.) address settings (required when link wiring is used) (SW2, SW1)**

System address No.	System address (SW2) (2P DIP switch) 10 20	System address (SW1) (Rotary switch)
System 1 (factory setting)	Both OFF 	 Set to 1
System 11	1 ON 	 Set to 1
System 21	2 ON 	 Set to 1
System 30	1 & 2 ON 	 Set to 0

● **Examples of the No. of outdoor units settings (SW6)**

No. of outdoor units	Outdoor unit setting (SW6) (3P DIP switch)
1 unit (factory setting)	1 ON 
2 units	2 ON 
3 units	1 & 2 ON 
4 units	3 ON 

● **Address setting of main outdoor unit (SW5)**

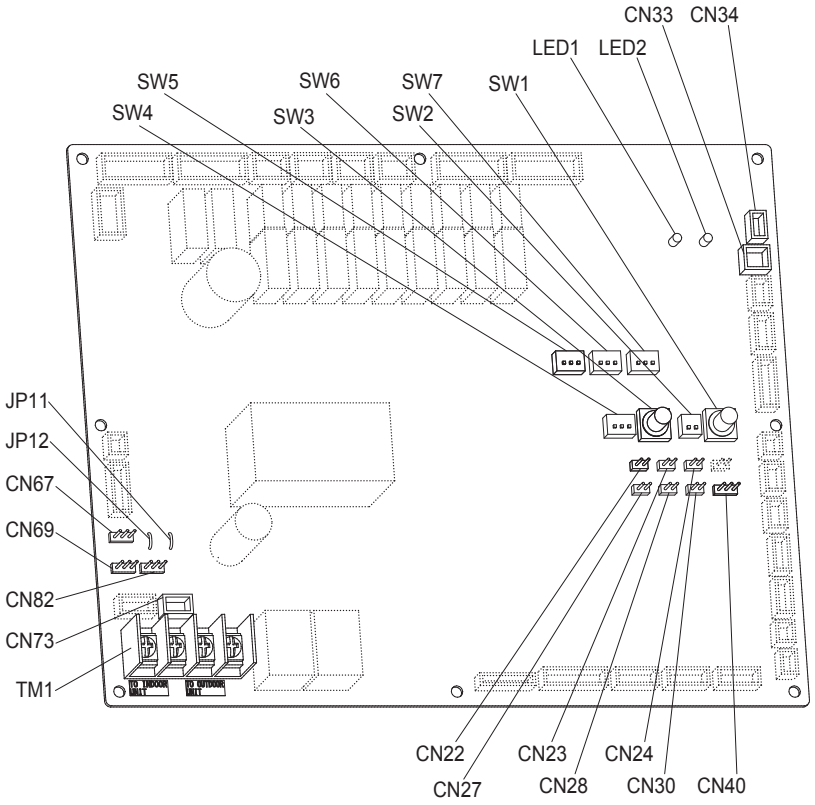
Unit No. setting	Address setting of outdoor unit (SW5) (3P DIP switch)
Unit No. 1 (main unit) (factory setting)	

● **Address setting of sub outdoor unit**

Unit No. setting	Address setting of outdoor unit (SW5) (3P DIP switch)
Unit No. 2 (sub unit)	2 ON 
Unit No. 3 (sub unit)	1 & 2 ON 
Unit No. 4 (sub unit)	3 ON 

The sub unit control PCB contains the same switches as the main unit control PCB for No. of indoor units, No. of outdoor units, and system address. However it is not necessary to set these switches.

3. Main Outdoor Unit PCB Setting



● **Name And Function Of Each Switch On Outdoor Unit Control P.C. Board**

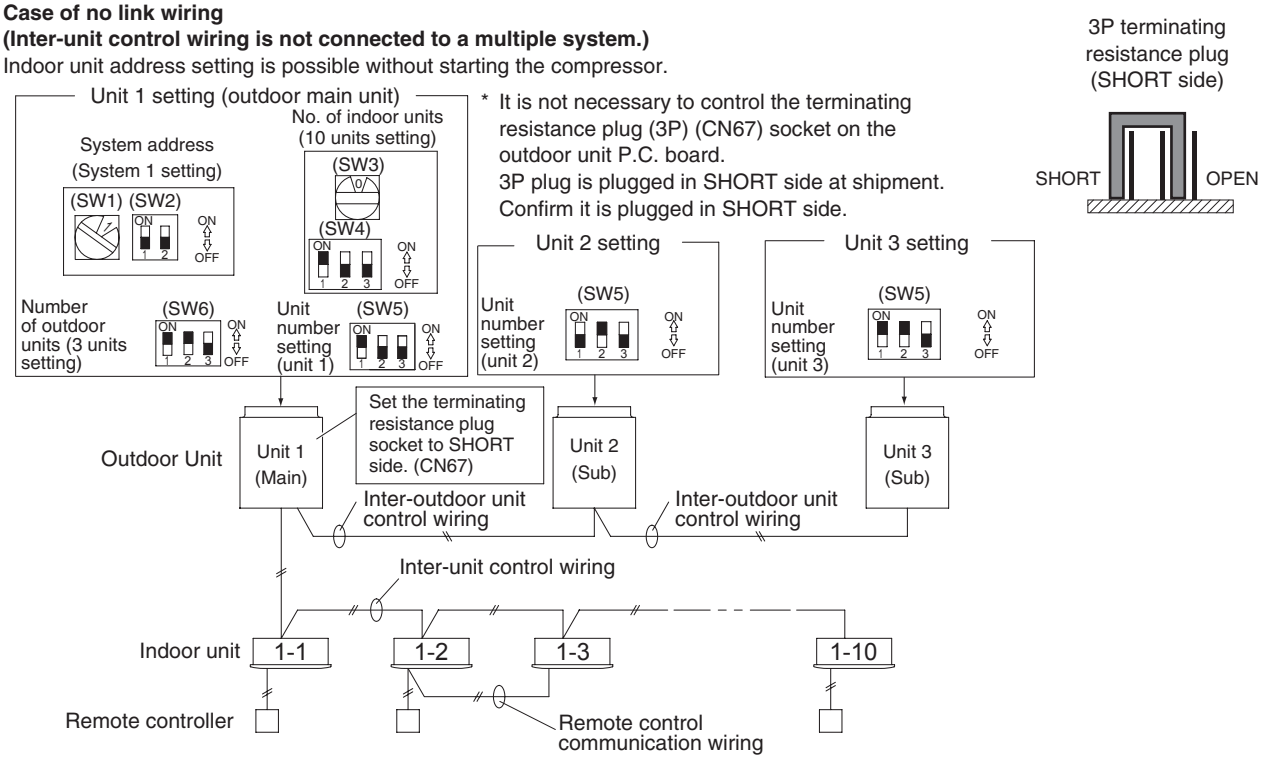
Function Switch	Remarks
MODE pin (3P, BLK) (CN40)	Changes to cooling/heating mode. (Outdoor main unit is only usable.) When in normal operation: When short circuited the COOL side, indoor unit operation in the same refrigerant system changes to all cooling mode. When short circuited the HEAT side, indoor unit operation in the same refrigerant system changes to all heating mode. When in auto address setting: Changes to heating mode with open-circuit.
A.ADD pin (2P, WHT) (CN30)	Short circuited for over 1 second long → Auto address setting starts with open-circuit. If short circuit lasts for over 1 second long during auto address setting, the setting is interrupted.
CHK pin (2P, WHT) (CN23)	When short circuited, test run begins. (If the remote controller is connected in test run mode, it is automatically cancelled after 1 hour.) Also, if short-circuit is cancelled, test run mode is cancelled.
RC plug (3P, BLU) (CN73)	Connects to outdoor unit maintenance remote controller and content of alarm message will be checked.
RUN pin (2P, WHT) (CN27)	When short circuited and pulse signal is given, all indoor units operate in the same refrigerant system.
STOP pin (2P, WHT) (CN28)	When short circuited and pulse signal is given, all indoor units stop in the same refrigerant system. (When short circuited, operation cannot be performed by the indoor unit's remote controller.)
AP pin (2P, WHT) (CN24)	Can be used when vacuuming the outdoor unit.
SNOW plug (3P, RED) (CN34)	Can be used when installing a snowfall sensor device.
SILENT plug (2P, WHT) (CN33)	Can be used when setting the outdoor unit fan in sound absorbing mode.
OC EMG terminal (3P, BLK) (CN69)	If “TO INDOOR UNIT” accidently connected to high voltage, use the terminal base TM1. Method: 1. Replace the pins 1 and 2 of CN69 with the pins 2 and 3. 2. Disconnect JP11.
RC1 EMG terminal (3P, BLK) (CN82)	If “TO OUTDOOR UNIT” accidently connected to high voltage, use the terminal base TM1. Method: 1. Replace the pins 1 and 2 of CN82 with the pins 2 and 3. 2. Disconnect JP12.

