

www.sigmaelevators.com



Caution

**Read surely this operation manual with
attention for all safety.**

USER'S MANUAL



Traction Machine Passengers Elevator

 **SIGMA**
LIFTS AND ESCALATORS

“ We take our customers as our forever friends”

SIGMA elevator consider products' quality and service above everything.

We do our best to serve for our customers.

Contents

- Introduction
- Symbols
- Signs
- Suggestions for safety

1. Purpose and owners' duty

Purpose of guide manual
Duties of owner

2. Terminologies definition

Terminologies definition

3. Basic documentation

Basic information
Basic characteristics
Daily traveling record
Annexure 1, A, B
Rope certificates

4. Technical documents

Installation layout
Electrical circuit diagram
Emergency rescue device circuit diagram
GSM Information and wiring diagram

5. Instructions for normal use

Description of devices
Instructions for normal use
Elevator operations
Instructions for rescue operations
Examination & test
Examination & test after an important modification or an accident
Environmental aspects
National statutory requirements

6. Maintenance manual

General maintenance instructions
Cleaning
Specifications to lubricant

7. Trouble-shooting codes

Error code type
Controller error code, Table 1
Inverter error code, Table 2

8. List of Appendices

Appendix 1

Car top access procedure
Car top egress procedure

Appendix 2

Pit access procedure
Pit egress procedure

Appendix 3

Regular replacement components
Expendables

■ Introduction

This is for right and safe elevator operation. Please read user's manual carefully before operating. And keep well this manual for managing persons.

If you feel understanding is hard, don't hesitate to contact SIGMA Elevator Company. For the long and safe operation, elevators should be maintained and inspected properly. Most customers have complete trust in SIGMA Elevator Company through long and stable manufacture and maintenance. Your contact to SIGMA Elevator Company about maintenance will make us appreciated.

■ Symbols and Signs

We define the following symbols about important items and safety for easy comprehension. Each symbol and sign as follows.

Specially please note about **"Warning" and "Caution"**

■ Symbols



This is a warning symbol. If anybody does not follow warning contents, He/she may get an accident.



This is a caution symbol. It indicates an important item on usage. If anybody does not follow a caution item, elevator shall be breakdown or damaged.

■ Signs



Compulsory items



Warning on operation



General item or relative information



Prohibition



Stopping actions

■ Suggestions for safety

Keep surely the following instructions to use elevator for all safety.



Warning



Qualified workers only

Only qualified and skillful employee is permitted to maintenance elevator. Maintenance requires qualified and skillful employee.



Prohibition on lift operation in emergency

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 car with sudden stop. If you are inside the car get off at nearest floor quickly.



Prohibition of escape trial from car (Provision)

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 fallen down to pit. You must wait inside to be rescued by Maintenance Company as communicating through inter-phone.



Prohibition of heat devices (Provision)

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.



Prohibition of explosive materials

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



Dropped stuff

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, inform maintenance manager or Maintenance Company.



Prohibition of temporary modification

Never modify the elevator for your convenience temporarily. Unauthorized car interior, wiring and part change and addition are all cause of breakdown or accident. And these thing can affect on elevator function and quality (If required, please contact maintenance manager or company)



Machine room door lock device

Lock the door of machine room. It is permitted to only maintenance workers.

If the machine room door is left with open, somebody shall get an electric shock.



Prohibition of water cleaning

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.



Prohibition of wet floor

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

Control panel lock device

Lock the control panel in machine room. It is permitted to only maintenance workers. If control panel is left with open, somebody shall get an electric shock.





Warning



Prohibition of cover disassembling

Do not disassemble the hall button and COP cover plate.



Prohibition of other equipment

Any kind of other equipment installation, conducting and wiring is not allowed at machine room and hoistway.

It may interrupt normal operation.



Prohibition of loading in pit

Do not use the pit as work area or warehouse.

Because there are important devices as buffer and emergency switches, loading may interrupt their function.



Key Keeping

An operation manager must keep all keys, which are related to elevators. If key management is insufficient, rescue action may be delayed or other breakdown will occur. So, an operation manager must keep these keys -machine room, landing door, COP, Control panel - And its keeping place must be decided to limit their use and lost.



Others



Prohibition of improper use

Do not use elevator for improper use.

It shall be a cause of accident or breakdown.



Prohibition of fork loader car

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



Warning



Electric energy control

Turn off the main power when control panel is under inspection



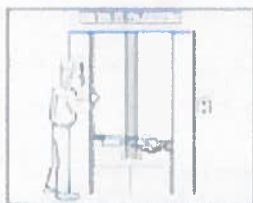
Car top access and egress guideline(see Appendix1)

Whenever you access or egress to car top, follow the guideline surely. Because you may be fallen down by unexpected car operation. Place the car operation mode to 'INPECTION' whenever you get on the car



Rotating wheel caution

Whenever you inspect rotating items, turn off the main power. If you are so close to rotating instrument, you may get hurt.



