HITACHI
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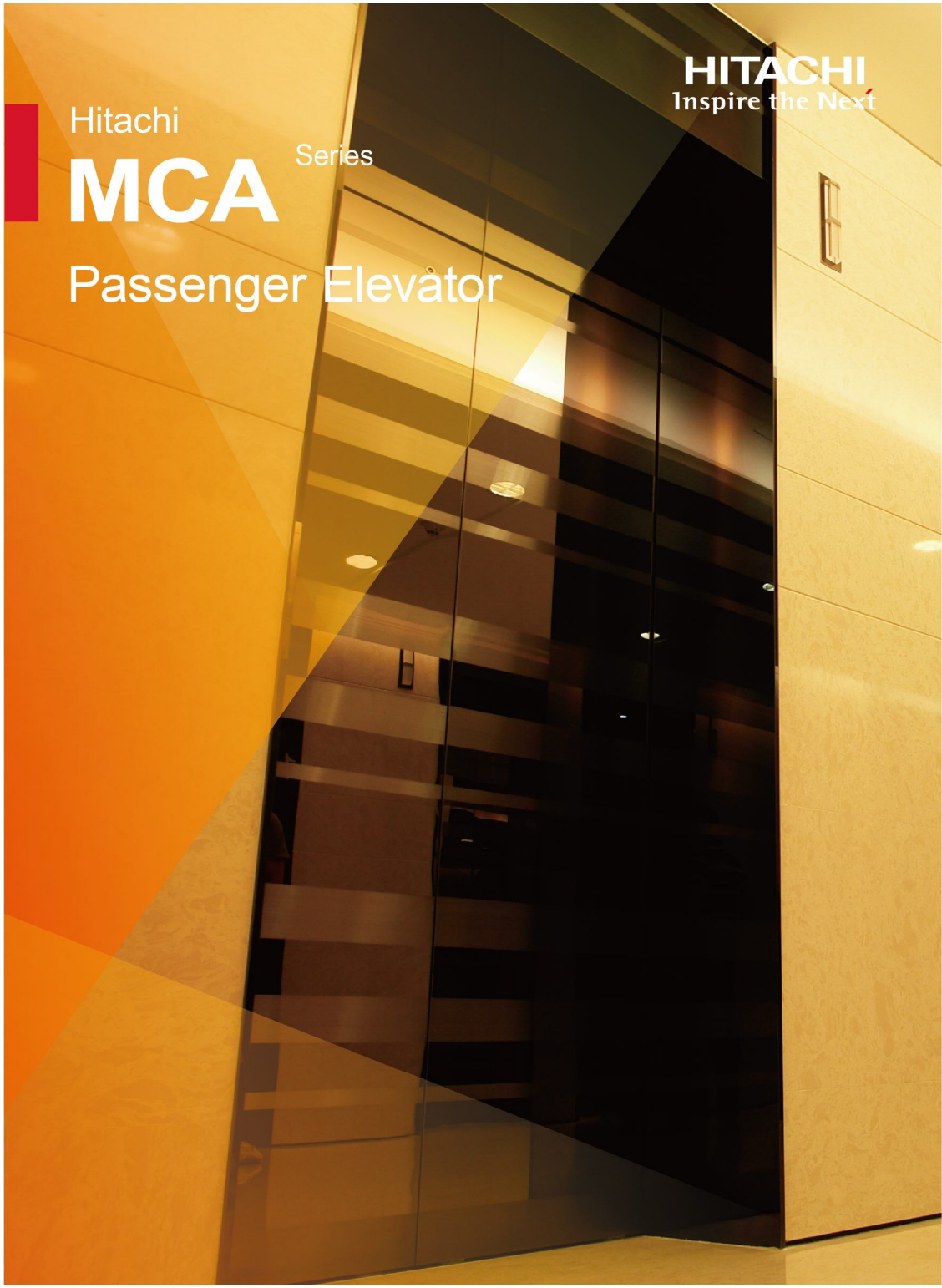

