

	 Caution
	<u>Prohibition of climbing</u> Don't try to climb in a car by stepping handrail or wall. You may get hurt. If you need to get ceiling, use ladder.

	 Warning
	<u>Prohibition of water cleaning</u> Never clean the elevator and hall with water. Electric system is weak against water. If electric items are wet by water, it will get damaged or breakdown. And electric shock accident may occur. If it needs water cleaning, contact maintenance company for advice.

	 Warning
	<u>Prohibition of wet floor</u> Don't drop water on the car floor. Be cautious that water is not dropped when you get in elevator with an umbrella. If dropped, wipe the car floor with mop immediately.

	 Caution
	<u>Strange things on operation</u> If there is any big noise, vibration, smoke, disgusting smell, leveling error and abnormal operation, let the passenger get off to hall, and turn off main power. And inform Maintenance company to remove abnormal condition.

	 Caution
--	---



Caution

Elevator inside requires proper light for normal traveling.

If elevator inside is dark, there is possibility that an accident may happen. In case life cycle of light is finished, replace with new one.



Warning

Prohibition of forklift

Do not use forklift to load freight. Elevator may be damaged or get an accident



Caution

Caution of freight carrying

When you carry big size of freight, you must inform an operation manager for safe carrying.

Freight may be bumped to a door or jam. Then some part may be broken. And it will bring an accident. So an operation manager must control the freight carrying.



Caution

Caution of long size freight carrying

Don't carry the long size of freight with opening emergency exit gate.



Caution

Prohibition of dirty sill

Never throw away any materials on groove of sills. If there are anything on the groove of sills, door operation will be out of groove, and it will be a cause of breakdown. Don't throw away anything (Wastes, chewing gums, cigarette, stone, sand, pieces of concrete)



Caution

	<u>Prohibition of child alone in a car</u> Do not leave a child in a lift alone. He/she may use a lift for playing or handle lift wrong.
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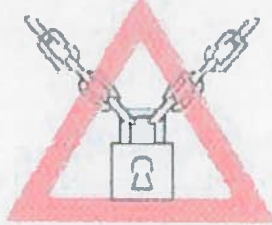
	 Warning
	<u>Dropped stuff</u> Be cautious not to drop any stuff between a car and a hall. When you pick it up, door closing may hurt you. In this case, please, inform maintenance manager or Maintenance Company.

	 Warning
	<u>Prohibition of explosive materials</u> Never put the explosive materials as gasoline, oil etc in a car or near the landing hall. Specially, if you leave explosive thing in a car, any explosion or fire may occur.

	 Warning
	<u>Prohibition of heat devices</u> Never use the explosive or fire items in a car and hoistway. The fire may occur. Nobody can smoke in a car and any heating device cannot be installed.

	 Caution
	<u>Prohibition of sticker</u> Only a poster that is related to safe lift operation is allowed. The others shall be a cause of accident.

	 Caution
--	---

	 Caution Shutter on COP should always be locked.
--	--


Caution

Fixing of freight

Put the small stuff in box with safe not to drop. If it drops on th car floor, it may interrupt door operation or other passenger.

Caution of freight loading

Be careful not to break the glass in a car when you load freight.

Caution of handcart

Be careful not to fall down or damage jamb and sill by sill level when you use a hand cart.

5.2.2 General guideline for normal operation

This chapter will explain about guide and etiquette that passengers must keep in the elevator for safe operation. And elevator owner or operation manager must inform the below guide to passengers to keep them.

In case of fire, earthquake or flood, don't use elevators.

Any case as above, if you operate a lift, you may be sealed up inside of a car with sudden stop.

	 Warning <u>Prohibition on lift operation in emergency</u> If fire, earthquake or floods has occurred, don't use elevators. Any case as above, if you operate a lift, you may be locked up inside of car with sudden stop. If you are inside of car, please, get off at safe nearest floor
---	--

	 Caution <u>Reading of manual</u> Read surely this operation manual with attention for all safety.
---	---

	 Caution
	<u>Prohibition of load excess</u> Check the capacity of car, and be careful not to exceed load

	 Caution
	<u>Caution of freight carrying</u> When you carry big size of freight, you must inform an operation manager for safe carrying. Freight may be bumped to a door or jam. Then some part may be broken. And it will bring an accident. So an operation manager must control the freight carrying.

	 Caution
	<u>Caution of COP handling</u> Don't give a strong power or impact on COP and its buttons. If you give any abnormal impact, the floor button, emergency call button or other switches shall be broken. And it will be a cause of accident

	 Warning
	<u>Prohibition of cover disassembling</u> Do not disassemble the hall button and COP cover plate.

	 Warning
	<u>Prohibition of switch operation</u> Do not operate switches in COP mindlessly. A lift may stop suddenly and you may be locked up in a car. Switches in COP are for only an operator and operation manager only

	 Caution
	<u>Prohibition of mischief and roughness(Provision)</u> Don't let child do mischief in a car. If somebody do mischief or roughness, safety system of lift may be activated. Then he/she will be locked up in a car with sudden stop.

	 Caution
	<u>Don't open the car door with force(Provision)</u> If you try to open the door with force while a lift is travelling, lift may stop suddenly. And passengers will be locked up in a car.

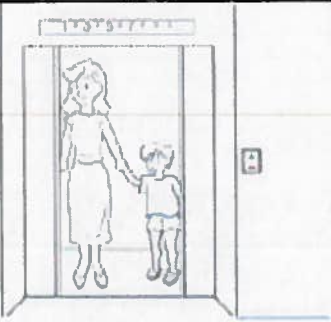
	 Caution
	<u>Don't lean or touch the door (Provision)</u> If you lean or touch the door, you may fall down to floor or your hand will be hurt when the door open. If possible, don't stand at near of door.

	 Warning
	<u>Prohibition of escape trial from car</u> In case you are locked up inside a car, Don't try to escape from car.If you open the car door or emergency exit gate when a lift stopped between floors due to power failure or other emergency, you may be fallen down to pit. You must wait inside to be rescued by Maintenance Company as communicating through inter-phone.