Landing door key control

1. It should be controlled by an operation manager or maintenance worker only.
2. Careless handling will make you fall down to pit.
3. Check if there is a car as opening door a little whenever you open landing doors. If there is no car, close landing door again
4. Whenever you open the landing door, put your weight center to backward not to fall down

Keep surely the following instructions to use elevator for all safety.



Caution



Reading passenger's regulation

Read surely this operation manual with attention for all safety



Operation manager(Provision)

Elevator owner must hire an operation manager who has elevator operation knowledge and experience to perform safe operation management.

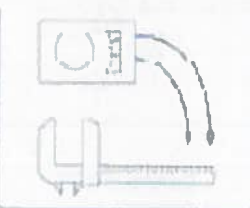


Operation manager's task

Indicate a sub operation manager or agent in case of that the operation manager is absent.

*** Job Scope**

- 1. Making of lift management regulation and its management**
- 2. Recording of lift breakdown and repair**
- 3. Making of Emergency communication network against lift breakdown or accident**
- 4. Making and managing of rescue or first aid system**
- 5. Reporting of accident**
- 6. Managing of standard safe device**
- 7. Key keeping**



Elevator Inspection (Provision)

Elevator owner must follow the government rule or local regulation carry out periodic elevator inspection and test



Caution



Machine room protection from snow, rain and water

Machine room that control panel is installed must be protected from snow, rain and water. Control panel shall be burnt down and some part will not operate normally if they penetrate in the top floor and top hoistway. Install the proper protecting device.



Light in top of hoistway and top floor (Provision)

Hoistway and top floor require enough light. Lighting power must be separated from main power. Its switch must be installed at near entrance.



Machine Room accessing

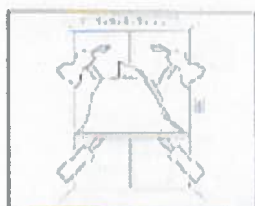
Corridor to machine room must be cleaned without hindrances.

Accessing machine room must not be interrupted in emergency condition, rescue and maintenance.



Preparation of fire extinguisher

Put a fire extinguisher at machine room (powder type)



Use of emergency elevator

Do not use the emergency elevator as freight carrying or others. It is designed for fire fighting. Fire fighters cannot use elevator if you use it for other aim.



Prohibition of climbing

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.



Caution



Prohibition of using mobile phone

Don't use mobile phone in machine room. Mobile phone signal may cause CP work abnormal even can cause an accident.



Strange things on operation

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.



Required reading of passengers guide (Provision)

All passengers must note and keep the passengers guideline attached in a car. In case there is a car operator, follow his/her instruction



Prohibition of load excess

Check the capacity of car, and be careful not to exceed load



Guardian

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.



Prohibition of child alone in a car

Do not leave a child in a lift alone.

He/she may use a lift for playing or handle lift wrong



Prohibition of mischief and roughness

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.



Don't open the car door with force (Provision)

If you try to open the door with force while a lift is travelling, a lift may stop suddenly. And passengers will be locked up in a car.



Don't lean to door (Provision)

Don't lean or touch the door.

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.



Caution of get in car

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 get hurt. At this time, you must press the hall button or open button in a car, and check if a door is opened



Prohibition of nuisance door operation

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 get hurt by safety mechanical shoe.



Prohibition of getting caught between doors

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).



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.



Caution



Caution of COP handling (Provision)

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



Prohibition of dirty sill (Provision)

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)



Prohibition misusing of switch operation

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 of freight carrying (Provision)

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 of long size freight carrying

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



Prohibition of sticker

Only a poster that is related to safe lift operation is allowed.
The others shall be a cause of accident.



Caution

Car light

Elevator inside requires proper light for normal traveling.

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

Car light switch

In case a car light switch position is at 'OFF', the emergency light in power failure also turned off. Put the car light switch at 'ON' position in normal condition.

Caution of handcart

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

Carrying material

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

Caution of freight loading

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

Cleaning

Stop the elevator operation during cleaning for safety. And because the inside of a car is closed room, do not use washing lotion or treated oil that requires ventilation.

Pre-inspection action

- a. In case the lift is not at the inspection floor, do not open the landing door without safety shelter cover setting.
- b. Turn off main power or change the operation mode to 'MAINTENANCE' during maintenance.
- c. Take an action place "On Service" warning board in proper area.