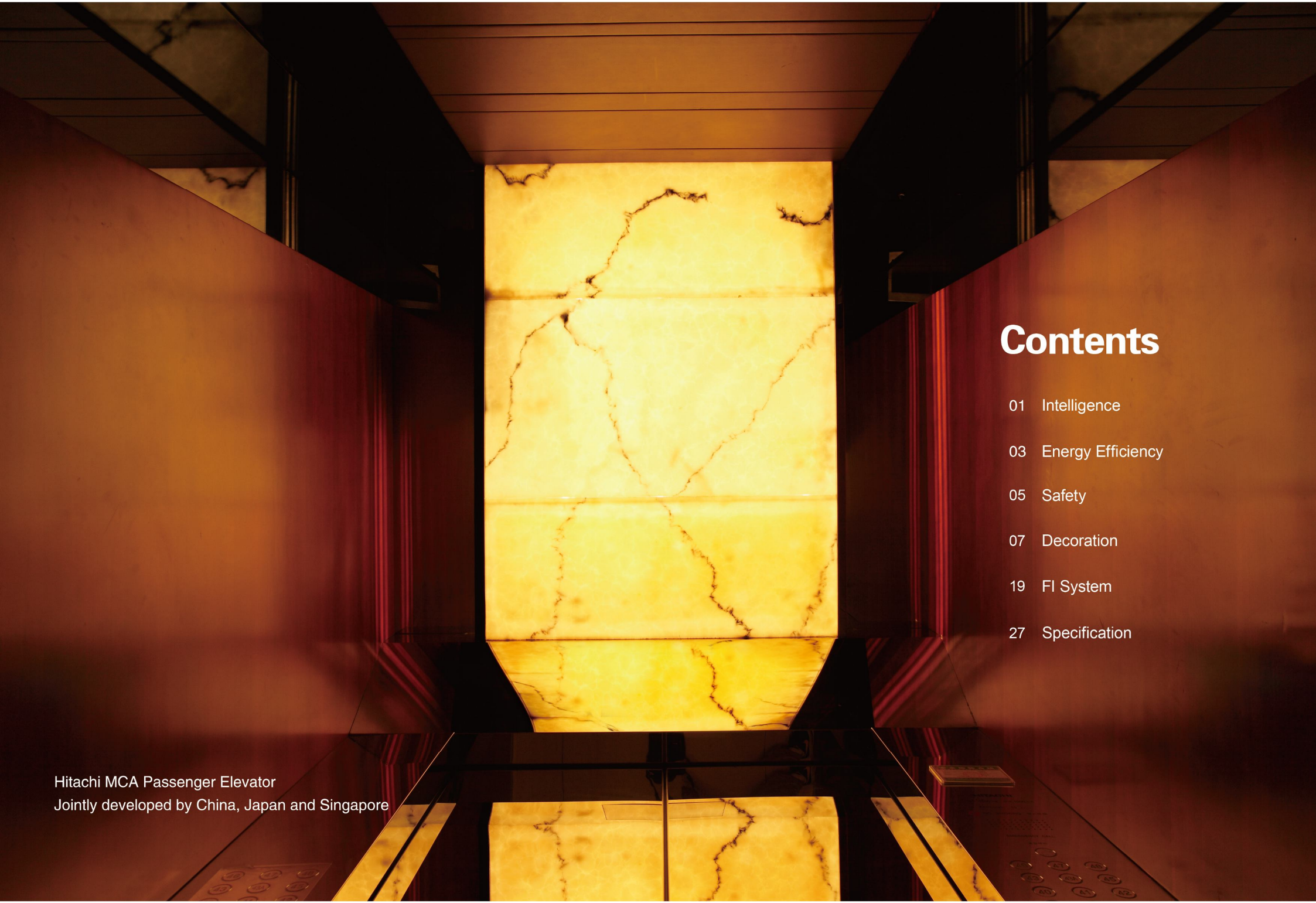

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Hitachi MCA Passenger Elevator
Jointly developed by China, Japan and Singapore

Intelligence

Hitachi Elevator has always been committed to seek the most effective control system. Today, Hitachi MCA passenger elevators have put together cutting-edge control technologies which aim to serve intelligent solutions for vertical transportation.

[A New Control System]

Hitachi new generation control system have 3 precision microprocessors for logic control, motor driving and communication. They work cohesively to ensure reliable, precise and responsive elevator operation.

[Serial Communication Technology]

Hitachi's unique serial communication technology, boost anti-jamming performance, thus enhancing stability and reliability of the system.

[Group Control Management]

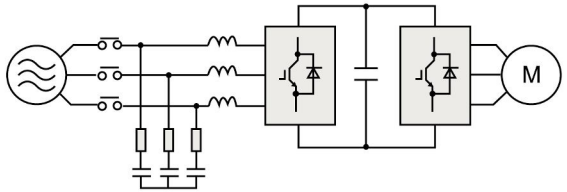
Intelligent FI group control management system responds efficiently to hall calls, effectively shortening the waiting and travel time, and able to adapt to real-time passenger traffic condition.

[Stepless Speed Control]

Hitachi stepless speed control technology optimises the speed through instantaneous calculations of the travel distance to achieve maximum operation speed.

Energy Efficiency

Hitachi MCA passenger elevator mastered renewable energy in permanent magnet synchronous technology, contributing to economic and social benefits through energy efficient concept.

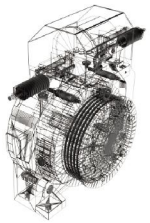


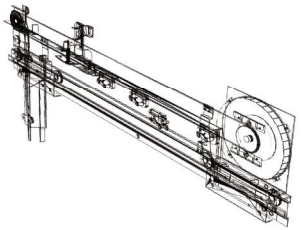
[Energy Regenerative Function] (Option)

Making use of the energy generated by an elevator when traveling downwards with a heavy car load or upwards with a light car load, the traction machine acts as a power generator to transmit power back to the electrical network in the building.

[Double Permanent Magnet Configuration]

- Main machine using high–precision permanent magnet synchronous motors, motor pole number increases, making the control more precise.
- Door system using permanent magnet synchronous technology, without mechanical reduction gear, avoids the energy loss of the corresponding structures, while improving the transmission efficiency, also guarantees a good safety and comfort of the elevator.





[LED Lighting] *applicable for selected ceilings only

- Using LED as a light source (including emergency lighting), low power, high brightness, with energy saving of 50% above compared to traditional light sources;
- Using the latest high efficieny constant current drives, started quickly, does not flicker, each light source works independently, avoids having a single faulty light to affect overall lighting effects;
- Professional optical design provides optimum lighting effects (bright uniform, glare–free). Meet the national–radio interference requirements, prevention of radio interference. Lighting in the car far exceeds the national standard, providing passengers a pleasant visual environment.

[EMC Standards] (Option)

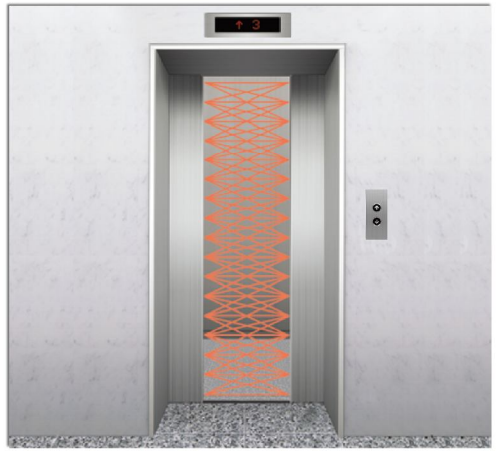
Hitachi MCA passenger elevators adopt EMC standards in line with the latest elevator EMC recommendation, ensuring that the elevator system does not cause radiation or conduction disturbance on the surrounding environment and equipments, while at the same time not under the influence of surrounding equipments.

