

# INSTALLATION INSTRUCTIONS FOR SCHEDULE TIMER

## INFORMATION FOR THE PERSON IN CHARGE OF INSTALLATION (ELECTRICAL) WORK AND SERVICING

### Safety Precautions

- Read these Safety Precautions before beginning installation or electrical work, and perform the work only in the correct manner.
- Precautions in this manual are given in the form of "Warnings" or "Cautions." Both types of precautions contain important information related to your safety, the safety of users, and the correct operation, installation, or maintenance of the air conditioning system. Be sure to carefully observe all relevant precautions.

**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.

When installation work is completed, perform a test run and check that no trouble occurs. Also be sure to explain the methods for using the product to the customer, based on the contents of the Operation Manual. In addition, request that the customer keep and conveniently store the "Information for the Person in Charge of Installation (Electrical) Work and Servicing" together with the Operation Manual.

### WARNING

- Request installation and electrical work only from the dealer or a qualified air conditioning specialist. Attempting to carry out installation work on your own, and doing so incorrectly, may result in electrical shock, fire, or other hazards.
- Installation procedures must be performed correctly, carefully following the instructions in this document. Failure to do so may result in electrical shock, fire, or other hazards.
- Electrical work must be performed by a qualified electrician. It must be performed in accordance with technical standards related to electrical equipment, interior wiring regulations, local codes, and the contents of these instructions. Be sure to use a dedicated power supply circuit. Insufficient power circuit capacity or improper electrical work may result in electrical shock or fire.
- Use only the designated cables for wiring, and connect them securely. Fasten cables so that no external force is applied to the terminal connections. Insufficient connections or cable fastening may result in heat generation, fire, or other hazards.

### CAUTION

- Depending on the installation location, it may be necessary to install an earth leakage breaker. Failure to do so may result in electrical shock or fire.
- Do not install in kitchens, workshops, or other locations where there is oil mist in the air.
- Do not install next to windows or in other locations exposed to direct sunlight or in direct contact with outside air.
- Do not install near an elevator, automatic door, industrial sewing machine, or other devices that can be expected to produce electrical noise.

### Accessories for Schedule Timer

No.	Supplied parts	Q'ty	No.	Supplied parts	Q'ty
1	T10 power wire (with current fuse) *1	1	5	Spacers	2
2	T10 relay wire *2	1	6	Wire joints	6
3	Power wire for connection to system controller	1	7	Operation manual	1
4	Screws M4 x 30	1	8	Installation manual	1

\*1 If the fuse blows as a result of a wiring short-circuit, miswiring, or overcurrent, replace it with a 125 V, 0.1 A fuse.

\*2 Use with 3-series type (Fig. 1).

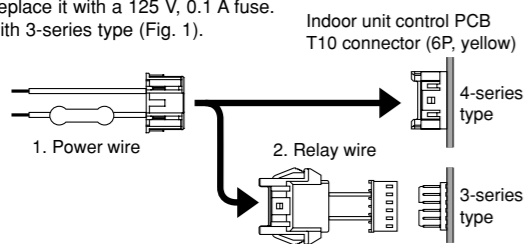


Fig. 1

### Installing the Schedule Timer

- <Note 1> Avoid twisting the inter-unit control wiring or the input/output wiring together with power or other wiring, and avoid running them in the same metal conduit. Doing so can cause malfunction.
- <Note 2> Install the schedule timer at a location away from any sources of electrical noise.
- <Note 3> Install a noise filter or take other appropriate action if electrical noise affects the power supply circuit of the unit.