Caution in adjustment

Do not change or adjust some parts without enough comprehension.

Use of oil

Oil that is directed by SIGMA Company must be applied. The use of other kind oil may shorten part life cycle and bring accident by interrupting normal work of safety device.

Rescue in emergency

Rescue action in emergency must be proceeded by qualified persons who have rescue training under provision. Any action that is out of regulation may bring dangerous status.

Operation log book

The owner or operation manager must record about main part change, repair, breakdown and accident.

■ 1. Purpose and owner's duty

1.1 Purpose of guide book

This is for right and safe elevator operation. Read carefully before operation.

If you handle elevator wrong, it will be a cause of breakdown or accident. Read this user's manual before operation.

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

 Caution
<u>Recording daily traveling</u> An owner must record information like change, repair, breakdown and any accident.

The normal operation, basic maintenance, breakdown and action as follows.

Strange things on operation

If there are any big noise, vibration, smoke, disgusting smell, wrong leveling and abnormal operation, let the passenger get off to hall, and turn off main power. And inform SIGMA Elevator Company or other Maintenance Company prevents expected accidents.

These elevators are designed and manufactured to move passengers in building
If the load in a car over its rated load, it will be a cause of accident. Then lift will not move until load is not over its capacity with buzzer sound.
If overload buzzer rings, the last passenger must get off from car immediately. And he/she may use next service.

In case you do not follow the users' guideline, and it brings any kind of accident or damage, we have no in charge of responsibility. Therefore do not use elevator for another purpose.

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

Elevator maintenance must be proceeded by qualified company.

Only a qualified person can proceed maintenance that can ensure safe work after a danger analysis.

Any type of change or part replacement should be recorded on operation manual

If you do not keep the guide of user's manual, the accident or hazard may happen to passengers.

Only pure part, which is provided by SIGMA Elevator Company, will ensure safety and function.

1.2 Duty of owner

An owner has duty that checks and manages elevators, which are properly operated. And he/she can hire an operation manager. Therefore, Making maintenance plan that makes contract Maintenance Company is very important.

The air ventilating devices must be installed at machine room, hoistway, and car to make good condition for lift operation (General Temperature 0°C~ +40°C)

The user's manual must be in custody where operation manager can read anytime.

Don't leave items in the front of machine room entrance and around that interrupt room accessing.

A machine room must be always locked, and limit room accessing except qualified person.

A machine room and hall requires enough and proper lighting for normal operation.

All space and corridors that are related to elevator cannot be used for other purpose.

The maintenance should be entrusted to qualified company for passenger's safety.

For the general maintenance, please refer to relevant item in this manual.

An emergency communication device should be available all the time.

An elevator inspection is proceeded with relevant regulation or rule

In case the lift does not operate for a long time, you must contact a skilled Maintenance Company for normal operation. Elevators need an inspection for passengers' safety.

■ **2. Terminologies definition**

Lift

As a subsidiary of building, it transports passengers and freight. It calls as elevator, escalator and wheel-chair lift.

Lift parts

Main safety items of lift

Maintenance

A checking lift operation condition and setting in good condition to protect lift breakdown through the maintenance contract that is concluded between the lift owner and Maintenance Company.

Lift owner

A person / company that has a right to deal and a responsibility for a lift operation and use.

Management subject

A person / company that has a responsibility for a lift.

Inspection

- a. Final Inspection : A inspection after lift installation
- b. Periodic inspection: Before the term of inspection validity is expired, it requires more lift operation. It must be inspected at regular interval.
- c. Random inspection: A case that lift use, control system, speed, capacity or traveling distance is changed, or there is repair due to breakdown.

Inspection Institute

As an inspection institute that is designated by lift product & management regulation of local, proceeds periodic test against elevators and escalators.

Operation Manager

A person who was designated by an owner for lift management

Hand-over

Time point when installation is completed and an owner can use elevator.

Emergency

A condition or situation that a passenger needs the external help

Service start

Time point that an owner can use elevator

Repair

Replacement or repair for old or damaged part

■ 3.Record

3.1 Basic information

(Recorded by installation in charge)

Provider :  **SIGMA Elevator Company**

Address of manufacturer Factory) No.2 Song Lan Street., Economic & Technical Development Zone, Dalian, Peoples Republic of China

MFG No. :

Date of Hand over: Year

Installation Place:

Inspection Institute:

3.2 Basic characteristics

(Recorded by installation in charge)

Usage	☐ Passenger ☐ Passenger & Goods ☐ Bier ☐ Bed ☐ Emegency			
	☐ Handicapped ☐ Observation ☐ Others			
Driving method	☐ Traction ☐ Hydraulic Underslung ☐ Hydraulic Fork ☐ Hydraulic Direct			
Rated Load	kg			
Passenger	Persons			
Rated speed	m/min			
Car Group	☐ Simplex ☐ Duplex ☐ Group control ☐ Others ()			
Building Information	Number of entrances	floors		
	Number of levels served	floors		
	Travel Distance	m		
	Power Supply	Drive Power	φ	V Hz
		Light Power	φ	V Hz
	Location of machinery	☐ Top of the well ☐ Under and Side of the well ☐ Top and Side of the well ☐ Outside of the well ☐ Others()		

3.3 Daily traveling log book

3.3.1 General

An owner must always keep the daily traveling Log book that is recorded everyday.