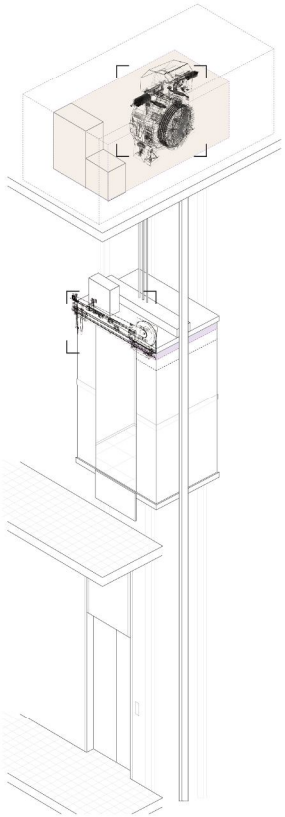
Safety

Passengers safety is always the upmost concern. Hitachi MCA passenger elevator, equip with multiple features to ensure safe and comfortable ride everytime.

[Seismic Protection Design]

Elevator is designed to be effective in reducing damage cause during earthquake, further protecting the passengers.



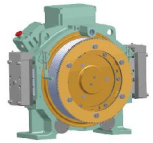


[Multi–beam Configuration]

- Power off automatically when idles, saving energy and improves multi–beam lifespan.
- The multi–beams fault–handling capability, improve the security of the door system.
- Judging by the "blocking time" and reoccurance rate, the elevator can distinguish and avoid false fault thus improve running efficiency.

[Brake]

Brakes are designed according to Hitachi standard, which is 50% higher than the industry standard. The high braking performance ensures the safety of the passengers in emergency cases.



Design · Displaying Unique Individuality

Hitachi MCA fusion leading global new passenger elevator car design concept, comprising new materials, new parts, new technology in one. New operation panel brings comfort and pleasure riding experience.

Standard Car Design

Height(from floor): 2450mm
For rated load: 630-2000kg
Car ceiling: RF-018
Painted Sheet Steel (matte champagne aluminum)
LED panel light + LED downlight
Front return panel: Stainless steel hairline
Transom: Stainless steel hairline
3 side walls: Stainless steel hairline
Car door: Stainless steel hairline
Floor: Vinyl tile(A-26)
Car operating panel: GOP-10N
Operating panel button: FL-PW
Indicator: Dot matrix

Standard Car Design (Deep Car)

Height(from floor): 2450mm
For rated load: 1050kg
Car ceiling: RF-018
Painted Sheet Steel (matte champagne aluminum)
LED panel light + LED downlight
Front return panel: Stainless steel hairline
Transom: Stainless steel hairline
3 side walls: Stainless steel hairline
Car door: Stainless steel hairline
Floor: Vinyl tile(A-26)
Car operating panel: GOP-636 (on side wall)
Operating panel button: FL-PW
Indicator: Dot matrix

Standard Car Design (Wide Car)

Height(from floor): 2450mm
For rated load: 1050kg
Car ceiling: RF-018
Painted Sheet Steel (matte champagne aluminum)
LED panel light + LED downlight
Front return panel: Stainless steel hairline
Transom: Stainless steel hairline
3 side walls: Stainless steel hairline
Car door: Stainless steel hairline
Floor: Vinyl tile(A-26)
Car operating panel: GOP-10N
Operating panel button: FL-PW
Indicator: Dot matrix

Operating Panel, Indicator Series

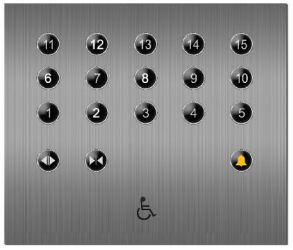
Operating Panel

GOP–10N
(Standard)/
GOP-030 (Standard on side wall)
Formed resin
≤ 36 floors

GOP–611
Stainless Steel Hairline
≤ 30 floors (Option)
>36 floors (Standard)

GOP-616
Stainless Steel Hairline

GOP-671
Stainless steel hairline
≤48 floors
Surface-mount Type



GOP-610
Stainless steel hairline
≤ 36 floors

Hall Button & Indicator

VIB-611
Indicator:
Dot matrix
Faceplate:
Stainless steel hairline
Surface-mount type
(Standard for simplex control)

VIB-611W
Indicator:
Dot matrix
Faceplate:
Stainless steel hairline
Surface-mount type
(Standard for Duplex control)

VIB-668
Indicator:
Monochrome
Faceplate:
Stainless Steel Hairline
Surface-mount Type
*Maintenance indication to be in English and Chinese

VIB-668W
Indicator:
Monochrome
Faceplate:
Stainless Steel Hairline
Surface-mount Type
*Maintenance indication to be in English and Chinese

VIB-616
Indicator:
Monochrome
Faceplate:
Stainless Steel Hairline

VIB-616W
Indicator:
Monochrome
Faceplate:
Stainless Steel Hairline

VIB-8A
Indicator:
Dot matrix
Faceplate:
Stainless steel hairline

VIB-8AW
Indicator:
Dot matrix
Faceplate:
Stainless steel hairline

HB-628
Faceplate:
Stainless Steel Hairline
Surface-mount Type

BL-56
Faceplate:
Stainless steel hairline

HB-628-01
Faceplate:
Stainless steel hairline
Surface-moun Type

HB-615
Faceplate:
Stainless steel hairline

Button

FL-PW (Standard)
DL-PO
FL-MB
FL-PWA
GDL-SO2
HL-PW
ML-MO
PL-MWB
UL-MW
FL-PW(braille)
DL-PO(braille)
FL-MB(braille)
FL-PWA(braille)
GDL-SO2(braille)
HL-PW(braille)
ML-MO(braille)
PL-MWB(braille)
UL-MW(braille)

Note: Braille buttons are of 2 digits max.