	 Warning
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	<u>Prohibition of heat devices</u> Never use the explosive or fire items in a car and hoistway. The fire may occur. Nobody can smoke in a car and any heating device cannot be installed.
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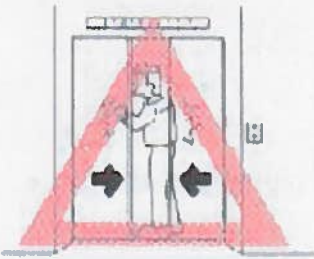
	 Warning
	<u>Prohibition of explosive materials</u> Never put the explosive materials as gasoline, oil etc in a car or near the landing hall. Specially, if you leave explosive thing in a car, any explosion or fire may occur.

	 Caution
	<u>Guardian (Provision)</u> A person who cannot use elevator by oneself must get on together with a guardian. (Old man and children) They can be locked up in a car because of inability. Therefore the guardian must get on together.

 Others	 Warning
	<u>Prohibition of improper usage (Provision)</u> Do not use elevator for improper usage. It shall be a cause of accident or breakdown.

	 Caution
	<u>Prohibition of dirty sill</u> Never throw away any materials on groove of sills. If there are anything on the groove of sills, door operation will be out of groove, and it will be a cause of breakdown. Don't throw away anything (Wastes, chewing gums, cigarette, stone, sand, pieces of concrete)

	 Caution
--	--

	Caution Don't open the door by hands or feet when a door is closing. If you insert hands or feet when a door is closing, your hands or feet may be hurt by safety edge shoe.
	Caution <u>Caution of get in</u> Do not get in the elevator when a door is closing. If you get in the car by force while a door is closing, you may get jammed between doors. And you may be hurt. At this time, you must press the hall button or open button in a car, and check if a door is opened
	Caution <u>Prohibition of getting caught in doors</u> Be careful not to get caught between doors when you get in or off the car. If any kind of wire or cable get caught between doors, it will bring serious damage or breakdown. Be cautious as follows (Dog neck wire, electric cable, long skirts, jacket with hat, long clothes, handbag, etc).
	Caution <u>Caution of level gap</u> Be careful your feet when you get in or off car. Leveling gap may happen sometimes when a car stops. Whenever you get in or off the car, check the level gap not to fall down
	Warning <u>Prohibition of wet floor</u> Don't drop water on the car floor. Be cautious that water is not dropped when you get in elevator with an umbrella. If dropped, wipe the car floor with mop immediately.

5.2.3 Keeping the access to the machinery and controller locked

The access to the machinery and controller shall be permitted to authorized persons only and

abuse be prevented by according means (locks etc.). To have access for emergency situations, rescue and maintenance operations the key(s) need to be available all the time to authorized persons.

The safe access to the machine room or to the machinery area and the controller must be assured and any changes or hazards need to be reported to the maintenance company immediately.

5.2.4 Safe getting in and getting off

Car stop level may be high or low according to car load and operation control.

Passengers and freights must be careful not to fall down by sill level. In case a handcart roller is too small, it may be jammed between sills. So, do not use this kind of handcart.

Be careful that not to drop foreign substances and be caught in high hill or stick between sills. When you carry some freight, consider that load does not balanced at an edge and it must be fixed not to shake. Check and compare the real load and capacity of elevator. Operating with heavy load is danger. Never use the fork loader to carry freight.

5.2.5 Free accessing hall

All halls must be cleaned that passengers can use elevator freely without danger. Remove all obstacles and hindrances.

5.2.6 Action for observation car

In case of observation elevator that is installed in building, it has no full concrete wall. So, it needs protection wall against falling stuff, and protection fens that person cannot close to protection wall within 2 m. This is for passenger's safe from fire or similar hazard.

5.3 Elevator operation

5.3.1 General

Elevator is designed to use easy by simple handling.

Elevator handling can be proceeded in a car and halls.



Each floor where car stop has hall button for service registration that is called as hall call

The lamp lighting of hall button informs passengers that a hall call is registered.

As an optional device, some lift has no function that displaying current position and running direction.

The hearing or seeing signal can be applied to inform car arrival. Sometimes, we can apply key switch at special floor for other service purpose.



The car services call buttons, which are for passenger's destinations are configured on COP (Car Operation Panel Board).

The lamp lighting of car call button informs passengers that a car service call is registered.

The hearing or seeing signal can be applied to inform car arrival. Sometimes, we can apply key switch at special floor for other service purpose

There are other switches except car call button that has other function on COP (Sometimes, we call it as OPB)

The emergency call button, Door open/close button is configured as standard SPEC.

5.3.2 Operations

Passengers elevator car group there are below three kinds.

▲ Simplex ▲ Duplex ▲ Group control

1) Auto operation(High speed operation)

Elevator services automatically with a high speed against a hall call and car call without an operator.

Doors also operated automatically when elevator stops at each floor.

2) Attendant operation

An operation mode that operator controls elevator inside of elevator in case a hall is crowded with passengers.

The travel direction can be changed or passed the hall call registration by operator.

The door is opened automatically as an auto operation.

But, to make door close, it requires pressing 'Start' button in COP until car door is fully closed. If pressing button is released during door close, door will be opened again.

3) Independent operation

As an operation mode for the special person who controls elevator independently, It cancels all hall calls but car calls. (It is used at hospital generally to move urgent patient). When it stops at floor, door is opened automatically. But to make door close, it requires pressing 'CLOSE' button on COP until car door is fully closed. If pressing button is released during door close, door will be opened again.

4) Emergency operation (Fire Operation)- optional function

If the key switch or smoke detector is activated under fire that is installed at designated floor, all call of car & hall will be cancelled. And elevator will go to designated floor. After that, it will open door and stay.