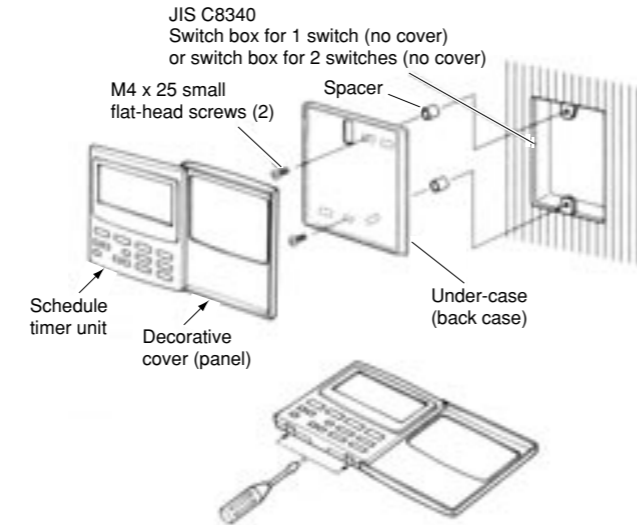


Fig. 2

- (1) Open the panel on the schedule timer unit. Insert a standard (flat-head) screwdriver or similar tool into the notches on the bottom of the schedule timer unit to open and remove the back case.
- (2) Use the 2 supplied M4 small screws and install the schedule timer back case onto the switch box. Before installing, use a screwdriver or similar tool to press on and open the screw holes that correspond to the JIS box that is used. When fastening the case, use spacers and do not tighten the screws too much. If the schedule timer does not fit tightly against the wall, cut the spacers as required to make adjustments.
- (3) Connect the supplied power wire (2-core) and inter-unit control wire (3-core) to the schedule timer unit. (Refer to "Wiring the Schedule Timer.")
- (4) Align the schedule timer unit with the tabs on the back case and press to install it.

### Installation of connected schedule timers

When installing schedule timers (remote controller switches, system controllers, etc.) onto the wall, use the method shown in Figs. 3 and 4.

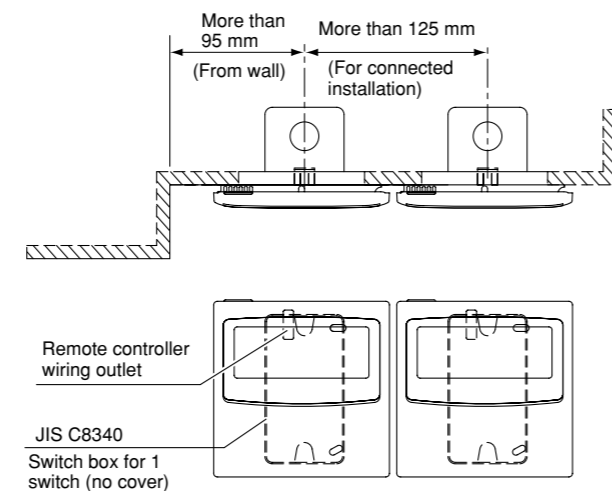


Fig. 3

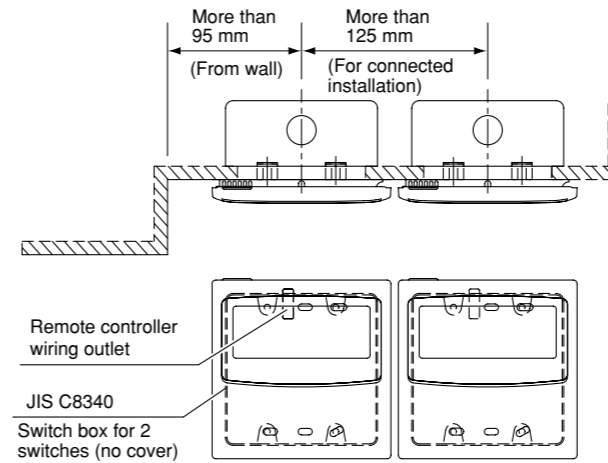


Fig. 4

\* For maintenance reasons, leave a gap of 25 mm or more between the remote controller switch and schedule timer if they are arranged in parallel above/below each other.

### Wiring the Schedule Timer

- Before beginning wiring
  - Use 0.5 – 2 mm<sup>2</sup> wires for field supply wiring.
  - For inter-unit control wiring, use signal wires that allow the remote controller wiring to be differentiated from the power wiring, and take care to prevent miswiring. (Miswiring will damage the schedule timer.)
  - Check that the schedule timer communications wiring and power wiring are connected correctly. (Fig. 5)

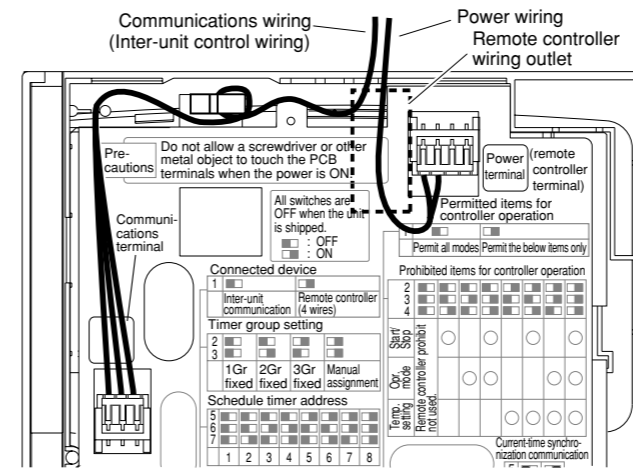


Fig. 5

### <Basic Wiring Diagram>

- Route the A/C inter-unit control wiring for central control as shown in the figure below.
- The maximum number of indoor units that can be connected to a single system is 64. The maximum number of outdoor units is 30.
- The maximum number of schedule timer units that can be connected is 8. (A maximum of 10 schedule timer units and other central control devices can be connected.)