Hall Indicator (Option)

HF-119
Faceplate: stainless steel hairline

HF-109
Without faceplate, incorporate into transom

Hall Lantern (Option)

GHL-622-01
GHL-623-01
GHL-622
GHL-623
GHL-635
Surface-mount Type
(Without Chime)
GHL-636
(Without Chime)
GHL-639
(Without Chime)

GHL-668
Surface-mount Type
(Without Chime)

Ceiling Designs

Ceiling Designs (with/without car top emergency exit)

DX–301G

Material:Milky white acrylic
Ceiling trim:Anodized aluminium
Light Source：Annular tube light
Height (from floor):2300mm

DP-016A

Material: Painted Sheet Steel
(Matte champagne aluminum)
Light source: LED Panel light + LED downlight
Height (from floor):2450mm

DX–302G

Material Upper:Milky white acrylic
Material Lower:Transparent acrylic (with printed pattern)
Ceiling trim:Anodized aluminium
Light Source：Annular tube light
Height(from floor):2300mm

RF-013

Material: Painted Sheet Steel
(Matte champagne aluminum)
Light source: LED Track light + LED downlight
Height (from floor):2450mm

DX–303G

Material Upper:Milky white acrylic (printed rectangle pattern)
Material Lower:Transparent acrylic (printed rectangle pattern)
Ceiling trim:Anodized aluminium
Light Source：Annular tube light
Height(from floor):2300mm

DP-036

Material：Stainless steel hairline
Light source：LED Panel light
Height (from floor):2300mm

Ceiling Designs (without car top emergency exit)

RF-018(Standard)

Material：Painted Sheet Steel (matte champagne aluminum)
Light source：LED Panel light+LED downlight
Height (from floor):2450mm

CE-011

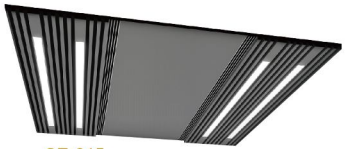
Material：Painted Sheet Steel
(Matte champagne aluminum)
Light source：LED Track light+LED downlight
Height (from floor):2400mm

DP-016

Material: Painted Sheet Steel (matte champagne aluminum)
Light source: LED Panel light + LED downlight
Height (from floor):2450mm

DP-045

Material：Painted Sheet Steel (Matte light tawny)
Light source：LED downlight
Height (from floor):2450mm



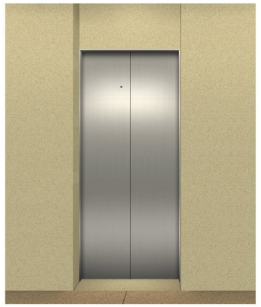
CE-015

Material：Painted Sheet Steel (Matte silver)
Light source：LED Track light
Height (from floor):2430mm

RF-012

Material：Painted Sheet Steel (Champagne gold)
Light source：LED Annular tube light
Height (from floor):2450mm

Jamb type



Jamb frame:**AS–1X** narrow type(Standard)
Stainless steel hairline finish
Door panel:Stainless steel hairline finish
Door sill:Extruded hard aluminum

Jamb frame:**SS–1X** wide type
Stainless steel hairline finish
Door panel:Stainless steel hairline finish
Door sill:Extruded hard aluminum

Jamb frame:**TS–1X** wide type
Stainless steel hairline finish
Door panel:Stainless steel hairline finish
Door sill:Extruded hard aluminum

Jamb frame:**SL–2X** wide type with transom
Stainless steel hairline finish
Door panel:Stainless steel hairline finish
Door sill:Extruded hard aluminum

Jamb frame:**TL–2X** wide type with transom
Stainless steel hairline finish
Door panel:Stainless steel hairline finish
Door sill:Extruded hard aluminum

Etching Pattern (Option)

P–009

P–041

MS–104

MS–142

MS–162

MS–164

MS–168

MS–177

*Note:Pattern shown in catalog are not to scale.

Car Floor Vinyl Tile (Standard)

A–26

D–035

FL-P009

S-014

S–043

S-048

S–133

S-693

*Note:Pattern shown in catalog are not to scale.

Handrail (Option)

AA–Y138
Stainless steel hairline or mirror

HR–M050
Stainless steel hairline or mirror

AA–BS
Stainless steel hairline

HR–M037
Stainless steel hairline

Car design variations

Car design variations			
Item	Finishes/Types	Standard	Option
Ceiling Type	RF-018(without car top emergency exit)	•	
	RF-012(without car top emergency exit)		•
	CE-011(without car top emergency exit)		•
	CE-015(without car top emergency exit)		•
	DP-016(without car top emergency exit)		•
	DP-045(without car top emergency exit)		•
	DP-036(with/without car top emergency exit)		•
	DX301G(with/without car top emergency exit)		•
	DX302G(with/without car top emergency exit)		•
	DX303G(with/without car top emergency exit)		•
	DP-016A(with/without car top emergency exit)		•
	RF-013(with/without car top emergency exit)		•
Car door/3 side walls/Transom/Front Return Wall	Stainless steel hairline	•	
	Stainless steel hairline(colour)		•
	Stainless steel hairline-etching		•
	Stainless steel hairline-etching(colour)		•
	Stainless steel mirror		•
	Stainless steel mirror(colour)		•
	Stainless steel mirror-etching		•
	Stainless steel mirror-etching(colour)		•
	Rust Proof Paint(RPP)		•
Kick Plate	Stainless steel hairline	•	
Car Sill	Extruded Hard Aluminum	•	
	Stainless steel hairline		•
Flooring	Vinyl Tile (A-26, D-035, FL-009, S-014, S-043, S-048, S-133, S-693)	•	
	Floor Recess (20mm/25mm/30mm) (Finishes by Others)		•
Handrail	AA-BS		•
	AA-Y138		•
	HR-M037		•
	HR-M050		•
Car Operating Panel	GOP-10N/ GOP-636 (on side wall)	•	
	GOP-611		•
	GOP-616		•

Hall design variations			
Item	Finishes/Types	Standard	Option
Jamb type	AS-1X, Jamb Width=50mm	•	
	SS-1X, Jamb Width<=300mm		•
	SL-2X, Jamb Width<=300mm		•
	TS-1X, Jamb Width<=300mm		•
	TL-2X, Jamb Width<=300mm		•
Jamb finish	Stainless steel hairline	•	
	Stainless steel hairline(colour)		•
	Stainless steel mirror		•
	Stainless steel mirror(colour)		•
	Rust Proof Paint (RPP)		•
Landing door	Stainless steel hairline	•	
	Stainless steel hairline(colour)		•
	Stainless steel hairline-etching		•
	Stainless steel hairline-etching(colour)		•
	Stainless steel mirror		•
	Stainless steel mirror(colour)		•
	Stainless steel mirror-etching		•
	Stainless steel mirror-etching(colour)		•
	Rust Proof Paint (RPP)		•
Sill	Extruded Hard Aluminum	•	
	Stainless steel hairline		•
Hall Calling Panel	VIB-611/VIB-611W	•	
	VIB-668/ VIB668W		•
	VIB-616/VIB-616W		•
	VIB-8A/VIB-8AW		•
	HB-628		•
	BL-56		•
	HB-628-01 (For Handicapped)		•
	HB-615 (For Handicapped)		•
Hall Lantern	GHL-622、GHL-622-01、GHL-623、GHL-623-01、GHL-635、GHL-636、GHL-639、GHL-668		•
Hall Indicator	HF-119、HF-109		•