4. Auto Address Setting

4. Auto Address Setting

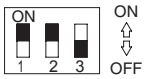
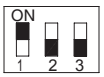
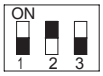
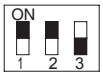
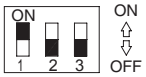
Example: Basic Wiring Diagram (1)

- **Case of no link wiring**
  (Inter-unit control wiring is not connected to a multiple system.)
  Indoor unit address setting is possible without starting the compressor.



Case 1

Auto Address Control from Outdoor Unit

1. Regarding the number of outdoor units, set the Dip switch (SW6) for setting the number of outdoor units on Unit 1 control P.C.B to 3 units  and the Unit Number Setting Dip switch (SW5) to unit number 1. 
   This unit becomes the outdoor main unit.
2. Set the Unit Number Setting switch (SW5) on unit 2 control P.C. board to unit number 2. 
   Set the Unit Number Setting switch (SW5) on unit 3 control P.C. board to unit number 3. 
3. Check the refrigerant system's Address Setting Rotary switch (SW1) on outdoor main unit control P.C. board to “1” and the Dip switch (SW2) to “0” (at shipment). 
4. Regarding the setting of the number of indoor units connected to the outdoor unit, set the Dip switch (SW4) for setting the number of indoor units on outdoor main unit control P.C. board connected to the outdoor unit to “1”. 
   If the Rotary switch (SW3) set to “0”, 10 units can be prepared for operation.
5. Turn on power to indoor and outdoor units.
6. Short circuit the A.ADD pin (CN30) on outdoor main unit control P.C. board for over 1 second long and open circuit.
   Communication for auto address setting begins.
   * To cancel, short circuit the A.ADD pin (CN30) again for over 1 second long and then open circuit. The LED that indicates auto address setting goes out and the process is stopped.
     Be sure to perform auto address setting again.

   ⇩
   Auto address setting is completed when LEDs 1 and 2 on outdoor main unit control P.C. board go out.
   ⇩
7. Remote control operation is now available.
   * When auto address setting is controlled by the remote controller, perform auto address setting by the remote controller after step 5 described above.