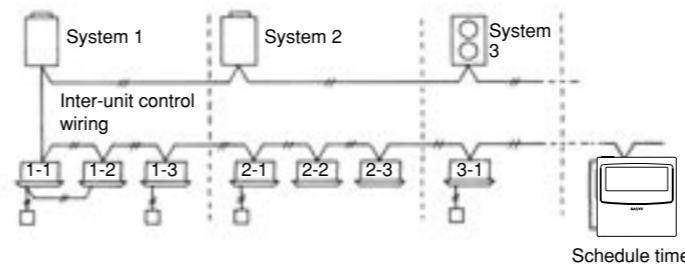


Fig. 6

<Note> Depending on the model of A/C, a local adapter may be required.

### ● Wiring

The schedule timer wiring can be connected by the following two methods. Select one of these connection methods according to the actual installation location. When wiring, extend the lengths of the wires using wire joints (provided) and extension wires (field supply).

**CAUTION** When installing multiple schedule timers, avoid the use of cross-over wiring.

- Connection diagram (Be sure to use the provided wires as the power wiring.)

### If a system controller is also installed:

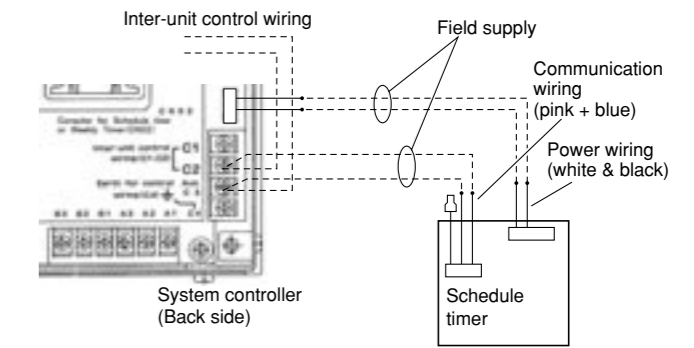


Fig. 7

Connect the wires for the schedule timer inter-unit control wiring (see Note below) to the C1 and C2 terminals on the system controller terminal board. Connect the system controller power wiring to CN02 and to the schedule timer power wires (white + black).

- The inter-unit control wiring has no polarity. The wiring may be connected in either direction to C1 and C2.
  - The power wiring has no polarity. The wiring may be connected in reverse.
  - The length of the power wiring must be no more than 100 m.
- Note: The inter-unit control wires are pink + blue + blue (using wire joint crimping). Use pink + blue wires.**

### If a system controller is not installed (power is supplied from the indoor unit):

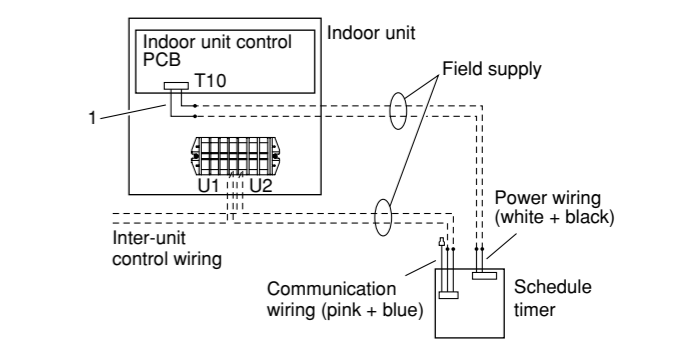


Fig. 8

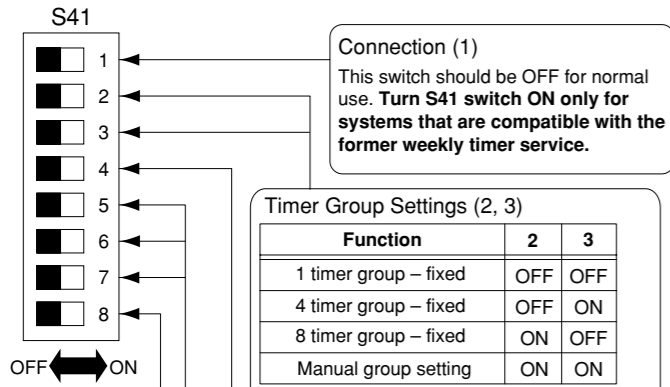
If power is supplied from the indoor unit control PCB of a nearby indoor unit, connect the provided T10 terminal connection wires to the T10 terminal on the indoor unit control PCB, and to the schedule timer power wires.