Buttons Selections			
Item	Finishes/Types	Standard	Option
Normal	FL-PW	•	
	DL-PO、FL-MB、FL-PWA、GDL-SO2、HL-PW、ML-MO、PL-MWB、UL-MW		•
Braille	FL-PW、DL-POB、FL-MB、FL-PWA、GDL-SO2、HL-PW、ML-MO、PL-MWB、UL-MW		•

<FI Series>Implements Group Control in Response to Different Requirements of Different Buildings.

A group control system groups multiple elevators for achieving a well–balanced operation by taking waiting times into account. Such a system requires flexibility so that it can be used in various types and sizes of buildings and be responsive to changing traffic demand.

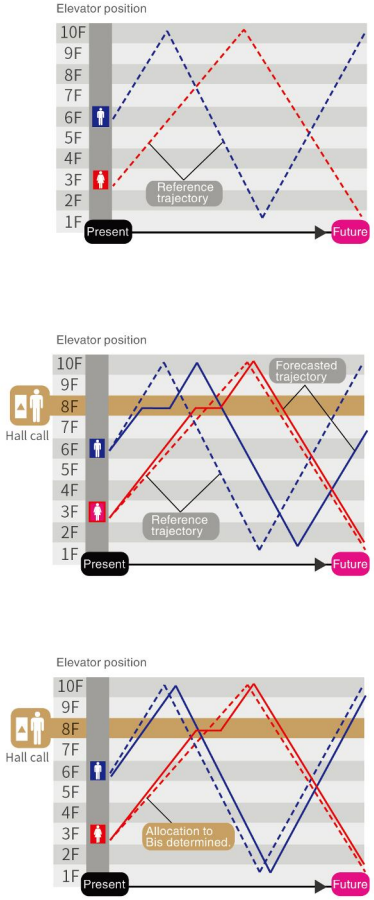
(FI-600)	(FI-100)	(FI-10)
(3—8 cars)	(3—6 cars)	(3—4 cars)
Allows a flexible control for elevator car allocation and the required number of cars according to the congestion state in the building and the type of building.	Elevator cars are allocated at equal time intervals according to "Reference–Trajectory Control" for shortening the average waiting times and reducing the probability of a long wait.	Provides a ring control to allocate the elevator car closest to the floor where a new hall call is registered.

Basic specification	Instantaneous reservation and service forecasting		
	Intelligent function Generation of new traffic flow modes Generation of optimum operation programs		
	Congested floor recognition		
	Multi-beam door sensor (with a traffic responsive door control system		
	Learning function •Collection of usage data •Recognition of traffic flow mode(40/2 mode) •Search for optimum operation program		
	Arrival notice indication (hall lantern and chimes)		
	Bunching prevention*		
	Future reference-trajectory control	Reference-trajectory control	Ring control
	Forecasting dynamic allocation control	Zone distribution control	Fixed floor distribution control
System name	FI-600	FI-100	FI-10 (Simplified group control)
Recommended number of cars in a group	3-8 cars	3-6 cars	3-4 cars
Type of building	Large office building Large hotel	Small office building Department store, hotel, hospital	Buildings with small traffic demand
Optional specification	VIP service, independent automatic operation		
	Service floor selection		
	Destination floor reservation system Centralized control for special floors Zoning express service		

*Bunching prevention: Using the "future reference-trajectory control" or the "reference-trajectory control" in the FI-600 or FI-100, elevator cars are operated at equal time intervals to prevent local bunching.

FI-600

Hitachi has evolved its elevator operation control to reduce waiting times, particularly long wait times, which comprises the heart of group control performance.
The future reference–trajectory control is a group control system aiming to minimize the long waiting period by operating elevator cars at equal time intervals while forecasting future trajectory.



1. Create a "reference trajectory" for allocating future elevator car positions at equal time intervals.
2. Create a "forecasted trajectory" of elevator cars when a hall call is made based on the current traffic demand and results of learning.
3. Calculate the deviation between the "reference" and "forecasted trajectories".
4. Allocate the elevator car which is closest to the "reference trajectory" to the hall call.
5. As a result, the elevator car is guided according to the "reference trajectory", shortening waiting times and reducing the probability of a long wait as well as preventing local bunching due to heavy traffic.