5

4. Auto Address Setting

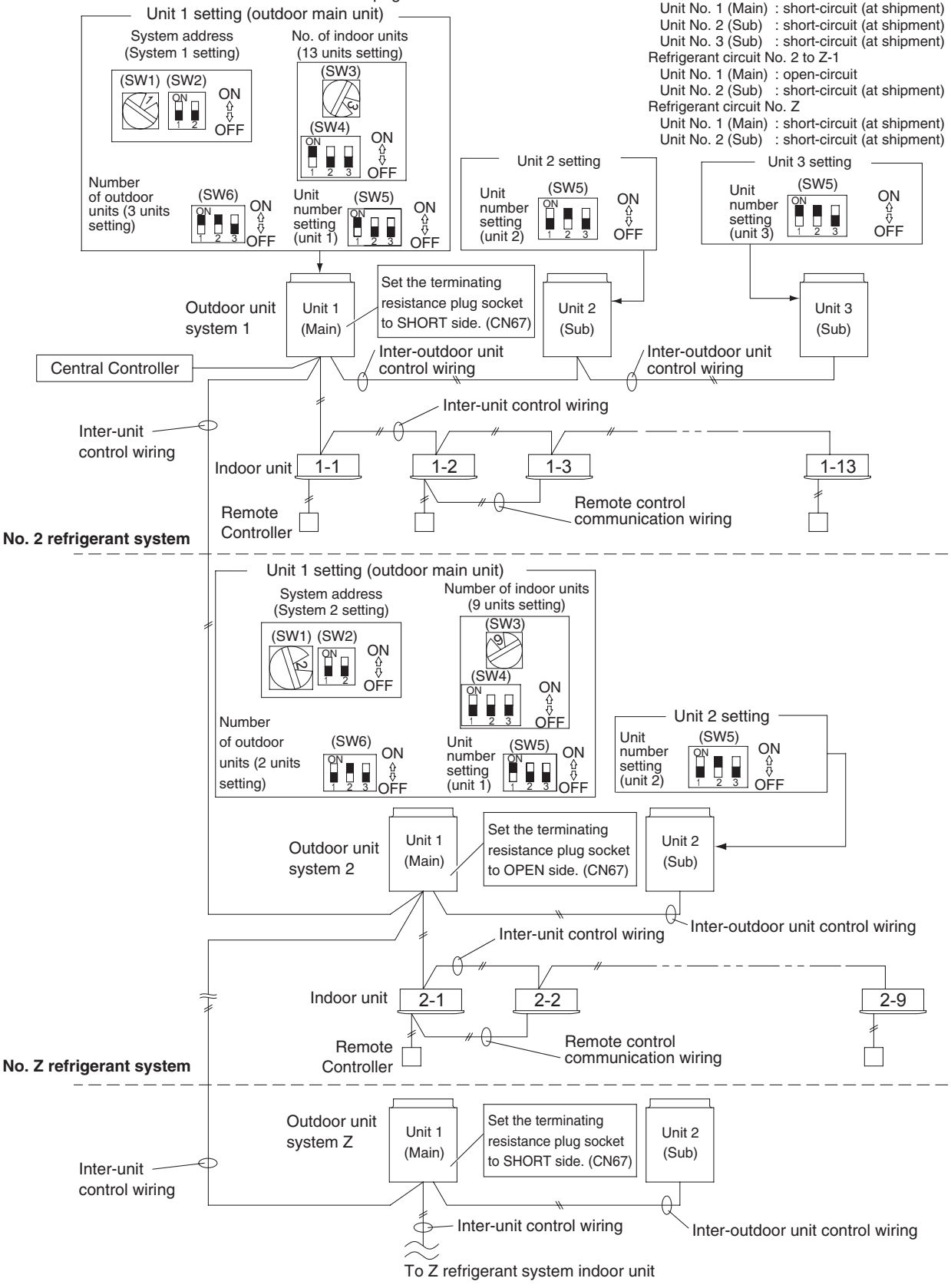
Example: Basic Wiring Diagram (2)

- **Case of link wiring**

No. 1 refrigerant system

* See the section “ATTENTION!” on page 5-8.

Setting of terminal plug (CN67)
Refrigerant circuit No. 1
Unit No. 1 (Main) : short-circuit (at shipment)
Unit No. 2 (Sub) : short-circuit (at shipment)
Unit No. 3 (Sub) : short-circuit (at shipment)
Refrigerant circuit No. 2 to Z-1
Unit No. 1 (Main) : open-circuit
Unit No. 2 (Sub) : short-circuit (at shipment)
Refrigerant circuit No. Z
Unit No. 1 (Main) : short-circuit (at shipment)
Unit No. 2 (Sub) : short-circuit (at shipment)



4. Auto Address Setting

ATTENTION!

Adjustment of terminating resistance (plug) is necessary.

Communication failure will occur unless adjustment is made correctly.

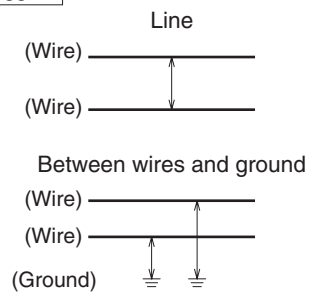
- Terminating resistance (plug) is mounted on outdoor unit control P.C. board.
- When connecting central controller, interface or peripheral equipment, adjustment of terminating resistance (plug) is necessary. Although the connection is not made, confirmation is necessary for VRF systems.
- In the case of a refrigerant system, the terminating resistance (plug) for this inter-unit control wiring (S-LINK wiring) is one location (See the section “4. Auto Address Setting” on page 5-6).
  For 2 or more refrigerant systems, 2 locations should be valid (“SHORT” for VRF systems at shipment). See the section “4. Auto Address Setting” on page 5-6.
  In order to make 2 locations valid, let the terminating resistance (plug) of the nearest outdoor unit and the farthest outdoor unit be valid (SHORT side) from the location of central controller.
  In other refrigerant systems excepting 2 locations described above, make them invalid (OPEN side).
  It is prohibited making more than 3 locations of terminating resistance valid.
- Since the use of linking the sub outdoor units of VRF systems is not connected to the inter-unit control wiring, it is not necessary to make the terminating resistance invalid “OPEN side”.

Make final confirmation regarding the central controller or interface & inter-unit control wiring (S-LINK wiring) connected to the peripheral equipment.
Measure the line resistance with a tester and check whether the values are in the range of 30Ω - 120Ω.

If the resistance values are out of range, check again the terminating resistance.
Nevertheless, if the values are out of range, the problem comes from wiring.

- Is the connection properly made?
- Are there any scratches or damages on the coated surface?
- Measure the line, between wires and ground with the 500V megger (insulation resistance meter) and check the values are over 100MΩ.
- When measuring, be sure to remove both edges of the wire from the terminal board. If not removed, it will be damaged.
- If the line resistance is within 100MΩ, newly carry out the wiring work.

Megger



5

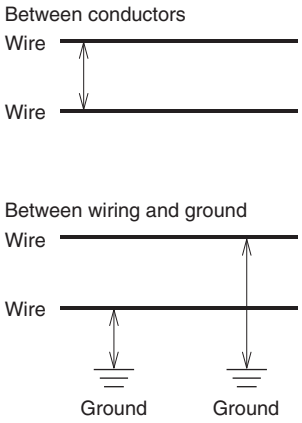
4. Auto Address Setting

● **Final check before operation**

Final check must be done under the conditions of inter-outdoor unit control wiring connected to the centralized control system and the resistor between conductors must be measured by a Megger. Check if it is showing between 30Ω and 120Ω.

If the resistance value is out of range, check adjustment of the termination resistor again. Even if it is out of range, the problem is caused by wiring.

- Is the wiring connection properly completed?
- Are there any scratches or deterioration on the coverage?
- Measure between conductors and also between wiring and ground by 500V Megger insulation resistance tester.
  Make sure the Megger is showing more than 100MΩ.
  When measuring, remove both ends of the wiring from the terminal board.
  If not removed, it will be damaged.
  If it is less than 100MΩ, a new wiring connection should be made.