If the phase 1(Fire fighting) switch is handled by firefighter, fire operation is available . At this time, only car call is acceptable. If he presses the floor button, door will close. But if he releases the close button before full of door close, the door will open again. When the door close fully, the car will go to selected floor, and stay with door closing. As he presses the open button, car door will start to open, but he releases the open button before door full open, door will close again.

5) Single operation(Group control standard specification)

When check elevator, open the shutter on OPB and place INSPECTION LIGHT Switch to ON position then this elevator will be separated from the group control system that means hall call will not respond only respond car call.

6) Parking operation

This is a function that elevator goes to rest mode to stop service for a time.

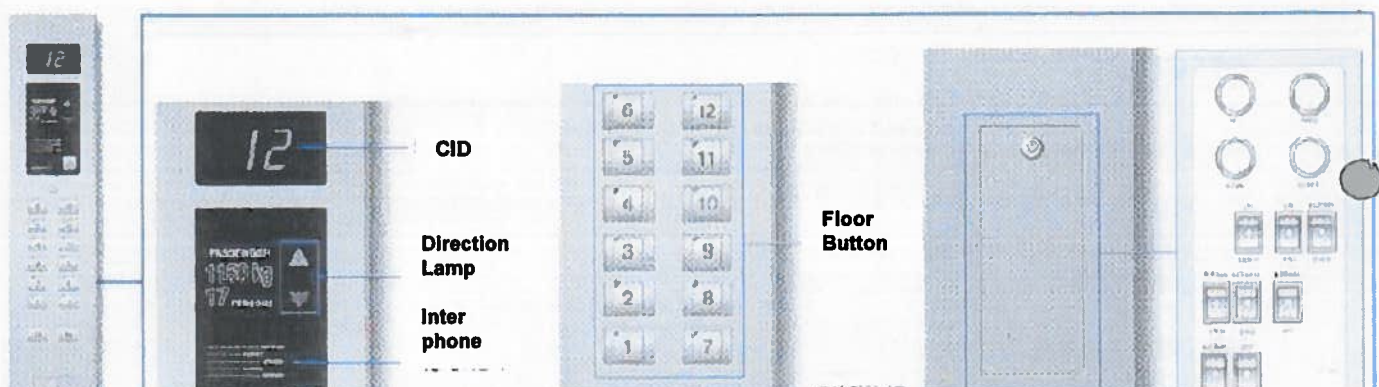
If any parking switch of hall or in managing room is turned on, elevator will go to designated floor, and open doors to get off passengers. After a few seconds, lighting will turn off. And elevator will close doors to stop service.

5.3.3 COP

5.3.3.1 Configuration of COP

Shape of COP is followings.

(The out-appearance of COP may different according to option SPEC)



**Emergency
Call**

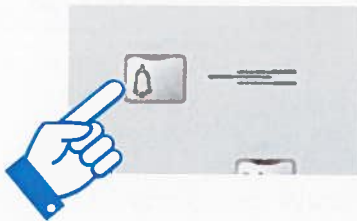
**Open
Button**

Full Lamp

**Close
Button**

ATT.Box

5.3.3.2 COP Button and switches



Emergency call button

Button that can communicate to guard room or management room

If you press this button, you can communicate a person who is in machine room or management room.

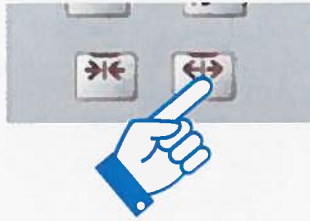
(If you hear beeping sound, release the button)

Floor button (Destination floor)

If one of them is pressed, lamp will light. As soon as elevator



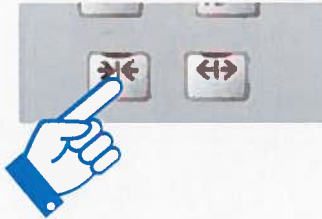
arrives at destination, lamp will turn off. Then, door will start open.



Door open button

Door will not close during this button is pressed. Even door is closed or closing, if it is pressed, door will open again.

(It will not work while elevator is traveling)



Door close button

Door will close if it is pressed.

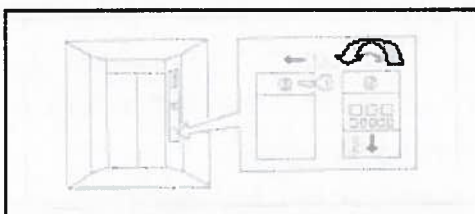
(It will not work while elevator is traveling).

5.3.3.3 COP switch box and cover

If the switches in COP, COP cover and hall buttons are handled immoderately, you may get in dangerous situation by accident. Specially, only operation manager, operator or qualified maintenance person must handle switches in COP.

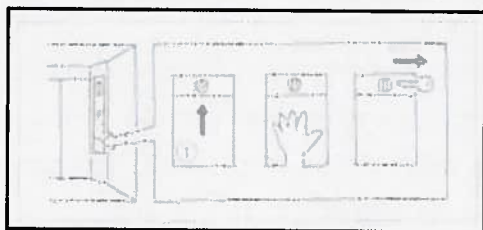
	Caution <u>Prohibition of switch operation</u> Do not operate switches in COP mindlessly. A lift may stop suddenly and you may be locked up in a car. Switches in COP are for only an operator and operation manager only
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- Opening of COP switch box