Standard Function

No.	Function		Description	FI series 600	FI series 100	FI series 10
1	Instantaneous Reservation and Service Forecasting (FI-IRF)		Upon receipt of a hall call, this function activates an elevator to serve this call, and at the same time the call is acknowledged by the hall lantern and chime.	●	—	—
2	Arrival Notice Indication (FI-ANI)		Four to five seconds prior to the arrival of an elevator, this function will activate the hall lantern flickering and the chime sound.	●	●	△
3	Basic call assignment Control	Future reference-traj-ectory control (FI-FRTC)	Controls the allocation of elevator cars to hall calls according to the future reference trajectory resulting from learning-based daily traffic flows.	●	—	—
		Reference-tra jectory control (FI-RTC)	Controls the allocation of elevator cars to hall calls based on the theory used in the highest model in the FI series, FI-600, and the intelligent-based data containing our know-how accumulated over a long period of time.	—	●	—
		Ring Control (FI-RC)	Allocates an elevator car closest to the floor where a new hall call is made.	—	—	●
4	Bunching prevention (FI-BP)		This function prevents local bunching of elevators using the "future reference-trajectory control" or the "reference trajectory control" for operating cars at equal time intervals.	●	●	—
5	Learning function	Collection of usage data (FI_CUD)	Collects the traffic status information by floor and direction for a unit time based on the elevator information such as car positions and the number of passengers getting on and off, and hall call information.	●	●	—
		Recognition of traffic flow mode (FI-RTM)	Extracts characteristics at any given moment, including congested floors, from the collected usage data, and identifies the traffic flow mode at that moment.	● 40 mode	● 2 mode	—
		Search for optimum operation program (FI_SOP)	Searches the optimum operation program of the moment based on the identified traffic mode.	●	●	—
6	Congested floor recognition (FI-CFR)		Identifies congested floors according to the usage data learned in each traffic flow mode.	●	—	—
7	Service Forecasting for Hall Call Assignment (FI-SFH)		This function assigns elevators to hall calls more precisely by forecasting the arrival time and number of passengers in the car according to the learning-based traffic demand.	●	—	—
8	Intelligent Function	Generation of new traffic flow modes (FI-GNT)	Extracts new characteristics according to the learning-based usage data, and registers them as a building-specific new traffic flow mode.	●	—	—
		Generation of optimum ope-ration programs (FI-GOP)	Generates an optimum operation program for a building by simulating the elevator operation according to the usage data learned in each traffic mode and preferential control target.	●	—	—
9	Energy Saving Preference Control (FI-ESC)		This system reduces the number of elevator cars in service when traffic demand is low.	●	—	—
10	Floor standby control	Forecasting dynamic allocation control (FI_FDA)	Dynamically allocates elevator cars in response to continuously changing situations in the building by determining the area assigned to each car according to the forecasted number of passengers and car usage.	●	—	—
		Zone distribution control (FI-ZD)	Distributes the idle elevator cars to the pre-assigned zones.	—	●	—
		Fixed floor distribution control (FI-FD)	Distributes the idle elevator cars to the pre-assigned floors.	—	—	●
11	Learning Based Concentrated Service (FI-LCS)		Centralizes the service to the learning-based congested floors during peak times including morning, lunch time and evening peaks while taking the service for other floors into account.	●	—	—
12	Automatic Door Open Time Control (FI-ADT)		This function automatically controls the duration of the door open time according to the floor and the kind of call (hall call or car call) as well as the elevator condition.	●	●	—

Operating Functions

No.	Function	Description	FI series 600	FI series 100	FI series 10
13	Centralized Control for Special Floors (FI_CCF)	This function preferentially assigns an elevator to the special floor.	△	—	—
14	VIP service (FI-VIP)	When welcoming or sending off important guests, this function permits an elevator to be summoned directly to the desired car call floor by pushing a specially provided hall button.	△	△	△
15	Scheduled reservation system (FI-SRS)	Allows the operator to schedule various elevator services in the building, including the reassignment of service floors, centralised service and priority service, at a specific date and time.	△	—	—
16	Zoning express service (FI-EZS)	Starts a divided express service when the park traffic demand takes place in the preset time zones.	△	—	—

Man-machine

No.	Function	Description	FI series 600	FI series 100	FI series 10
17	Hall Information (FI-HI)	General and elevator operation information is indicated on the hall indicator.	—	—	●
18	Car Information (FI-CI)	information useful for passengers is presented on the car indicator.	△	△	●
19	Multibeam door sensor (with a traffic responsive door control system) (FI-TFDC)	Detects passengers getting on and off with multiple infrared light beams that covers the full height and width of elevator doors, and adjusts the time of opening and closing of doors.	●	△	△

System Backup Operation Functions

No.	Function	Description	FI series 600	FI series 100	FI series 10
20	Group Management A.I. Microprocessor Malfunction Recovery System (FI-AMR)	If the A.I. micro-processor malfunctions, this system will allow hall call assignments to be carried out by choosing from standard modes of traffic flow.	●	—	—
21	Group management operation microprocessor malfunction recovery system (FI-OMR)	When the active micro-controller in the dual system fails, the standby micro-controller takes over the group control for continuing operation.	●	—	—
22	Hall call circuit malfunction recovery system (FI-HMR)	In the event that the associated hall call button is not responsive, other hall call buttons located on the same floor can be used for registering hall calls.	●	●	●
23	Group management control system malfunction recovery system (FI-GMR)	When the group management control system malfunctions, this system activates the "skip/stop" operation for all elevators, covering either the odd number or even number floors with respect to the lowest floor.	●	●	—
24	Individual signal or control microprocessor malfunction recovery system (FI-SMR)	When individual control microprocessor malfunctions, or when miscommunication is detected, this system isolates the elevator from the group management control immediately.	●	●	●
25	Individual control malfunction recovery system (FI-CMR)	If the hall call is not responded to for a certain period of time due to, for example, a fault in the mechanical shoe of the door, the failed section is disconnected from the group control until the normal operation is resumed.	●	●	●

●: Basic specification △: Optional specification —: Not applicable

Operating Systems & Functions

Communcation System/ Interface

No.	Name	Description	Standard	Option
1	Interphone System (4 way)	An interphone system between the elevator cage, cage top, pit and machine room is provided for emergency communication purposes.	•	
2	Interphone System (5 way)	An interphone system between the elevator cage, cage top, pit, machine room and control center is provided for emergency communication purposes.		•
3	Contact at Control Panel (RS485) for BMS Interface	This interfacing shall be done by means of RS485 communication connection to the building management system for their monitoring.		•
4	Contact at Control Panel (Dry Contacts) for BMS Interface	This interfacing shall be done by means of electrical dry contacts to the building management system for their monitoring.		•
5	Twisted Pair Cable (1 pair) for CCTV interface	This system enables the security personnel to monitor inside the elevator. This will be effective in preventing criminal and mischievous acts inside the elevator. (CCTV system is to be supplied by others)		•
6	Card Reader Interface (In Car)	This function allows controlled access to certain floors by means of ID cards. ID card reader system is to be provided and installed by others. Interfacing shall be by means of dry (voltage-free) contacts.		•