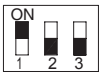
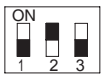
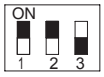
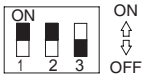
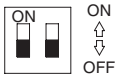
● **Make settings according to each case as described below.**

- In case of possibility of turning ON power to indoor/outdoor units for each refrigerant system → Case 2
- In case of impossibility of turning ON power to indoor/outdoor units for each refrigerant system
  Auto address setting in heating mode → Case 3.a
  Auto address setting in cooling mode → Case 3.b

Case 2 **Possibility of turning ON power to indoor/outdoor units for each refrigerant system**

Indoor unit address setting can be made without starting the compressor.

How to Control Auto Address Setting from Outdoor Unit

1. Set the unit number setting switch (SW5) on unit 1 (outdoor main unit) control P.C. board to: 
   Unit 1: This unit becomes the outdoor main unit.
   Set the unit number setting switch (SW5) on unit 2 control P.C. board to: 
   Set the unit number setting switch (SW5) on unit 3 control P.C. board to: 
2. Regarding the number of outdoor units, set the Dip switch (SW6) for setting the number of outdoor units on outdoor main unit control P.C. board to 3 units. 
3. Check that the refrigerant system address Rotary switch (SW1) on outdoor main unit control P.C. board in 1 refrigerant system is set to “1” and the Dip switch (SW2) is set to “0” (at shipment). 
4. Regarding the number of indoor units connected to the outdoor unit, set the Dip switch (SW4) for setting the number on indoor units on outdoor main unit control P.C. board to “1”  and set the Rotary switch (SW3) to “3”.
   Total of 13 units installation are made.
5. Turn ON power to all indoor and outdoor units in one refrigerant system.
6. Short circuit the A.ADD pin (CN30) of outdoor main unit for over 1 second long and then open circuit.
   Communication for auto address setting begins.

   ⇩

   * To cancel, again short circuit the A.ADD pin (CN30) for over 1 second long and then open circuit.
   LEDs 1 and 2 that indicate auto address setting is in progress go out and that process is stopped.
   Be sure to perform auto address setting again.

   Auto address setting is completed when the compressor stops and LEDs 1 and 2 on outdoor main unit control P.C. board go out.

   ⇩
7. Turn ON power to indoor and outdoor units only for another refrigerant system and repeat steps 1 to 5 described above. Complete auto address setting for each refrigerant system.

   ⇩
8. Remote control operation is now available.

   * When performing auto address setting by the remote controller, perform auto address setting by the remote controller after step 5.

● See the section “Auto Address Setting from Remote Controller” on page 5-12.

5

4. Auto Address Setting

Case 3.a **Auto Address Setting in Heating Mode**

● In case of impossibility of turning ON power to indoor/outdoor units in each refrigerant system:
Indoor unit auto address setting cannot be made unless the compressor is started.

How to Control Auto Address from Outdoor Unit

1. Make all settings following the same procedure described under steps 1 to 4 in Case 2 .
5. Turn ON power to all indoor and outdoor units in all refrigerant systems.

6. If you wish to make auto address setting in heating mode , short circuit the A.ADD pin (CN30) on outdoor main unit control P.C. board for the desired auto address setting in a refrigerant system for over 1 second long and then open circuit.
Be sure to make settings in each refrigerant system. It is impossible to perform auto address setting in a multiple refrigerant system simultaneously.

Communication for auto address setting begins and the compressor is started and auto address setting in heating mode begins. All indoor units can also be operated.

* To cancel, again short circuit the A.ADD pin (CN30) for over 1 second long and then open circuit.
LEDs 1 and 2 that indicate auto address setting is in progress go out and that process is stopped.
Be sure to perform auto address setting again.

Auto address setting is completed when the compressor stops and LEDs 1 and 2 on outdoor main unit control P.C. board go out.

7. Short circuit the A.ADD pin (CN30) on outdoor main unit in another refrigerant system for over 1 second long and then open circuit.

Repeat the same procedure and complete auto address setting.

8. Remote control operation is now available.
* When installing auto address setting by the remote controller, control auto address setting by the remote controller after step 5.

● See the section “Auto Address Setting from Remote Controller” on page 5-12.

4. Auto Address Setting

Case 3.b **Auto Address Setting in Cooling Mode**

● In case of impossibility of turning ON power to indoor/outdoor units in each refrigerant system:
The indoor unit auto address setting cannot be made unless the compressor is started.

How to Control Auto Address from Outdoor Unit

1. Make all settings following the same procedure described under steps 1 to 4 of Case 2 .

5. Turn ON power to all indoor and outdoor units in all refrigerant systems.

6. If you wish to make auto address setting in cooling mode , while short circuiting COOL side of the MODE pin (CN40) on outdoor main unit control P.C. board for the desired auto address setting, short circuit the A.ADD pin (CN30) for over 1 second long and then open circuit.
Be sure to install address settings in each refrigerant system. It is impossible to perform auto address setting in a multiple refrigerant system simultaneously.

⇩

Communication for auto address setting begins and the compressor starts and auto address setting in cooling mode begins.
All indoor units can also be operated.

⇩ * To cancel, again short circuit the A.ADD pin (CN30) for over 1 second long and then open circuit.
LEDs 1 and 2 that indicate auto address setting is in progress go out and that process is stopped.
Be sure to perform auto address setting again.

Auto address setting is completed when the compressor stops and LEDs 1 and 2 on outdoor main unit control P.C. board go out.

⇩

7. Short circuit the A.ADD pin (CN30) on outdoor main unit in another refrigerant system for over 1 second long and then open circuit.

⇩

Repeat the same procedure and complete auto address setting.

⇩

8. Remote control operation is now available.

*** It is impossible to perform auto address setting in cooling mode by the remote controller.**

5

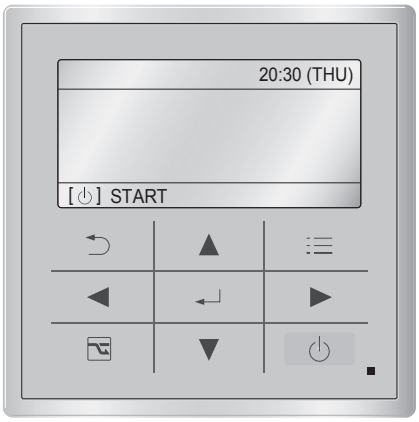
4. Auto Address Setting

Auto Address Setting from Remote Controller

Auto Address Setting from the High-spec Wired Remote Controller (CZ-RTC5B)

① Keep pressing the [↩], [↵] and [▶] buttons simultaneously for 4 or more seconds.
The "Maintenance func" screen appears on the LCD display.