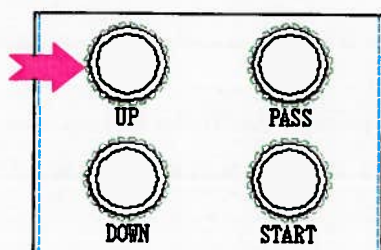
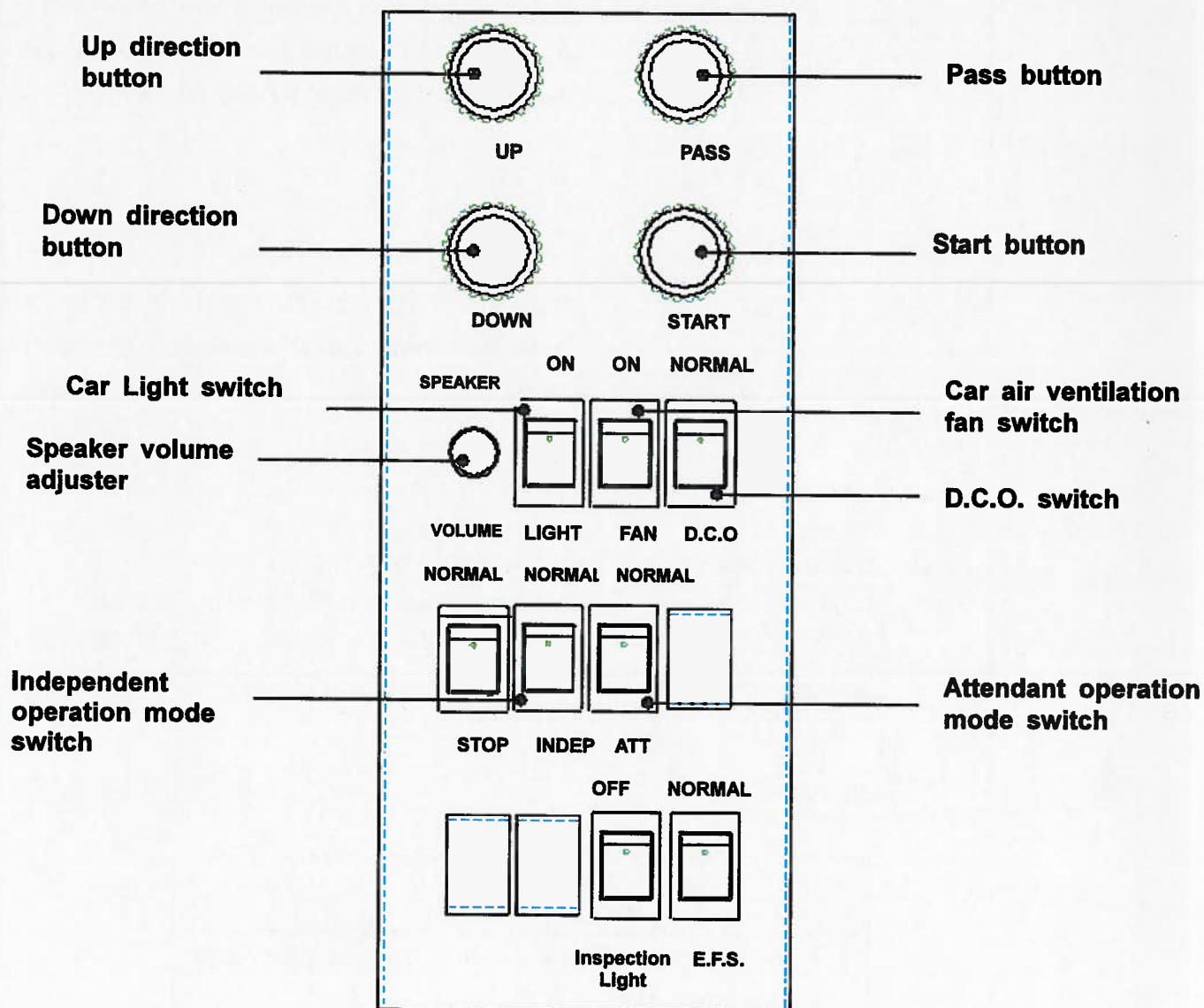
1. Insert key ① into hole of COP
2. Turn it to clockwise and open the cover.

- Locking of COP switch box



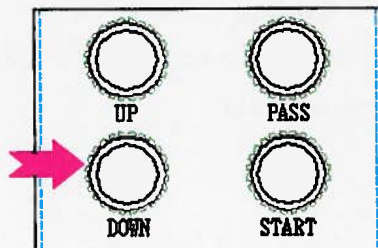
1. Close the COP cover
2. Turn the key to counter clockwise
3. Remove the key

5.3.3.2 Switches in COP box



Up button

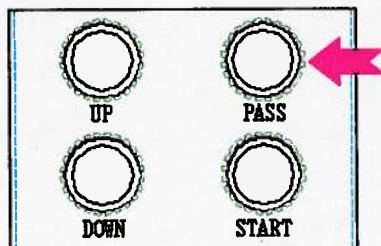
Operates elevator to up direction under independent or attendant operation mode. In case this button is pressed, downward elevator changes car direction to upward



Down button

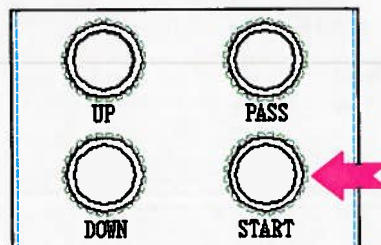
Operates elevator to down direction under independent or attendant operation mode.

In case this button is pressed, upward elevator changes car direction to downward



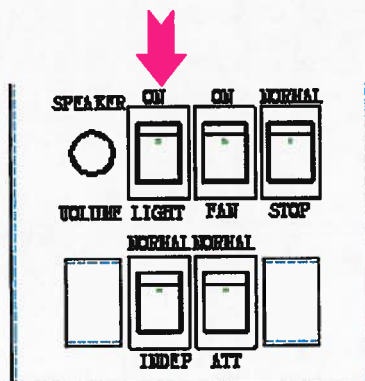
Pass button

In case this button is pressed under attendant operation mode, all hall calls are cancelled, and a car goes to destination floor by car call.



Start button

If the operator in a car pushes and holds this button, a car door starts to close under attendant operation mode.



Car light switch

Switch that turn off or on the light in a car

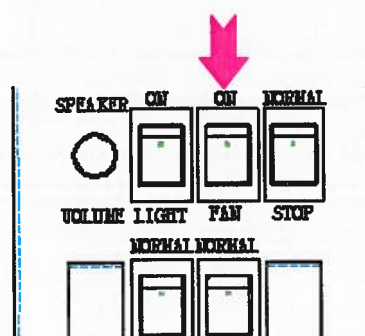
If this switch is 'ON' position, car light will turn on.