- The inter-unit control wiring has no polarity. The wiring may be connected in either direction to U1 and U2.
- If necessary, use a relay wire when connecting the wiring to the indoor unit control PCB.
- The power wiring has no polarity. The wiring may be connected in reverse.
- The length of the power wiring must be no more than 200 m.

<Note> The only functions of the schedule timer are indoor unit ON/OFF and remote controller enable/disable operations. It is therefore recommended that during installation, a system controller, remote controller, or similar device be installed next to the schedule timer so that the operation mode and other information can be checked. (If the system controller or other central control device is not present, the schedule timer cannot be used in combination with a system that does not utilize remote controllers.)

## About the Setting Switches

Complete the switch settings before turning ON the schedule timer power.



Timer Group Settings (2, 3)

Function	2	3
1 timer group – fixed	OFF	OFF
4 timer group – fixed	OFF	ON
8 timer group – fixed	ON	OFF
Manual group setting	ON	ON

What is a timer group?  
This is a group of indoor units, created by dividing the central control addresses of the 64 indoor units that are connected to the inter-unit control wiring, and assigning a timer program to each group.

Central Control Main/Sub Switching (4) Sub: OFF Main: ON

- Set to "sub" (OFF) when using together with the AMY adapter, communications adapter, intelligent controller, multi-controller, LON I/F, and system controller.
- In cases other than (1) above, when using together with an ON/OFF central controller, set to "main" (ON) when only 1 schedule timer unit is used.
- In cases other than (1) above, and when using with multiple schedule timer units, set only 1 unit to "main" (ON) and set the remainder to "sub" (OFF).

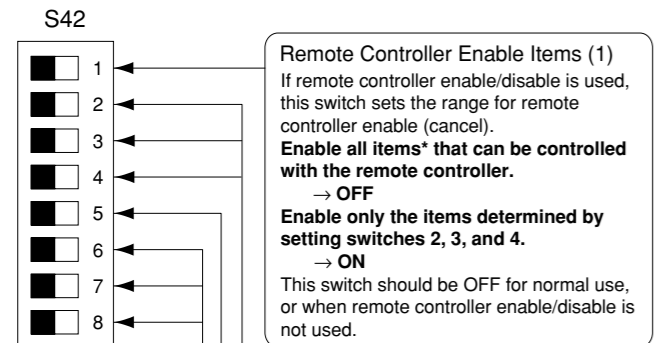
### Schedule Timer Address Settings (5, 6, 7)

A maximum of 8 schedule timer units can be connected to the inter-unit control wiring. If multiple units are connected, use the setting switches and allocate the addresses, taking care to avoid duplication.

Function	5	6	7
Address 1	OFF	OFF	OFF
Address 2	OFF	OFF	ON
Address 3	OFF	ON	OFF
Address 4	OFF	ON	ON
Address 5	ON	OFF	OFF
Address 6	ON	OFF	ON
Address 7	ON	ON	OFF
Address 8	ON	ON	ON

### Holiday and Operation Disable Settings for Each Group (8)

When this setting switch is OFF, units are all controlled together. When this switch is ON, the units are controlled by the settings for each timer group.



Remote Controller Enable Items (1)  
If remote controller enable/disable is used, this switch sets the range for remote controller enable (cancel).  
**Enable all items\* that can be controlled with the remote controller.**  
→ OFF  
**Enable only the items determined by setting switches 2, 3, and 4.**  
→ ON  
This switch should be OFF for normal use, or when remote controller enable/disable is not used.

\* This refers to the following items: start/stop, operation mode, temperature setting, flap, and fan speed.

OFF ↔ ON  
\* These switches are all OFF at the time of delivery.

Remote Controller Disable Item Switches (2, 3, 4)  
When timer remote controller disable is used, set the remote controller disable item switches according to the items for which remote controller operation will be disabled.