(Recorded by owner)

Owner and Address:

Elevator management
No:

Hand over date:

Elevator service start date : Year Month Day

Maintenance Company

Maintenance company name	Maintenance contract date
Maintenance company address	Contact
	TEL :
	FAX :
	E-mail :

3.3.2 Main repair and adjustment

Any changes and replacement of elevator should be recorded.

(Recorded by owner)

[illegible]

[illegible]

[illegible]

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■ 4. Technical Documents

This section contains the various *drawings*, and diagrams of the lift.
The *wiring* diagrams supplied *are only* those necessary to *identify* safety issues.




Warning

Building drawings, electrical wiring schematic diagrams and are provided to ensure that persons who are competent to undertake work on the lift have sufficient information to allow them to proceed with safety.

IT IS HIGHLY DANGEROUS TO ALLOW ANY PERSON TO WORK ON THE INSTALLATION WHO IS NOT A PROPERLY TRAINED AND DULY AUTHORIZED LIFT ENGINEER.

4.1 Elevator installation layouts

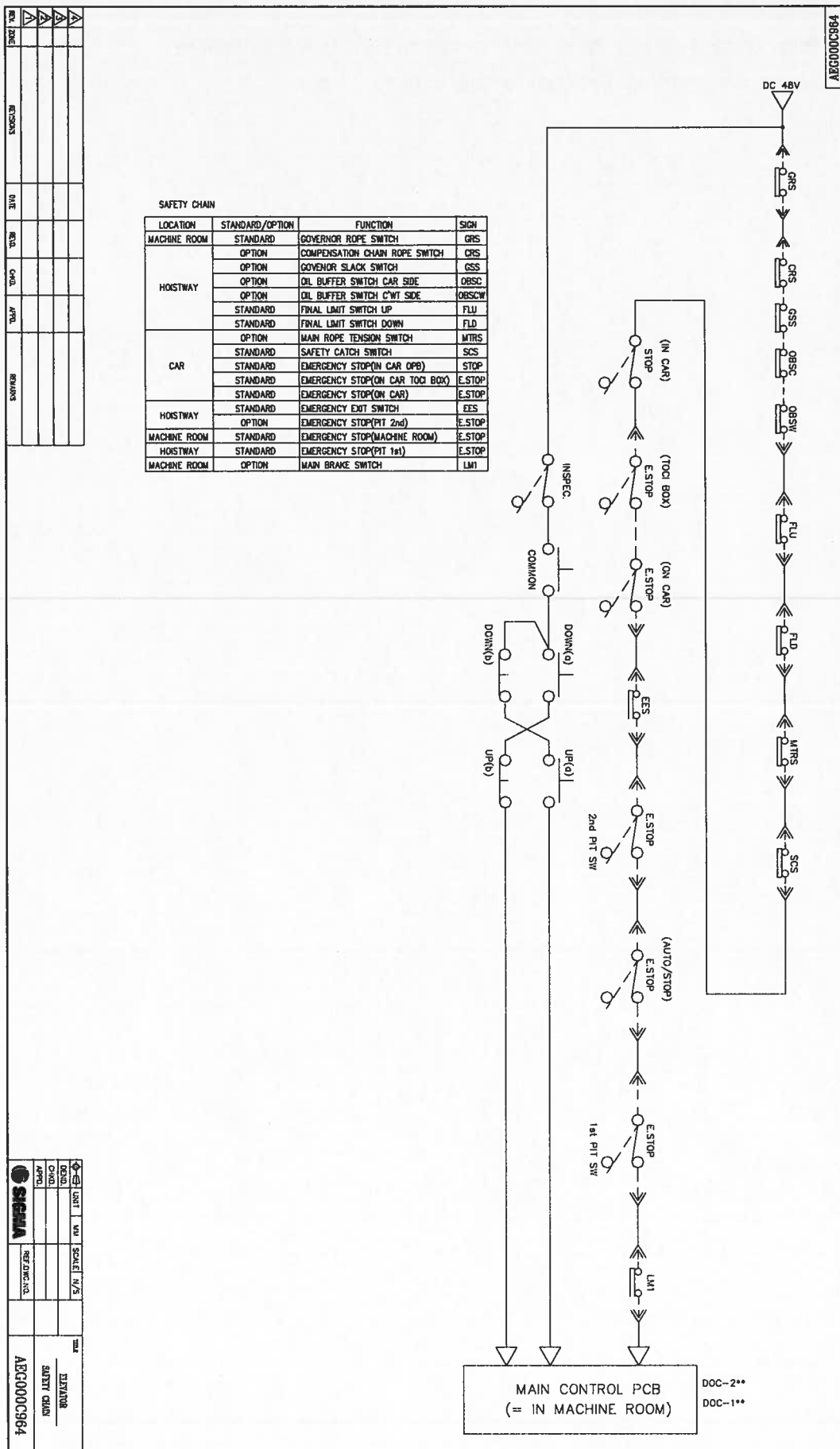
(Recorded by installation in charge)