Caution

If you turn off the light key switch, the emergency light is also malfunction.

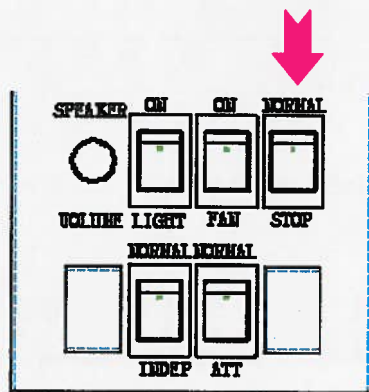
Please, put 'ON' position in normal times



Fan switch

Switch that turn off or on the fan on car

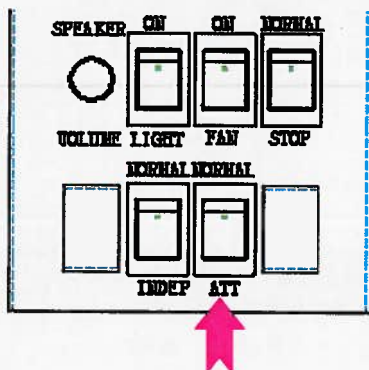
If this switch is 'ON' position, fan will turn on.



Emergency Stop switch

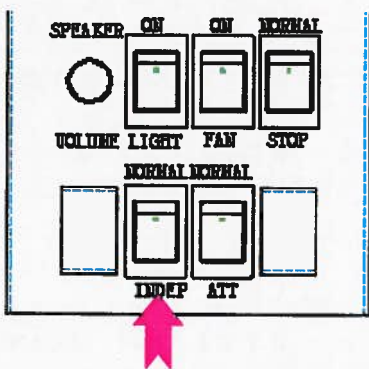
Under breakdown or maintenance work condition, if it is pulled up at any position, car will stop immediately.

For its normal operation, put the switch to 'Normal' position.



Attendant operation mode switch

An operation mode that operator controls elevator inside of elevator in case hall is crowded with passengers. To enable this mode, turn on the 'ATT' switch

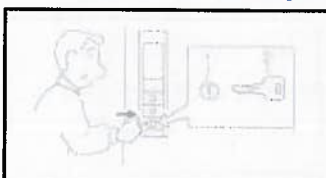


Independent operation mode switch

An operation mode that the special person who controls elevator independently. To enable this mode, turn on the 'INDEP' switch

5.3.4 Canceling of parking for normal operation

5.3.4.1 In case parking switch is installed at hall



(a) Insert key② into key switch①. (b) Turn key① to 「OFF」 position (c) Remove key①.

5.3.4.2 In case parking switch is not installed at hall

Bring elevator where it to be parked, and follow as table.

 Caution
Operation manager or maintenance worker only

Handling sequence	Checking point
① Pull up the EM-STOP switch	Elevator stop
② Turn on the Fan switch.	Fan on
③ Turn on the light switch	Light on
④ Get off from car	Check if door is closed.
⑤ Try to give hall call	Non- registration check, Door stays close condition

When you complete above preparation, please, check following points.

Item	Check point	Countermeasure to abnormal conditions
COP	• Broken or dirty buttons • Buttons working condition • Indicator and lamp condition • Cleaning condition of car floor and wall	• Clean the part • If there is any damage, out of function on part, inform Maintenance company.
Hall & Hall Button	• Broken or dirty buttons & switches • Buttons working condition • Indicator and lamp condition • Hall cleaning condition at each floor?	• Clean the part and hall. • If there is any damage, out of function on part, inform Maintenance company.
Door	• Door closing and opening condition • Safety shoe working condition (when it is activated, door must reopen)	• Clean the groove of car & landing sill at each floor. • If there is any strange matter, inform Maintenance company
Car traveling	• Abnormal operation and sudden deceleration • Abnormal noise and vibration • Big level gap when car stop	• Clean the groove of car & landing sill at each floor. • If there is any strange matter, inform Maintenance company.

5.3.5 Operation Mode

5.3.5.1 Auto operation (Normal operation)

1) Hall call

Indicators that inform car position and direction are installed at top of button or door at each floor as ②.

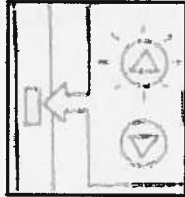
Hall button assembly ① has 2 buttons, one of top is



for upward service, the another is for downward service.

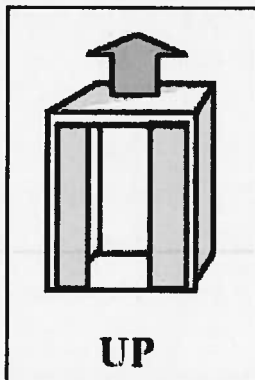
The top floor has only one button for downward. And bottom floor has also one button for upward.

Press the button where you are going to go, then lamp of button will turned on. Wait car for service



2) In case of upward hall call registration.

If there is no service registration, car will serve directly as soon as you make a call service.



If upward hall call is registered and elevator is running from low to high floor, car will go and stop where hall call is registered to respond against upward hall call for service.

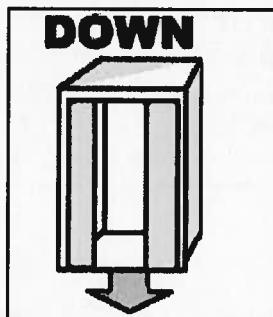
Else if upward hall call is registered but elevator is running from high to low, car will serve downward service call first, After completion of downward service, car will go and stop where hall call is registered to respond against upward hall call for service

If there is car call where passengers are waiting, a car will go and stop. Then passengers can get on the car. But elevator is serving for downward, a car will not respond against upward call, As soon as car arrives to bottom floor, all car call will be cancelled, this is to protect nuisance call.

Car will change traveling direction and go to serve from the nearest floor of bottom after downward service.