② Press the [▼] or [▲] button to see each menu.
If you wish to see the next screen instantly, press the [◀] or [▶] button.
Select "9. Auto address" on the LCD display and press the [↵] button.



CZ-RTC5B

Maintenance func 20:30 (THU)
9. Auto address
10. Set elec. consumption
11. Set touch key
12. Check touch key
Sel. ◀▶ Page [↵] Confirm

③ The "Auto address" screen appears on the LCD display.
Change the "Code no." to "A1" by pressing the [▼] or [▲] button.

Auto address	20:30 (THU)
Code no.	O/D unit no.
A1	1
Sel. ▶ Next	

④ Select the "O/D unit no." by pressing the [◀] or [▶] button.
Select one of the "O/D unit no." for auto address by pressing the [▼] or [▲] button.
Approximately about 10 minutes are required.
When auto address setting is completed, the units return to normal stopped status.

Auto Address Setting* from the Remote Controller (CZ-RTC4)

* Auto address setting in Cooling mode cannot be done from the remote controller.

NOTE

- Selecting each refrigerant system individually for auto address setting
- Auto address setting for each system
  : Item code "A1"

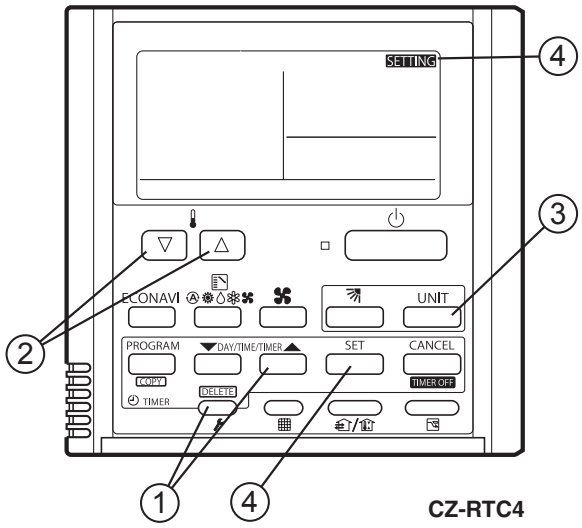
① Press the remote controller timer time [TIMER▲] button and [⚡] button at the same time.
(Press and hold for 4 seconds or longer.)

② Next, press either the temperature setting [▽]/[△] button. (Check that the item code is "A1".)

③ Use either the [UNIT] button to set the system No. to perform auto address setting.

④ Then press the [SET] button.
(Auto address setting for one refrigerant system begins.) (When auto address setting for one system is completed, the system returns to normal stopped status.)
<Approximately 4 – 5 minutes is required.>
(During auto address setting, " SETTING " is displayed on the remote controller.
This message disappears when auto address setting is completed.)

⑤ Repeat the same steps to perform auto address setting for each successive system.



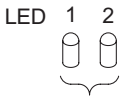
CZ-RTC4

5

4. Auto Address Setting

Display During Auto Address Setting

● On the surface of outdoor unit control P.C. board



* Do not short circuit the A.ADD pin (CN30) again during auto address setting.
LEDs 1 and 2 go out and address setting is interrupted.
* When auto address setting is normally completed, both LEDs 1 and 2 go out.
In other cases, correct settings referring to the following table and perform auto address setting again.

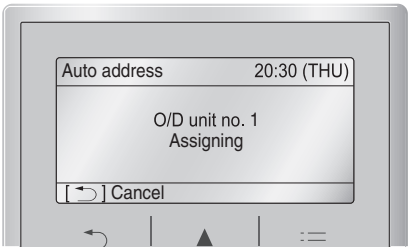
● Contents of LEDs 1 and 2 on outdoor unit control P.C. board

☼ : Illuminating
✷ : Blinking
● : Go out

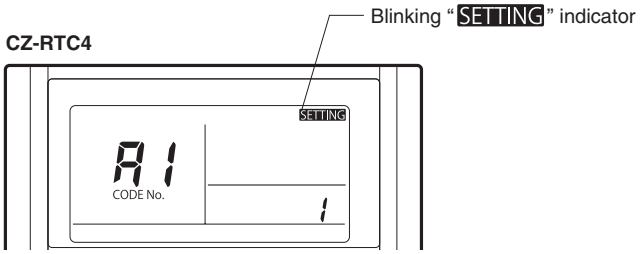
LED 1	LED 2	Contents of display
☼	☼	After turned ON power (not during auto address setting), it is entirely impossible to communicate with the indoor unit in the system.
●	☼	After turned ON power (not during auto address setting), although the indoor units more than 1 unit in the system are recognized, there are inconsistencies between the number of indoor units and setting number of indoor units.
✷ Alternately ✷		Under auto address setting
●	●	Auto address setting completed
✷ Simultaneously ✷		There are inconsistencies between the number of indoor units and setting number of indoor units. (at the time of auto address setting)
✷ Alternating ✷		See the section “7. Self-Diagnosis Function Table and Contents of Alarm Display” on page 5-16.

● Display of remote controller

CZ-RTC5B



CZ-RTC4



Request concerning recording the indoor/outdoor unit combination Nos.

After auto address setting has been completed, be sure to record them for future reference.

List the outdoor main unit system address and the addresses of the indoor units in that system in an easily visible location (next to the nameplate), using a permanent marking pen or similar means that cannot be abraded easily.

Example: (Outdoor) 1 - (Indoor) 1-1, 1-2, 1-3… (Outdoor) 2 - (Indoor) 2-1, 2-2, 2-3…

These numbers are necessary for later maintenance. Please be sure to indicate them.

5

4. Auto Address Setting

Checking the indoor unit addresses

Use the remote controller to check the indoor unit address.

CZ-RTC5B (High-spec wired remote controller)

① Keep pressing the [↩], [↵] and [▶] buttons simultaneously for 4 or more seconds.
The “Maintenance func” screen appears on the LCD display.

Maintenance func 20:30 (THU)
1. Outdoor unit error data
2. Service contact
3. RC setting mode
4. Test run
Sel. Page [↵] Confirm

② Press the [▼] or [▲] button to see each menu.
If you wish to see the next screen instantly, press the [◀] or [▶] button.
Select “7. Simple settings” on the LCD display and press the [↵] button.