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4.2 Electrical circuits

4.2.1 Electrical safety circuits(Traction Machine Elevator)

The *wiring* diagram *is* limited to the *safety* circuit



5. Instructions for normal use

This section gives instructions and advice on how to operate your lift. You are

advised that the relevant information from the section is made available to all lift users. A general explanation is given about the operation of most types of passenger lifts and passenger goods lifts.

5.1 Description of devices

NOTE: See Section 3.2 for your installation type.

5.1.1 Kinds of Elevator

Elevator can be separated in different kinds by division method, here we distinguish elevator by driving ways and using purpose.

5.1.1.1 Using method

Passengers Elevator

Passengers Elevator normally have 6,8,9,10,11,13,15,17,20,24 rated persons load, and speed is 30m/min~420m/min.

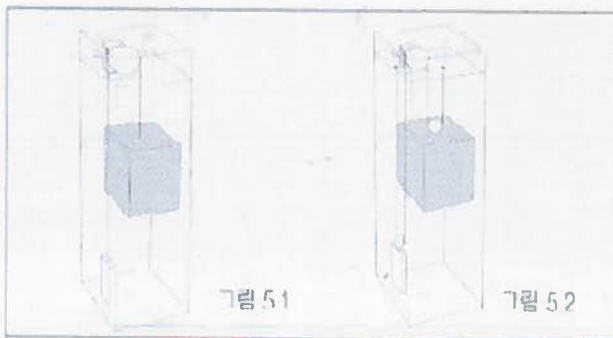
Goods Elevator / Car Elevator

Goods Elevator rated load is 750kg~5000kg, and Car Elevator rated load is 2000kg, 2500kg. Goods Elevator / Car Elevator speed is 20m/min~60m/min.