As car will serve against upward hall call and car call in sequence.

3) In case of downward hall call registration



If downward hall call is registered and elevator is running from high to low floor, car will go and stop where hall call is registered to respond against downward hall call for service.

Else if downward hall call is registered but elevator is running from low to high, car will serve upward service call first, After completion of upward service, car will go and stop where hall call is registered to respond against downward hall call for service.

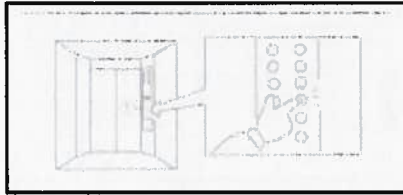
If there is a car call where passengers are waiting, a car will go and stop. Then passengers can get on the car. But elevator is serving for upward, car will not respond against downward call, As soon as car arrives to top floor, all car call will be cancelled.

Car will change traveling direction and go to serve from the nearest floor of top after upward service.

As car will serve against downward hall call and car call in sequence.

4) Car call on COP

Floor buttons are configured on COP.



Passenger can press buttons ① where they want to go. If pressing time is delayed or lated, traveling direction can be changed.

After registration car will close door for service.

When car is on the upward service, car will serve to car calls and hall calls of high floor. As car will serve against upward calls in sequence.

When car is on the downward service, car will serve to car calls and hall calls of low floor. As car will serve against downward calls in sequence.

Car indicator displays the current position of car and traveling direction.

In case of full load, car will ignore the hall call by system control until passengers get off. This is not breakdown. Because even a car responses to hall call, passengers cannot get on the car. This is normal situation for better quick service.

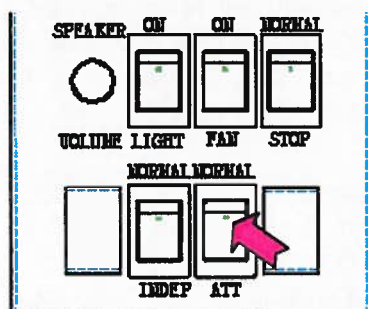


As car start to run, look at the display on indicator.
Current car position will be displayed on indicator.

When elevator goes to destination. Door will open automatically. Then, get off the car with care when door open fully.

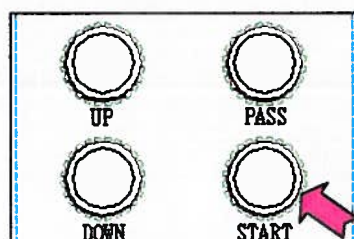
5.3.5.2 Attendant operation

1) Operation mode change from Auto to ATT



Toggle the 'NORMAL/ATT' switch to 'ATT'. Then, door will open automatically, and car will stay at the floor with door open. If hall call or car call have registered at upper floor, the service direction is set to upward. Else if they have registered lower floor, the service direction is set to downward.
But if there is no call, car stays at current floor without direction display.

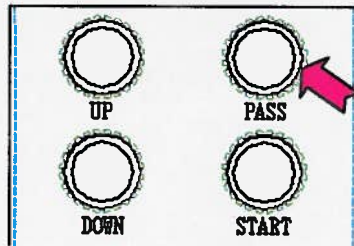
2) Door close and car service



When all passengers get in, register the destination floors. And press and hold the 'START' button until doors are closed fully.

If you release the 'START' button during door close, door will open again. When car just moves to service floor, you may take away your finger from the button.

3) In case hall call service cancellation is required due to full passengers.

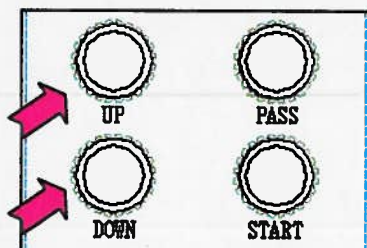


If you press 'PASS' button one time, all hall calls are ignored until next car service. And hall indicators will display 'FULL' signal.

At this time, hall button lamps that were registered would not turn off.

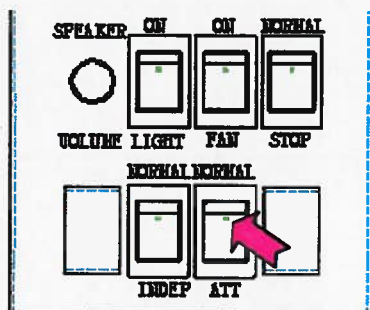
After one of car call services is finished, hall calls are available again as the call registration. So, if you want to pass hall calls, press 'PASS' button again.

4) Operation direction change



If you want to change the operation direction of car, press the 'UP' or 'DOWN' button when car stops at floor. At this time you must also change the car call floor.

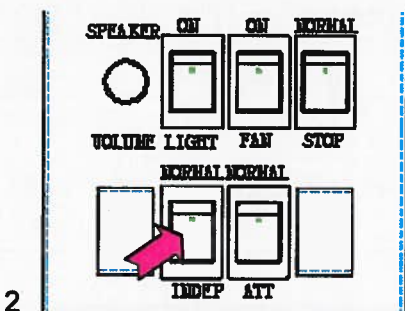
5) Finishing of attendant operation



Toggle the 'NORMAL/ATT' switch to 'NORMAL'. If you do not change the switch, car will not service for hall or car call service automatically.

5.3.5.3 Independent operation

1) Change of operation mode from Auto to 'INDEP'.



Toggle the 'NORMAL/INDEP' switch to 'INDEP'. Then, door will open automatically, and car will stay at the floor with door open. And all hall calls are erased.

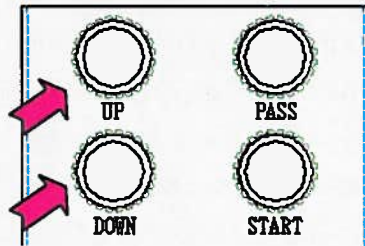
If car call have registered upper floor, the service direction is set to upward. Else if it has registered lower floor, the service direction is set to downward. And if there are both direction calls, it maintains current service direction.