Remote controller disabled items	2	3	4
Remote controller disable not used	OFF	OFF	OFF
Start/stop	Central 1	OFF	OFF
Operation mode	Central 4	OFF	ON
Operation mode + Start/stop	OFF	ON	ON
Temperature setting	ON	OFF	OFF
Temperature setting + Start/stop	ON	OFF	ON
Temperature setting + Operation mode	Central 3	ON	ON
Temperature setting + Operation mode + Start/stop	Central 2	ON	ON

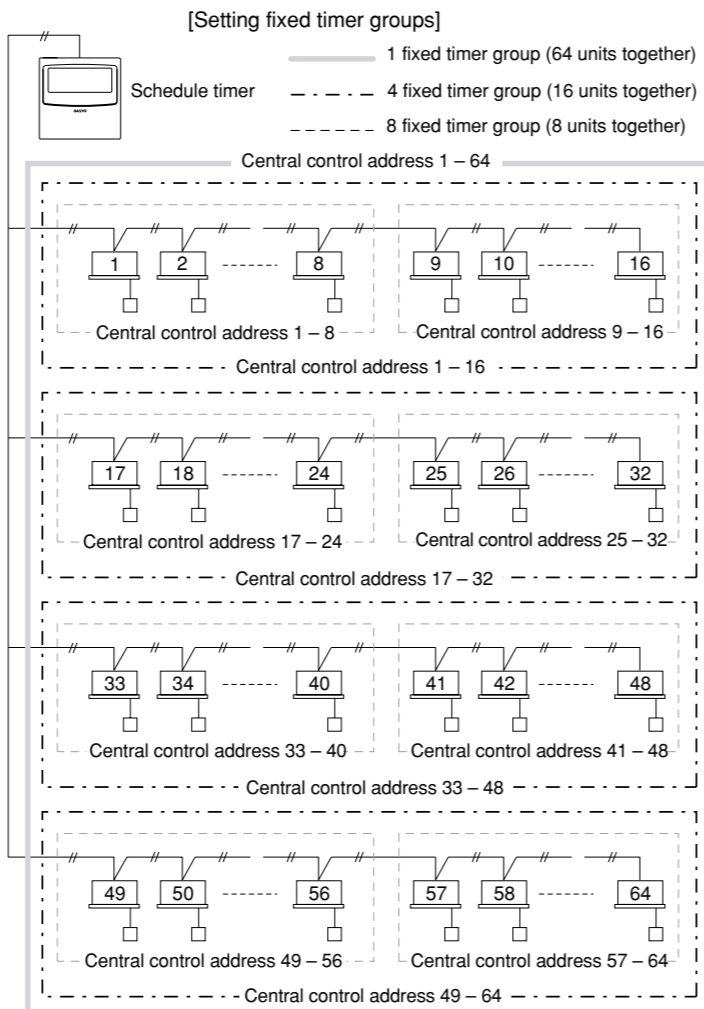
Central 1 – 4 are the designations for the remote-controller disable modes for the system controller.

Simultaneous time communications (5) Disabled: OFF Enabled: ON  
When multiple schedule timers are installed, set this switch to ON to perform time settings for multiple units simultaneously. One minute after the time is set, the time at the other schedule timers will change to match the set time. (Ordinarily this switch is OFF.)

Spare (6, 7, 8)  
Be sure that these switches are OFF when the system is used.

### Creating Timer Groups

The schedule timer can be set for 6 time status changes. These can be used to create up to 8 groups (timer groups). For systems in which schedule timers are used, set the timer groups to match the central control addresses of the indoor units that will be subject to group timer control. The timer-group settings for the schedule timer involve assignment of central control addresses. Therefore, use the system controller (or other central control device) or wired remote controllers to set the central control addresses of the indoor units, then make the schedule timer settings.



### Procedure for making fixed timer group settings (fixed groups)

- First, use a different central control device (system controller or other device) or the wired remote controllers to set the central control addresses, as assigned in the figure above, to the indoor units that will be subject to group timer control.
- Next, use S41 switches 2 and 3 to set the number of timer groups you wish to create.
- Finally, turn ON the schedule timer power. Initial communications are performed. (SCAN blinks in the display.) The normal display appears after several minutes, and the timer group settings are confirmed.

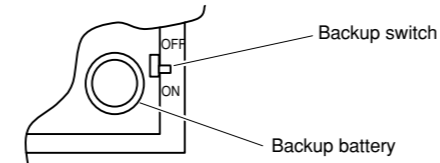
### Procedure for making manual timer group settings (manual group assignments)

Manual timer group settings allow central control addresses to be assigned freely within the timer groups.