Maintenance func 20:30 (THU)
5. Sensor info.
6. Servicing check
7. Simple settings
8. Detailed settings
Sel. Page [↵] Confirm

③ The “Simple settings” screen appears on the LCD display.
Select the “Unit no.” by pressing the [▼] or [▲] button for changes.

Simple settings	20:30 (THU)	
Unit no.	Code no.	Set data
3-1	01	0001
Sel. Next		

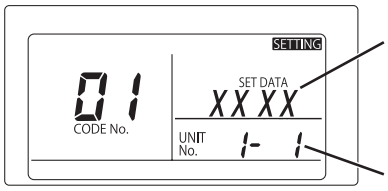
The indoor unit fan operates only at the selected indoor unit.

CZ-RTC5B

CZ-RTC4 (Timer remote controller)

<If 1 indoor unit is connected to 1 remote controller>

1. Press and hold the [⚡] button and [🏠/🏢] button for 4 seconds or longer (simple settings mode).
2. The address is displayed for the indoor unit that is connected to the remote controller.
   (Only the address of the indoor unit that is connected to the remote controller can be checked.)
3. Press the [⚡] button again to return to normal remote controller mode.

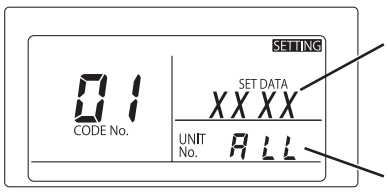


Number changes to indicate which indoor unit is currently selected.

Indoor unit address

<If multiple indoor units are connected to 1 remote controller (group control)>

1. Press and hold the [⚡] button and [🏠/🏢] button for 4 seconds or longer (simple settings mode).
2. “ALL” is displayed on the remote controller.
3. Next, press the [UNIT] button.
4. The address is displayed for 1 of the indoor units which is connected to the remote controller. Check that the fan of that indoor unit starts and that air is discharged.
5. Press the [UNIT] button again and check the address of each indoor unit in sequence.
6. Press the [⚡] again to return to normal remote controller mode.



Number changes to indicate which indoor unit is currently selected.

Indoor unit address

5

5. Remote Controller Test Run Settings

5. Remote Controller Test Run Settings

CZ-RTC5B (High-spec wired remote controller)

① Keep pressing the [↩], [↵] and [▶] buttons simultaneously for 4 or more seconds.
The "Maintenance func" screen appears on the LCD display.

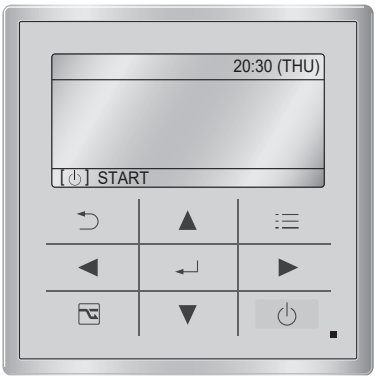
Maintenance func 20:30 (THU)
1. Outdoor unit error data
2. Service contact
3. RC setting mode
4. Test run
↕ Sel. ◀ ▶ Page [↵] Confirm

② Press the [▼] or [▲] button to see each menu.
If you wish to see the next screen instantly, press the [◀] or [▶] button.
Select "4. Test run" on the LCD display and press the [↵] button.

Maintenance func 20:30 (THU)
1. Outdoor unit error data
2. Service contact
3. RC setting mode
4. Test run
↕ Sel. ◀ ▶ Page [↵] Confirm

Change the display from OFF to ON by pressing the [▼] or [▲] button. Then press the [↵] button.

Test run 20:30 (THU)
Test run
▲ ON ▼
↕ Change [↵] Confirm

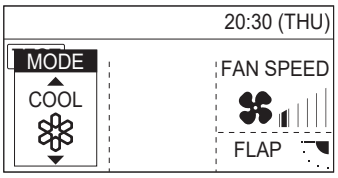


CZ-RTC5B

③ Press the [↩] button. "TEST" will be displayed on the LCD display.

20:30 (THU)
TEST
[⏻] START

④ Press the [⏻] button. Test run will be started.
Test run setting mode screen appears on the LCD display.



CZ-RTC4 (Timer remote controller)

1. Press the remote controller [ ] button for 4 seconds or longer.
   Then press the [⏻] button.

- "TEST" appears on the LCD display while the test run is in progress.
- The temperature cannot be adjusted when in Test Run mode.
  (This mode places a heavy load on the machines.
  Therefore use it only when performing the test run.)

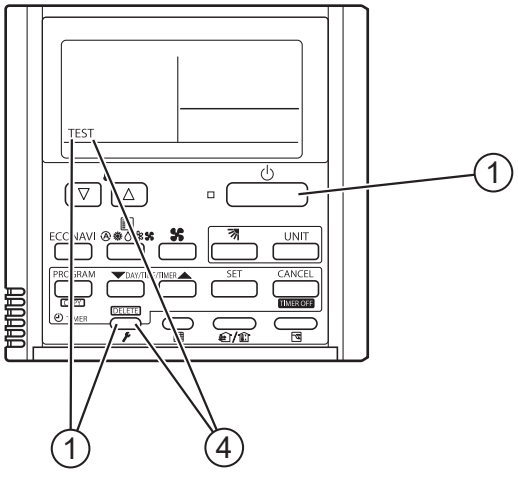
2. The test run can be performed using the HEAT, COOL, or FAN operation modes.

NOTE

The outdoor units will not operate for approximately 3 minutes after the power is turned ON and after operation is stopped.

3. If correct operation is not possible, a code is displayed on the remote controller LCD display.
   (See the section "7. Self-Diagnosis Function Table and Contents of Alarm Display" and correct the problem.)
4. After the test run is completed, press the [ ] button again.
   Check that "TEST" disappears from the LCD display.
   (To prevent continuous test runs, this remote controller includes a timer function that cancels the test run after 60 minutes.)

* If the test run is performed using the wired remote controller, operation is possible even if the cassette-type ceiling panel has not been installed. ("P09" display does not occur.)