Emergency Operations

No.	Name	Description	Standard	Option
1	Car Emergency Lighting	In the event of a power failure, an emergency light inside the elevator will be automatically activated.	•	
2	Fire Emergency Operation (Automatic)	In the event of fire, the elevator is automatically brought to the designated floor where it remains inoperative for passengers safety.	•	
3	Automatic Rescue Device (ARD)	In the event of power failure, the elevator automatically switches to battery power to bring the elevator to the nearest floor. (This function is not applicable to building with private lobby layouts.)		•
4	Earthquake Emergency Operation	In the event that an earthquake is detected, the elevator will stop at the nearest floor. (This function is not applicable to building with private lobby layouts.)		•
5	Emergency Power Operation (Automatic)	In the event of building power failure, the elevator can be operated by the building standby generator to move the elevator to the designated floor.		•
6	Emergency Power Operation (Manual)	In the event of building power failure, the elevator (manually turn on) can be operated by the building standby generator to move the elevator to the designated floor.		•
7	Fireman Operation	In the event that fireman switch is turned on, the elevator returns to the designated floor and will be ready for firemen's use. Applicable for rated load >= 825kg		•
8	Pit Flood Operation	In the event of flooding in the pit, the elevator automatically goes to the nearest floor, open the doors to prevent passengers from being trapped inside and cease operation.		•

Service Functions

No.	Name	Description	Standard	Option
1	Advance Door Opening	The elevator automatically starts door opening action wen it is levelling with the destination floor to improve the operating efficiency.	• ≥ 120m/min	• =60~105m/min
2	Automatic Return Function	After all the calls have been served, the elevator will return to the start floor for standby.	•	
3	Automatic Turn-Off of Car Fan	In the event that the elevator is idle, the ventilation fan in the elevator is automatically turned off to conserve energy.	•	
4	Auto Illumination	In the event that the elevator is idle, the light in the elevator are automatically turned off to conserve energy.	•	
5	Destination Car Floor Button Flashing	The registered car destination floor button flashes when the elevator approaches the destination floor. This function is only applicable for simplex and duplex control.	•	
6	Floor "Deselect" Function (In Car)	This function allows you to cancel the selection of a floor you have pressed by mistake by pressing the button again. This thus eliminates unnecessary stops.	•	
7	Micro Levelling	Automatic correction of elevator landing level when subjected to varying car load.	• Travel≥45m	• Travel<45m

Service Functions

No.	Name	Description	Standard	Option
8	Mischievous Call Cancellation	In the event that a large number of car calls are registered by a small number of passengers, the calls are determined to be mischievous and will be automatically cancelled upon responding to the next call. This thus eliminates unnecessary stops.	•	
9	Opposite Direction Car Call Cancellation	Registered car calls in the elevator traveling opposite direction are cancelled after the elevator responds to all the registered car calls in one direction.	•	
10	Parking Operation	The elevator can be parked at the designated floor with a key switch.	•	
11	Starting Torque Auto-Adjustment	The elevator adjust its preset starting torque automatically according to the different loads of the cage to make the starting process of the elevator smooth and comfortable.	•	
12	Arrival Chime (Car Top & Bottom)	An electronic chime (located at the top and bottom of the elevator) will be sounded just before the arrival of the elevator.		•
13	Attendant Operation	For this system, the stop floor is manually set by an attendant, such as in a department store.		•
14	Door Open Prolong Button	In the event that this button on the car operation board is pressed, the elevator doors remain open for a pre-set period of time.		•
15	Electromagnetic Compatibility (EMC)	This function ensure that the elevator system does not cause or be affected by electromagnetic interferences/ disturbances to or from surrounding environment/equipment.		•
16	Floor Lock Out Operation	Specific service floors can be locked-out by activiting a switch. This function is not applicable with Card Reader Interface.		•
17	Hall Call Registration (In Car)	This function allow the elevator system to have a hall call signal displayed on the car operating panel in the elevator. It is applicable when attendant operation function is selected.		•
18	Hall Indicator Message Display (Standard Messages: maintenance)	Apart from indicating the direction of travel and number of floors of the elevator, the hall indicator can also display information such as "Full" and "Maintenance" to inform waiting passenger of the current status of the elevator.		•
19	Independent Operation	This operation system is used when there is a need to serve special passengers. Under this operation, no one is allowed to use the elevator from the hall call and the elevator is meant for exclusive use.		•
20	Abnormal Duration Hall Detection	In the event that hall call registration is expectionally long, this function will recongise this hall call as a fault and ignore the hall call.		•
21	Regenerative System	When travelling downwards with a heavy car load or upwards with a light car load, the traction machine acts as a power generator to transmit power back to the electrical network in the building. This function is not applicable for rated load: 1800~2000kg.		•
22	Voice Synthesizer	Preset standard messages are announced to the passengers by a voice synthesizer.		•

Operating Systems & Functions

Control Operations

No.	Name	Description	Standard	Option
1	Simplex	This is a fully automatic operation used for a single elevator system. Hall calls in the direction in which the elevator is travelling are responded to sequentially and when all calls in that direction are cleared, calls in the opposite direction will be responded to. When there are no more calls, the elevator will stay on the last floor served.	•	
2	Duplex	This is a fully automatic operation used for a two–elevator system. Hall calls are responded to by whichever elevator that can serve the hall call faster. When there are no more calls, one of the elevators will stand–by at the start floor while the other elevator will stay on the last floor served.		•
3	Down Collective	For this system, all floors have "down" call buttons only, except for the start floor, where there is "up" call button only. The other operations are the same as in selective–collective and duplex selective–collective operations.		•
4	FI-10 (Max: 4 Car per Group)	This is a simplified group control system used to operate three or four elevator cars. The system provides a ring control to allocate the elevator car closed to the floor where a new hall call is registered.		•
5	FI-100 (Max: 6 Car per Group)	This is a group control system used to operate three to six elevator cars in a medium-sized building. This system uses "reference-trajectory control",which is based on the theory used in the highest model of the "future reference-trajectory control".		•
6	FI-600 (Max: 8 Car per Group)	This is a group control system used to operate three to eight elevator cars in a large-sized building. This system consists of 3 smart systems: "Future reference-trajectory control", "learning system", "intelligent system".		•
7	Rush Hour Schedule Operation	By programming the rush–hour time, during this preset rush–hour timing, all the elevators automatically return to the start floor after serving the last call.		•
8	Floor Height Self Measurement	This function allows the elevator to automatically carry out self measure-ment of the building floor height and stores the data in the microcomputer of the elevator system to realize the precise control of the acceleration, deceleration of the elevator and position of each floor.	•	
9	Maintenance Operation	In the event that elevator maintenance is being carried out, the elevator operates at a lower speed.	•	