- Turn ON S41 setting switches 2 and 3, then turn ON the power. Restart and initial communications are performed. (SCAN blinks in the display.) The normal display appears after several minutes.
- When the normal display appears, press and hold the schedule timer **[CLEAR]** button, the timer **[▶/I/O]** button, and the **[⏏/⏏]** button for 4 seconds or longer. "Ad-01" appears, blinking, in the current time display. (Ad indicates "address" and 01 is the central address number.)
- Use the **[GROUP]** button in the **[■]** area to select the timer group. Then use the **[DAY]** button in the **[■]** area to select the central control address to assign and register for that timer group. Press the **[SET]** button to register the selected central control address.
- To continue registering addresses, repeat step (3). (Central control address numbers will be added to the right side of the LCD display.) To cancel a registered central control address, use the **[GROUP]** button in the **[■]** area to select the timer group, then use the **[DAY]** button in the **[■]** area to select the central control address and press the **[CLEAR]** button.
- Repeat steps (3) – (4) for each timer group. When registration is completed, press the timer **[▶/I/O]** button. The schedule timer restarts automatically and performs initial communications. (SCAN blinks in the display.) The normal display appears after several minutes, and the manually assigned timer group settings are confirmed.

### Memory Backup Switch

After installation is completed, check that the backup switch on the reverse side of the schedule timer PCB is turned to ON. (The backup battery will retain the current time for up to 100 hours.)



### Checking the Central Control Addresses and Operating the Units that are Controlled by the Schedule Timer

The schedule timer communicates with the indoor units to check which central control addresses can be controlled with the current timer control. The schedule timer can then be used to start and stop these units.

- Press and hold the schedule timer **[⏏/⏏]** button, **[TIMER OFF]** button, and **[CLEAR]** button for 4 seconds or longer. "Ad-(central control address)" appears in sequence, blinking.
- Use the **[GROUP]** button in the **[■]** area to display the blinking central control addresses in sequential order. In this way, it is possible to check which central control addresses in the displayed timer group can be operated by the timer.
- With the selected timer group displayed, press the timer **[▶/I/O]** button. Each time the button is pressed the indoor units in the displayed timer group start or stop. Pressing the **[⏏/⏏]** button in this mode permits all items (operation start/stop, operation mode, temperature setting items) at the indoor units in the displayed timer group where remote controller prohibit is in effect.
- After checking the addresses and operating the units, press and hold the **[CANCEL]** button for 2 seconds or longer. The schedule timer display returns to the normal display and all controllable indoor units stop.

### Explanation to Customers

- After work is completed, present the Operation Manual and Information for the Person in Charge of Installation (Electrical) Work to the customer.
- Explain to the customer the methods for use of the system, as described in the Operation Manual.

### Installation Work Plan

- Use the wired remote controller to check the unit No. of the indoor units. (Start the A/C unit with the wired remote controller, then press the remote controller UNIT SELECT button once to display the unit No. of the master unit.)

Schedule timer	Fixed timer group			Central control addresses	Indoor unit Unit No. System - Indoor	Room name
	1	4	8			
1	1	1	1	1	- , -	
				2	- , -	
				3	- , -	
				4	- , -	
				5	- , -	
				6	- , -	
				7	- , -	
				8	- , -	
	2	2	2	9	- , -	
				10	- , -	
				11	- , -	
				12	- , -	
				13	- , -	
				14	- , -	
				15	- , -	
				16	- , -	
	3	3	3	17	- , -	
				18	- , -	
				19	- , -	
				20	- , -	
				21	- , -	
				22	- , -	
				23	- , -	
				24	- , -	
	4	4	4	25	- , -	
				26	- , -	
				27	- , -	
				28	- , -	
				29	- , -	
				30	- , -	
				31	- , -	
				32	- , -	
5	5	5	33	- , -		
			34	- , -		
			35	- , -		
			36	- , -		
			37	- , -		
			38	- , -		
			39	- , -		
			40	- , -		
6	6	6	41	- , -		
			42	- , -		
			43	- , -		
			44	- , -		
			45	- , -		
			46	- , -		
			47	- , -		
			48	- , -		
7	7	7	49	- , -		
			50	- , -		
			51	- , -		
			52	- , -		
			53	- , -		
			54	- , -		
			55	- , -		
			56	- , -		
8	8	8	57	- , -		
			58	- , -		
			59	- , -		
			60	- , -		
			61	- , -		
			62	- , -		
			63	- , -		
			64	- , -		