5.1.1.2 Distinguish Elevator by driving ways

Traction Model

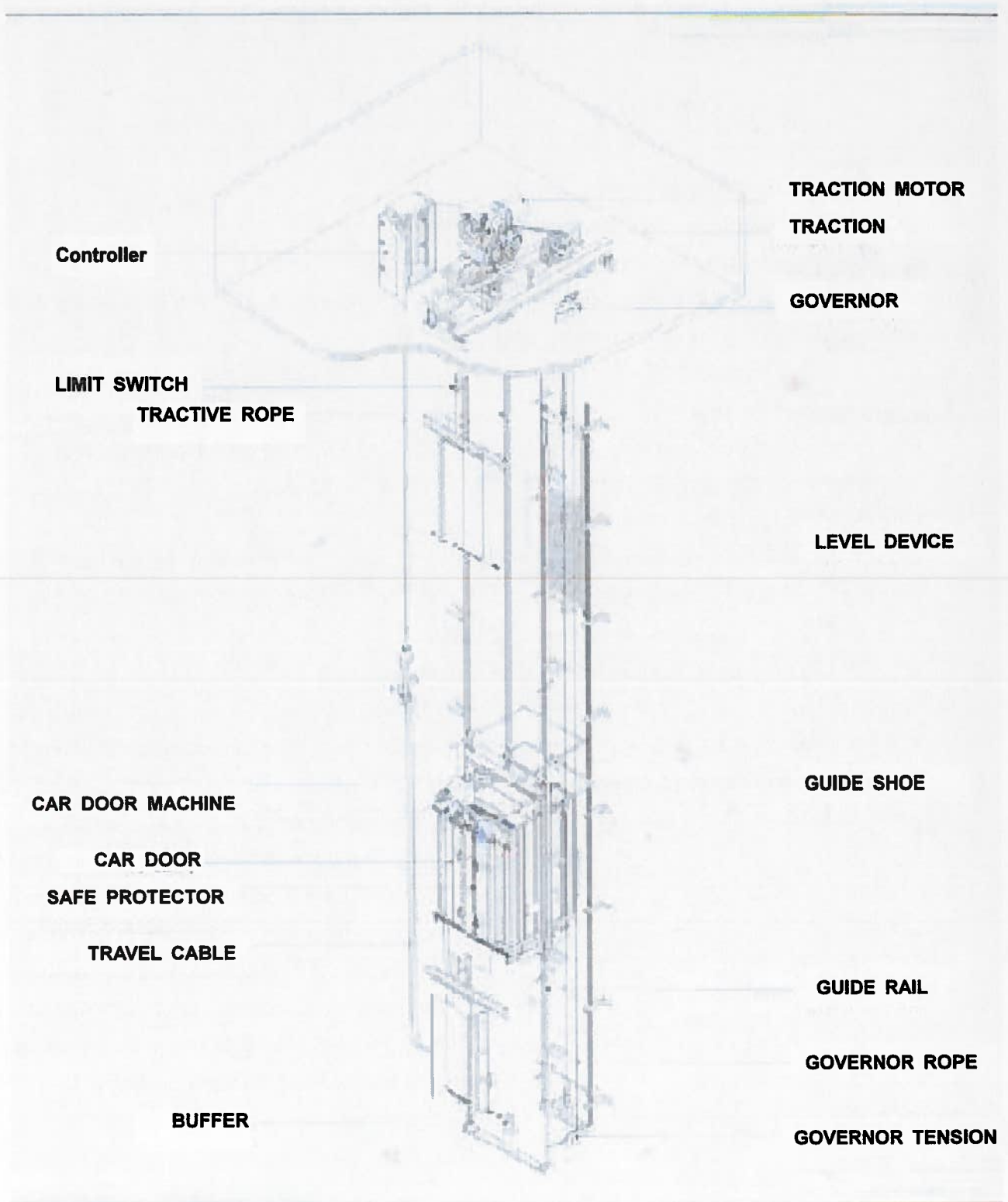
The machine transfers a movement to the car in up or down direction through traction rope. The car is balanced with a counterweight (adherence traction). The monitoring of the all



installation(speed, stops, car or landing calls...) is done in the controller. Machine and Controller are located in the machine room, above side or below the hoistway. The roping can be direct from the car to traction pulley of the machine to counterweight (configuration 1:1) (figure 5.1) or with return pulley on car and counterweight (configuration 2:1) (figure 5.2).