When all passengers get in, register the destination floors. And press and hold the 'CLOSE' button until doors are closed fully.



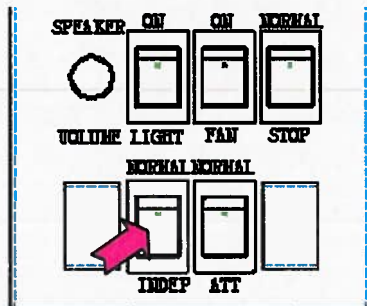
If you release the 'CLOSE' button during door close, door will open again. When car just moves to service floor, you may take away your finger from the button.

3) Operation direction change



If you want to change the operation direction of car, press the 'UP' or 'DOWN' button when car stops at floor. At this time you must also change the car call floor.

4) Finishing of attendant operation

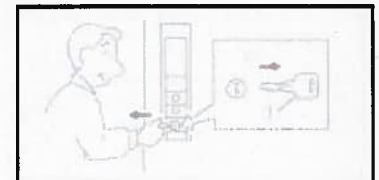
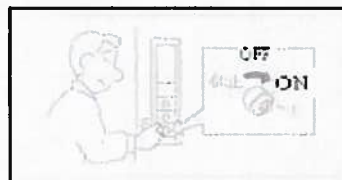


Toggle the 'NORMAL/INDEP' switch to 'NORMAL.'

If you do not change the switch, car will not service for hall or car call service automatically.

5.3.6 Parking to stop normal operation

5.3.6.1 When there is parking switch at hall



(a). Insert key② into key switch①. (b). Turn key① to 「ON」 position (c). Remove key①.

5.3.6.2 When there is not parking switch at hall

In this situation if want to parking the elevator, firstly run the car to the level you want it stop at and then operation by following procedure.



Caution

Operation manager or maintenance worker only

Operation Precedure	Items affirmed
① Open the shutter on OPB	Open the shutter
② Place 'NORMAL-STOP' switch on 'STOP' position	Elevator will be in STOP status
③ Place 'FAN' switch on 'FAN' position	Fan will be in stop status
④ Place 'LIGHT' switch on 'LIGHT' position	Light inside the car will be in turn off status
⑤ Close the shutter on OPB	Verify that shutter is locked
⑥ Egress from the car and close the landing door	Verify that the landing door will not be opened by hand at hall
⑦ Register a hall call	Verify that hall call can not be registered and the landing door do not open that means the car was in parking status.

5.4 Guide for rescue

5.4.1 General

We SIGMA Elevator Company, will stand by everyday and time for non-respectable breakdown.

Please, check followings before informing Maintenance Company.

1. Are passengers locked up in a car?
2. All switches on COP are 'NORMAL' position?
3. Is there any jammed or broken button?
4. Is the car and landing door operation normal? And were cleaned enough?
5. Are the safety edge shoe and the photo sensor normal?
6. Does the main power of system turn on?
7. Do passengers exceed in a car? (Overload)

Person who proceeds rescue must be skilled and qualified to rescue properly. They must have an ability to rescue by special elevator training

Anybody cannot proceed rescue without proper training or insufficient rescue sequence. And Skilled and qualified person also must keep the rescue sequence.

If you hope that a person who is indicated by owner is going to rescue, please contact to Maintenance Company.

5.4.2 Person who proceeds rescue must give stabilization to passengers.

And he must explain about the current rescue process through emergency communication device that passengers can be stable.

5.4.3 Use of emergency door key

The landing door key can open the landing doors of each floor in emergency.

Only operation manager must control this key.

Check that where the elevator positioned. You can open the hall door about 1/3 only to check car position. After checking of car position, If there is a car, you can open fully but there is no car, close door again. Even though car stops due to breakdown, light in a car will not turned off. And in case of power failure (blackout), the emergency lamp will be turned on.

Don't leave the key at hall, as soon as open door, you must remove key from landing door.

	 Warning <u>Landing door key control</u> - It should be controlled by an operation manager or maintenance worker only. - Carelessness handling will make you fall down to fit. - Check if there is car as opening door a little whenever you open landing doors. If there is no car, close landing door again - Whenever you open the landing door, put your weight center to backward not to fall down
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5.4.4 Manual rescue in case of emergency

Passengers may be trapped in elevator if elevator stops at the middle of floors because of system error or power failure. This breakdown does not happen practically. Only skilled person can rescue passengers through control panel and motor brake. So, we strongly recommend you to call Maintenance Company first, even you can rescue by yourself.

 Caution <u>Caution on emergency escape</u> The manual rescue in emergency must proceed by person who is disciplined about emergency escape under indicated regulation. Non-disciplined person is not allowed to proceed rescue because it is very dangerous!
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Passengers emergency rescue

The manual rescue in emergency must proceed by person who is disciplined about emergency escape under indicated regulation. The kind of your elevator is displayed in chapter 3.2.

Traction model

 Caution - Close and lock the all doors surely - Inform passengers not to open forcibly the door during rescue work through emergency communication device (Inter-phone). And clean the halls because rescue work must be not interrupted. - Open the control panel door. And Turn off the main power. - Use Brake open lever to open brake Move the car until elevator arrives to level zone of nearest floor. - Lock the machine room and go down to rescue floor. - Use emergency door key to open door, and rescue passengers. - Check if the landing door is surely closed and locked after rescue.
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 Caution If it requires passenger rescue, inform Maintenance Company immediately without hesitates. Do not operate car until the skilled worker of Maintenance Company finishes checking and repair.

 Caution Restrict the use of emergency key that can be managed by qualified person or skilled maintenance worker

Hydraulic model



Caution

1. Close and lock the all doors surely
2. Inform passengers not to open forcibly the door during rescue work through emergency communication device (Inter-phone). And clean the halls because rescue work must be not interrupted.
3. Open the control panel door. And Turn off the main power.
4. Press button on manual lowering valve of power unit block and move the car until elevator arrives to at the bottom floor level zone.
5. Lock the machine room and go down to rescue floor.
4. Use emergency door key to open door, and rescue passengers.
5. Check if the landing door is surely closed and locked after rescue.