CZ-RTC4

6. Caution for Pump Down
7. Self-Diagnosis Function Table and Contents of Alarm Display

6. Caution for Pump Down

Pump down means refrigerant gas in the system is returned to the outdoor unit.
Pump down is used when the unit is to be moved, or before servicing the refrigerant circuit.
(Refer to the section 3 in the Service Manual & Test Run Service Manual)

CAUTION

- **This outdoor unit cannot collect more than the rated refrigerant amount as shown by the nameplate on the back.**
- **If the amount of refrigerant is more than that recommended, do not conduct pump down. In this case use another refrigerant collecting system.**

7. Self-Diagnosis Function Table and Contents of Alarm Display

How to know LEDs 1 and 2 alarm display on outdoor unit control P.C. board

<table>
<tr><th>LED 1</th><th>LED 2</th><th>Contents of Alarm Display</th></tr>
<tr><td>☀</td><td>☀</td><td rowspan="2">Alarm display
After LED1 blinks M times, LED2 blinks N times.
This will be repeated.

<table>
<tr><td></td><td>Number of blinks</td><td>Type of alarm</td></tr>
<tr><td rowspan="5">M</td><td>2</td><td>Alarm P</td></tr>
<tr><td>3</td><td>Alarm H</td></tr>
<tr><td>4</td><td>Alarm E</td></tr>
<tr><td>5</td><td>Alarm F</td></tr>
<tr><td>6</td><td>Alarm L</td></tr>
</table>
N = number of alarm No.

For example: After LED1 blinks twice, LED2 blinks 17 times. This will be repeated.
The alarm shows “P17”.</td></tr>
<tr><td colspan="2">Alternating</td></tr>
</table>

(☀ : Blink) Connect the outdoor unit maintenance remote controller to the RC plug (3P, BLU) on outdoor main unit control P.C. board and make confirmation.

■ Self-Diagnosis Function Table

- Cause and countermeasure against the symptom of auto address failure

Symptom	Cause and countermeasure
● When turning ON power to the outdoor main unit, LEDs 1 and 2 illuminate or blink excluding going out. Auto address setting is not available.	See “Contents of Alarm Display” and make corrections on this page.
● When auto address setting by the remote controller begins, the alarm display appears immediately.	
● When auto address setting by the remote controller begins, no display appears.	Are remote control wiring and inter-unit control wiring connected properly? Is indoor unit turned ON power?

- Auto address setting begins but finishes improperly.

Symptom	Cause and countermeasure
● Soon after a few seconds or after a few minutes, the alarm content is displayed on the remote controller.	See “Contents of Alarm Display” and make a correction on this page.
● After a few minutes when auto address setting begins, the compressor may occasionally start and stop several times. LEDs 1 and 2 on outdoor unit control P.C. board show the display of auto address setting with blinking alternately but LEDs 1 and 2 do not indicate the completion of auto address setting (go out).	Are remote control wiring and inter-unit control wiring connected properly? Is indoor unit turned ON power?

7. Self-Diagnosis Function Table and Contents of Alarm Display

- If the alarm display “E15”, “E16” and “E20” appear after auto address setting began, check the following items.

Alarm display	Alarm contents
E15	Recognized number of indoor units at the time of auto address setting are fewer than that of indoor units set by SW3 and SW4 on outdoor main unit P.C. board.
E16	Recognized number of indoor units at the time of auto address setting are more than that of indoor units set by SW3 and SW4 on outdoor main unit P.C. board.
E20	Outdoor unit could not entirely receive serial communication signal from the indoor unit within 90 seconds after auto address setting began.

Check	E15	E16	E20
Have you forgotten to turn ON power to indoor unit?	○		○
Are indoor and outdoor control wiring connected properly? (Check for incorrect wiring to open & short-circuit, terminal plug and remote control terminal.)	○	○	○
Is remote control wiring connected properly? (Check for open & short-circuit, wrong connection to indoor/outdoor unit control wiring terminal, inter-unit control wiring.)	○		○
Are the number of the connecting indoor units set by SW3 and SW4 of outdoor main unit control P.C. board connected properly?	○	○	
Is additional appropriate amount of refrigerant charge? (Compressor ON at the time of auto address setting)	○		
Is the refrigerant tubing connected properly? (Compressor ON at the time of auto address setting)	○	○	
Are E1 and E3 sensors of indoor unit normal? (Compressor ON at the time of auto address setting)	○		
Are there any wrong system address installed in indoor units caused by manual or incorrect auto address control?		○	

1) When auto address setting from outdoor main unit control P.C. board or remote controller begins, “Under Setting” appears on the remote controller as for normal indoor units under the inter-unit control wirings and remote control wirings.
   LEDs 1 and 2 indicators on outdoor main unit control P.C. board blink alternately.

2) If there is an error at the inter-unit control wiring of the remote controller when in the indoor unit group control, address setting may not occasionally be made although “under setting” is displayed.

3) Although the alarm “E15” and “E16” are displayed, addresses will be installed in the recognized indoor units.
   The installed addresses can be checked by the remote controller. See the section “Checking the indoor unit addresses” on page 5-14.

- When operating the remote controller after auto address setting completed (LEDs 1 and 2 indicators on outdoor main unit control P.C. board go out), correct the symptom if the following alarms appear on the remote controller.

Remote control display	Cause
No display	Remote controller is not connected properly. (Power failure) When auto address setting was completed, the power of indoor unit was turned off.
E01	Remote controller is not connected properly. (Receiving failure from remote control) Indoor unit address was mistakenly controlled by undesired indoor unit remote controller. (Impossible to communicate with outdoor unit)
E02	Remote controller is not connected properly. (Impossible to communicate with indoor unit by remote controller)
P09	Connector of indoor unit ceiling panel is not connected properly.

If any other alarm appear on the display, refer to the section 6 in the Service Manual & Test Run Service Manual.

- Alarm display can be checked by the outdoor maintenance remote controller. When operating, refer to the section 6 in the Service Manual & Test Run Service Manual.
  Alarm display can also be checked by number of blinking of LEDs 1 and 2 on outdoor unit control P.C. board.
  (See the section “How to know LEDs 1 and 2 alarm display on outdoor unit control P.C. board” under the section “7. Self-Diagnosis Function Table and Contents of Alarm Display”.