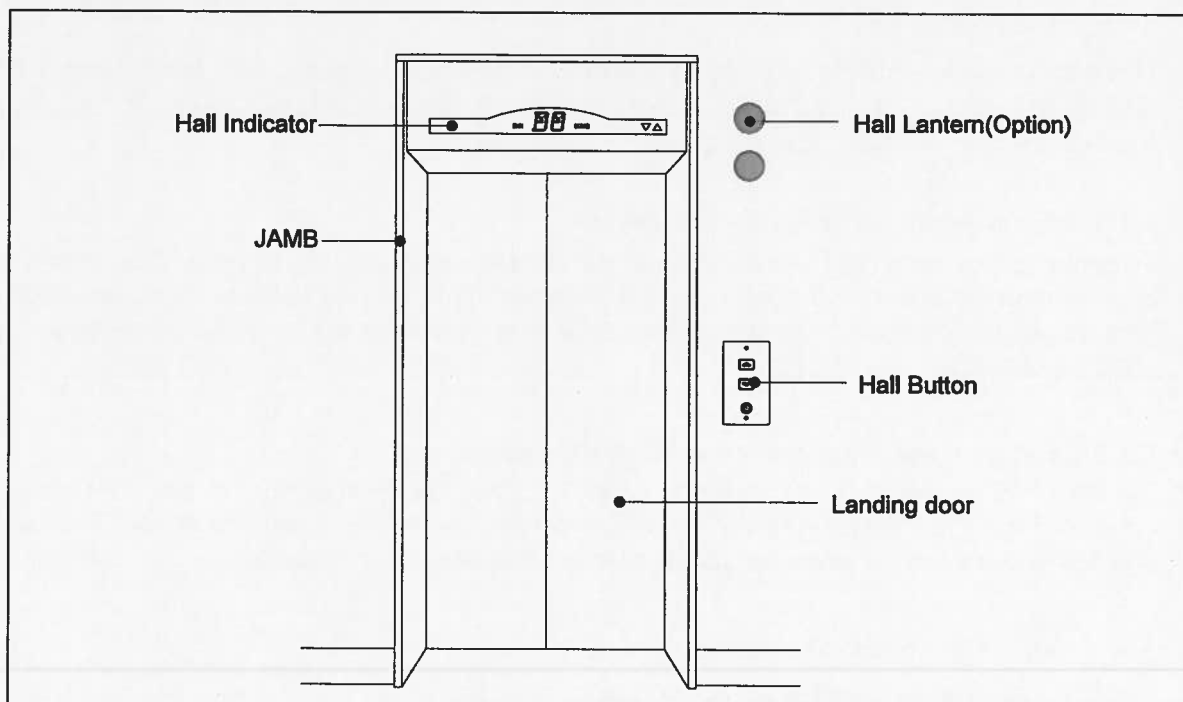
5.1.2 Devices of elevator

5.1.2.1 Traction Model elevator

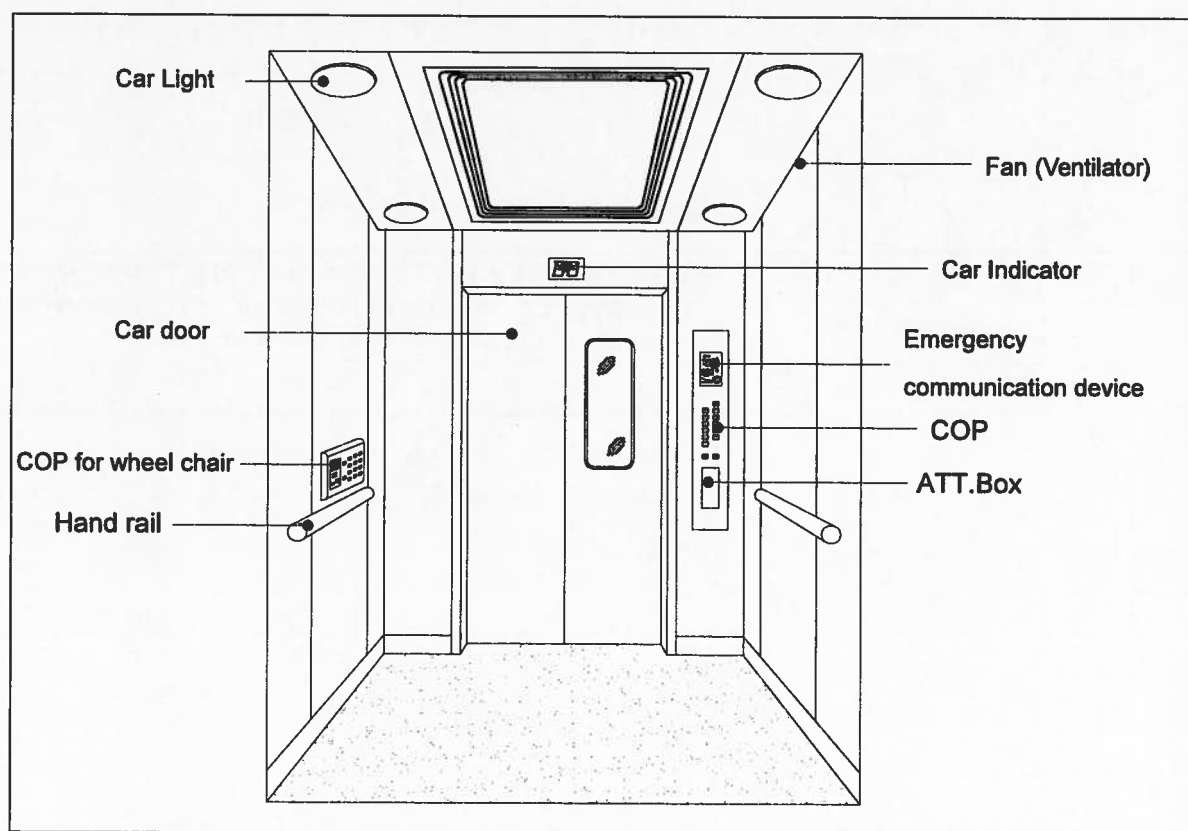


5.1.2.3 Hall and car inside

▲ Elevator hall



▲ Car inside



5.1.3 Safety devices

5.1.3.1 Safety Circuit

We apply various safety circuits to ensure passenger's safety. Car door must fully closed before run. If any kind of safety switch landing door lock contact or car door lock contact is opened, car will stop immediately.

5.1.3.2 Emergency communication device

The emergency communication button is installed at car inside. If you press the button, you can communicate with someone who is working in management room or indicated place. This device will connect to skilled operation manager, and he will help passengers rescue as soon as possible.