Caution

If it requires passenger rescue, inform Maintenance Company immediately without hesitates. Do not operate car until the skilled worker of Maintenance Company finishes checking and repair.



Caution

Restrict the use of emergency key that can be managed by qualified person or skilled maintenance worker

5.5 Inspection and maintenance

5.5.1 Periodic test

In case of Korea domestic, all elevators need periodic inspection and maintenance in one year after installation. About the periodic test, follow the local regulation. This test must not bring any excess abrasion or stresses that make life cycle of elevator shorten. Specially, the emergency stop devices and buffers correspond to this case. They must be tested under slow speed operation with no load. The inspector who proceeds periodic test must check the real function. Then, he makes a report for owner in most case. Local elevator institute or organization usually does the periodic test.

5.5.2 Periodic inspection

Maintenance Company usually does the following inspection for safe elevator operation. Because the maintenance work is danger, an operation manager or owner does not usually do the following inspections. Make a maintenance contract to SIGMA Elevator Company or other Maintenance Elevator Company in local according to local elevator regulation and law to proceed periodic inspection.



Warning

Qualified workers only

Only qualified and skillful employee is permitted to maintain elevator.

5.5.2.1 Inspection in machine room

No.	Inspection part & item		Check point	Inspection term (time/month)	Action to be taken
1-1	Top floor entrance and hall		● Hindrance on hall at top floor ● Proper lighting system ● Machine room door need a lock	1/1	■ Remove hindrance. ■ Install proper light. ■ Surely keep the key
1-2	Light, ventilation and cleaning in machine room		● Other devices that is not relate to lift ● Heat & vibration ● Stable operation condition ● Lighting and air-ventilation. ● Temperature in machine room ● Invade of rail through window and ceiling.	1/1	■ Remove other device ■ If any strange condition is founded, inform Maintenance Company immediately. ■ Provide proper light and air ■ Maintain 0°C~40°C ■ Safe water proofing and finish
1-3	Manual handle device and brake lever		● Arrangements of manual handle device and brake lever.	1/1	■ Keep them at their origin position
1-4	Control panel		● Good fixed condition. ● Heat & vibration ● Stable operation condition ● Damage or abrasion of circuit breaker	1/1	■ If any strange condition is founded, inform Maintenance Company immediately.
1-5	Traction Machine	Deceleration Gear	● Lack of lubrication oil. Its feature change ● Abrasion or crack of gear. ● Thrust condition.	1/3	■ If any strange condition is founded, inform Maintenance Company.
1-6		Sheave	● Rotating condition. ● Slip	1/6	■ If any strange condition is founded, inform Maintenance Company immediately.
1-7		Bearing	● Excessive heat. ● Strange noise	1/6	■ If any strange condition is founded, inform Maintenance Company immediately.
1-8		Brake	● Oil on the lining and its braking control condition. ● Adjusted condition according to standard. ● Abrasion of brake drum. ● Abrasion of lining (over 2mm thickness)	1/1	■ If any strange condition is founded, inform Maintenance Company.
1-9		Pulley	● Rotating condition. ● Slip	1/6	■ If any strange condition is founded, inform Maintenance Company immediately.
1-10		Motor	● Excessive heat. ● Strange noise	1/1	■ If any strange condition is founded, inform Maintenance Company immediately.
1-11	Governor	Car side	● Vibration & noise ● Catching work condition ● Normal working of bearing(	1/6	■ If any strange condition is founded, inform Maintenance Company immediately.

No.	Inspection part & item		Check point	Inspection term (time/month)	Action to be taken
1-12	Governor	CWT side	● Vibration & noise ● Catching work condition ● Normal working of bearing	1/6	■ If any strange condition is founded, inform Maintenance Company immediately.
1-13	Counter action for hoistway against earthquake		■ Damage or extension on rope guard of CWT and Car. ■ Logical application of belt and traveling cable protection. ■ Break away of main belt. ■ Break away from main rail. ● Supposed breakdown and malfunction must not effect on operation	1/12	■ If any strange condition is founded, inform Maintenance Company.

5.5.2.2 Car inside

No.	Inspection part & item		Check point	Inspection term (time/month)	Action to be taken
2-1	Car wall.	Celling, floor	● Serious shape change, abrasion, rust, and corrosion. ● Flammable finishing materials.	1/3	■ Be cautious the shape change, abrasion, rust, and corrosion. ■ Apply non- flammable finishing materials.
2-2	Car door and sill		● Serious shape change, abrasion, rust, and corrosion. ● Level gap (Car sill height to landing sill): 40mm. ● Open & close condition of door ● Noise due to door shoe abrasion. ● Break away of door	1/1	■ Be cautious the shape change, abrasion, rust, and corrosion. ■ If any strange condition is founded, inform Maintenance Company immediately.
2-3	Car door switch		● Sticky switch operation. ● Working position and function.	1/1	■ If any strange condition is founded, stop the elevator operation and inform Maintenance Company immediately.
2-4	Door close Safety device		● Rapid reversed open condition. ● Stable reversed open condition.	1/1	■ If any strange condition is founded, inform Maintenance Company immediately.
2-5	Car indicator and COP		● Damage of push buttons and switches. ● Clear identification of switch. ● Display device condition. ● Lock device.	1/1	■ If any strange condition is founded, inform Maintenance Company immediately.
2-6	Communication device to outside		● Function and sensitivity of alarm system and communication device ※ Inter-phone must be installed at external guard room or management room or Maintenance Company to communicate to car inside. (Duplicated installation) This is important for rescue operation. ※ In case communication system is connected to only guard room, buzzer or alarm light must be installed at designated floor that somebody can make sense when a passenger in a car pushes the alarm button.. ※ The communication time must valid through maintenance at least 45 minutes during power failure.	1/1	■ If any strange condition is founded, inform Maintenance Company immediately.