Remote control display	Alarm contents
E06	Outdoor unit receiving failure from indoor unit
E12	Prohibit starting auto address setting
E15	Auto address alarm (A small number of indoor units)
E16	Auto address alarm (A large number of indoor units)

7. Self-Diagnosis Function Table and Contents of Alarm Display

Remote control display	Alarm contents
E20	No indoor unit during auto address setting
E21	Receiving failure of main system from sub system when link wiring is used for outdoor units
E22	Receiving failure of sub system from main system when link wiring is used for outdoor units
E24	Receiving failure of relay control unit from outdoor unit(s)
E25	Failure of outdoor unit address setting (Duplicative)
E26	Inconsistencies in number of outdoor units
E29	Failure of outdoor unit to receive relay control unit
E30	Failure of transferring outdoor unit serial
E31	Wiring error between the P.C. board ([L-Pow], [HIC] wire)
F04	Compressor 1 discharge temperature sensor abnormal [DISCH1]
F05	Compressor 2 discharge temperature sensor abnormal [DISCH2]
F06	Outdoor unit heat exchanger 1 gas (inlet) temperature sensor abnormal [EXG1]
F07	Outdoor unit heat exchanger 1 liquid (outlet) temperature sensor abnormal [EXL1]
F08	Outdoor temperature sensor abnormal [TO]
F12	Compressor inlet temperature sensor abnormal [SCT]
F14	Supercooling gas temperature sensor abnormal [SCG]
F16	High pressure sensor abnormal, high-load [HPS]
F17	Low pressure sensor abnormal [LPS]
F23	Outdoor unit heat exchanger 2 gas (inlet) temperature sensor abnormal [EXG2]
F24	Outdoor unit heat exchanger 2 liquid (outlet) temperature sensor abnormal [EXL2]
F31	Outdoor unit nonvolatile memory (EEPROM) error
H01	Compressor 1 abnormal current values (Overcurrent)
H03	Compressor 1 CT sensor disconnected, short-circuit
H05	Compressor 1 discharge temperature sensor disconnected
H06	Low pressure abnormal lowering
H07	Oil loss - error
H08	Oil sensor (connection) error 1
H11	Compressor 2 abnormal current values (Overcurrent)
H13	Compressor 2 CT sensor disconnected, short-circuit
H15	Compressor 2 discharge temperature sensor disconnected
H21	Compressor 2 HIC alarm
H27	Oil sensor (connection) error 2
H31	Compressor 1 HIC alarm
L04	Outdoor unit address settings duplicated
L05	Indoor unit priority duplicated (For priority indoor)
L06	Indoor unit priority duplicated (Not for priority indoor) and outdoor unit
L10	Outdoor unit capacity settings not made
L17	Inconsistencies in outdoor unit models
L18	4-way valve coil disconnected, line disconnected
P03	Compressor 1 discharge temperature error
P04	Actuation of high pressure switch
P05	Compressor 1 open-phase detection
P11	Cooling water freeze (chiller)
P14	Actuation of O_2 sensor
P15	Compressor 2 open-phase detection
P16	Compressor 1 secondary overcurrent
P17	Compressor 2 discharge temperature error
P19	Compressor 2 start failure (compressor lock, compressor wiring open phase, DCCT failure)
P20	High load (Forgot to open valves)
P22	Outdoor unit fan1 failure (IPM damage, overcurrent, invertor failure, DC fan lock, hole IC open-phase)
P23	Inter lock not cancellation (chiller)
P24	Outdoor unit fan2 failure (IPM damage, overcurrent, invertor failure, DC fan lock, hole IC open-phase)
P26	Compressor 2 secondary overcurrent
P29	Compressor 1 start failure (compressor lock, compressor wiring open phase, DCCT failure)

7. Self-Diagnosis Function Table and Contents of Alarm Display

- Contents of alarm display on remote controller
  For the remote controller, there are other alarm contents listed on the following table besides the alarm display on outdoor main unit control P.C. board.

Wired remote control display	Detected contents	
<E01>	Remote controller detects abnormal signal transmitted from the indoor unit.	● Failure of remote controller to receive. (For group control, signal from the main unit.) ● No setting of system address, indoor unit address, indoor unit individualization / main / sub (Auto address setting not completed.)
<E02>		Remote controller not connected properly.
<<E03>>	Indoor unit failed to receive serial signal by remote controller (or central controller).	
E04	Indoor unit detects abnormal signal from outdoor main unit control P.C. board.	● Receiving failure of remote controller (For group control, signal from the main unit.) ● Inconsistencies in number of connected units and setting units when outdoor unit is turned ON power. (Excepting the system address “0”)
E08	Setting failure	Indoor unit address settings duplicated
<<E09>>		Main remote control settings duplicated
E18	Indoor unit communication error in group control wiring	Main indoor unit failed to receive serial signal from sub indoor unit.
<<L02>>	Setting failure	Indoor unit connected to multiple outdoor units is not for multiple type.
<L03>		Main unit settings duplicated in group control indoor units
L07		Group control wiring connected to individual control indoor unit
L08		Indoor unit address settings not made
<<L09>>		Outdoor unit capacity settings not made
<<F01>>	Indoor unit thermistor failure	Heat exchanger temperature sensor E1
<<F02>>		Water heat exchanger temperature sensor E2 (chiller)
<<F03>>		Heat exchanger temperature sensor E3
<<F10>>		Inlet temperature sensor
<<F11>>		Outlet temperature sensor
<<P09>>	Connection failure of ceiling panel or connector	
<<P01>>	Indoor unit protection	Fan protection thermostat
<<P10>>		Float switch
<<P12>>		Actuation of fan invertor protecting function
F29	Nonvolatile memory IC (EEPROM) failure on indoor unit control P.C. board	

- The parentheses of << >> used in the table of alarm display does not affect anything the operation of other indoor units.
- The parentheses of < > used in the table of alarm display implies that there are two cases : according to the content of the symptom, some affect the operation of other indoor units and others do not affect anything.

Alarm messages displayed on system controller			
Serial communication errors Mis-setting	Error in transmitting serial communication signal	Indoor or main outdoor unit is not operating correctly. Mis-wiring of control wiring between indoor unit, main outdoor unit and system controller.	C05
	Error in receiving serial communication signal	Indoor or main outdoor unit is not operating correctly. Mis-wiring of control wiring between indoor unit, main outdoor unit and system controller. CN1 is not connected properly.	C06
Activation of protective device	Protective device of sub indoor unit in group control is activated.	When using wireless remote controller or system controller, in order to check the alarm message in detail, connect wired remote controller to indoor unit temporarily.	P30

NOTE

1. Alarm messages in << >> do not affect other indoor unit operations.
2. Alarm messages in < > sometimes affect other indoor unit operations depending on the fault.