5.1.3.3 Safety edge shoe switch and Photo sensor

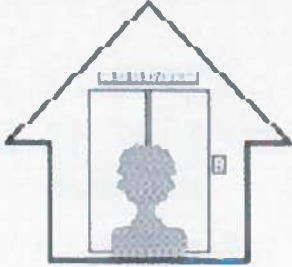
Elevator has contact type door reversing device. It will be opened door again, if it touches obstacles. For the passenger's convenience, we also apply photo sensor. A door will be opened again even if it does not touch anything but detecting obstacle.

5.2 Guide for normal operation

5.2.1 Safe guideline for elevator use

Elevator is one way of modern safe transportation, but it requires plenty of responsibilities and common sense of passengers and owners. If it is operated carefully, you may use it for a long time without breakdown.

This chapter will explain about guide and regulation that should be kept by an operation manager or owner to operate elevator properly with safe.

	Caution <u>Operation manager (Provision)</u> Elevator owner must hire an operation manager who has elevator operation knowledge and experience to ensure safe operation management.
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	Caution
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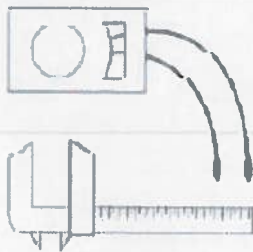


Caution

Indicate a sub operation manager or agent in case of that the operation manager is absent.

*** Job Scope**

1. Making of lift management regulation and its management
2. Recording of lift breakdown and repair
3. Making of Emergency communication network against lift breakdown or accident
4. Making and managing of rescue or first aid system
5. Reporting of accident
6. Managing of standard safe device
7. Key keeping



Caution

Elevator Inspection (Provision)

Elevator owner must follow the government rule or local regulation about periodic elevator inspection and test

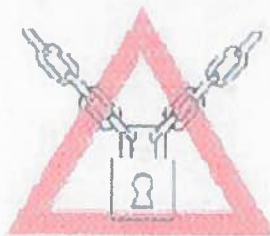


Caution

Machine room accessing

Corridor to machine room must be cleaned without hindrances.

Accessing machine room must not be interrupted in emergency condition, rescue and maintenance.



Warning

Control panel lock device (Provision)

Lock the control panel in machine room. It is permitted to only maintenance workers. If control panel is left with open, somebody shall get electric shock.



Caution



Caution

Machine room and landing hall require enough light. Lighting power must be separated from main power, and its switch must install at near of entrance.



Caution

Machine room protection from snow, rain and water

Machine room that control panel is installed must be protected from snow, rain and water. Control panel shall be burnt down and some part will not operate normally if they penetrate in top floor and top hoistway. Install the proper protecting device.



Caution

Preparation of fire extinguisher

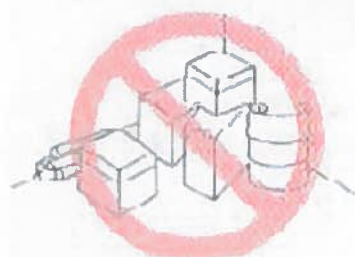
Put a fire extinguisher at machine room (powder type)



Warning

Prohibition of other equipment

Any kind of other equipment installation, conducting and wiring is not allowed at machine room and hoistway. It may interrupt normal traveling



Warning

Prohibition of loading in pit (Provision0

Do not use the pit as work area or warehouse. Because there are important devices as buffer and emergency switches, loading may interrupt their function.

	Warning <u>Key Keeping (Provision)</u> An operation manager must keep all keys, which are related to elevators. If key management is insufficient, rescue action may be delayed or other breakdown will occur. So, an operation manager must keep these keys -machine room, landing door, COP, Control panel - And its keeping place must be decided to limit their use and lost.
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The usage of each elevator and capacity is indicated on wall of elevator

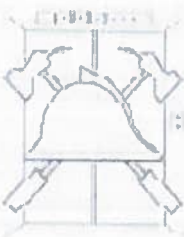
It is dangerous that using elevator for other purpose.

Be cautious that the loads in elevator exceed its designed/indicated capacity

Others	Warning <u>Prohibition of improper use (Provision)</u> Do not use elevator for improper use. It shall be a cause of accident or breakdown.
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	Caution <u>Prohibition of load exceeding (Provision)</u> Check the capacity of car, and be careful not to exceed load
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	Warning <u>Prohibition of temporary modification</u> Never modify the elevator for your convenience temporarily. Unauthorized car interior, wiring and part change and addition are all cause of breakdown or accident. And these thing can affect on elevator function and quality (If required, please contact maintenance manager or company)
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	Caution <u>Use of emergency elevator</u> Do not use the emergency elevator as freight carrying or others. It is designed for fire fighting. Fire fighters cannot use elevator if you use it for other aim.
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