Safety functions

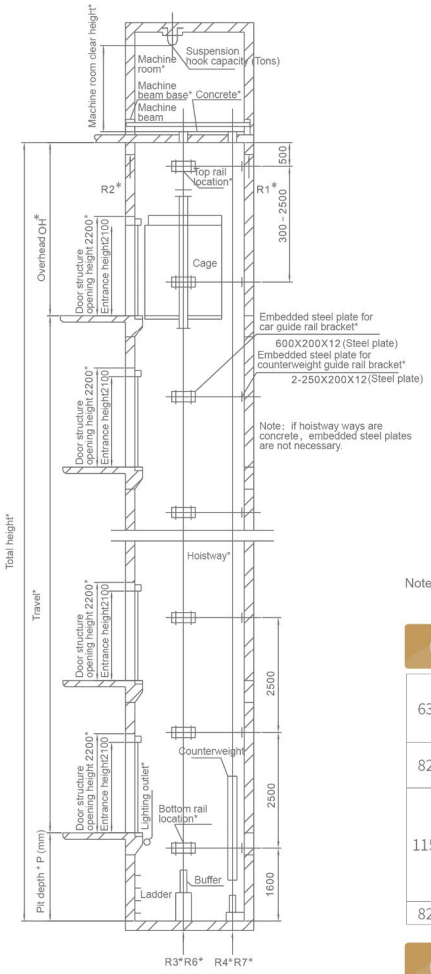
No.	Name	Description	Standard	Option
1	Alarm System	In the event of an accident, passenger can use the alarm button for help.	•	
2	Anti-electromagnetic Interference	This function protects the elevator electrical system from external electro-magnetic interference, and improves the reliability and environmental aspects of the elevator system.	•	
3	Automatic Door Dwell Time Adjustment	The duration of the door open timing is tailored to usage conditions, substantially improving operational efficiency.	•	
4	Automatic Fault Detection	Elevator can automatically detect and record the faults.	•	
5	Automatic Fault Recording	In the event of failure, this system allow the elevator to perform timely record-ing and classification of each failure for maintenance personnel trouble-shooting and debugging purposes.	•	
6	Door Safety Return System	In the event of door overload, such as when passengers get their fingers, hands or personal belongings caught in the door, this system automatically senses this and either re–closes or re–opens the door to prevent injury.	•	
7	Double Brake-Safety Detection	Traction machine is equipped with two sets of independent brakes with monitoring devices for feedback of working status to the elevator system.	•	
8	Door Opening/Closing Time Abnormity Protection	In the event door opening and closing action is blocked and the resistance does not activates the overload protection switch, this system automatically re-closes or re-opens the door.	•	
9	Door-Stop Function (Maintenance)	This function can prevent passengers from entering the elevator by keeping the door closed during the entire maintenance or debugging process.	•	
10	Full Load Bypass Operation	In the event that the elevator is fully loaded, this operation will not respond to any hall calls and will only respond to the car calls.	•	

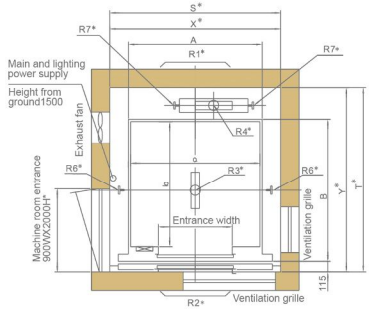
Safety functions

No.	Name	Description	Standard	Option
11	Lift-Position Abnormity Auto-Correction Function	In the event the elevator position is not in conformity with the analytical result of the system due to failure or man-made operation, the elevator will goes to the lowest floor automatically at low speed to re-calculate the position. After confirming the consistency between the elevator position and analytical result of the system, the elevator will resume its normal operation.	•	
12	Motor Idling Protection	When the elevator cage (or counterweight) stops down travel due to obstruction, the elevator will cease operation to prevent against motor idling and hoisting ropes skidding around the traction sheave.	•	
13	Motor Overload (Thermal) Protection	In the event of motor overheating, the elevator automatically goes to the nearest floor and open the doors to prevent passengers from being trapped inside.	•	
14	Multi-Beam Only	In the event that the beam paths are obstructed, this sensor, installed at the edge of the doors, will keep the doors open. Applicable to center opening door type only.	•	
15	Nearest Landing Operation	In the unlikely event of temporary trouble during operation, the elevator automatically goes to the nearest floor at a low speed and doors will open to prevent passengers from being trapped inside.	•	
16	Next Drive (Door Open Abnormity)	In the event elevator arrives at a destination floor and cannot open the door due to obstruction, the elevator automatically goes to the nearest floor and open the doors to prevent passengers from being trapped inside.	•	
17	Number of runs Indicator	This indicator at the control panel shows the accumulated travel times of the elevator.	•	
18	Out of Door-Open Zone Alarm	In the event that the elevator stops out of the door–open zone of a selected floor, doors will not open, and an alarm will be sounded in the elevator car.	•	
19	Over speed protection	In the event that the elevator is moving downwards at an abnormally high speed, the brakes will be automatically engaged and the elevator will cease operation.	•	
20	Overload Alarm	In the event of overloading, the buzzer will activate an alarm signal to inform that the elevator is overloaded.	•	
21	Overload Detection System	In the event of overloading, this system prevent the elevator from moving. Door closing operation is disabled and elevator remains at landing floor with door open.	•	
22	Standby Regular Auto-Check	When the elevator is under standby mode, this function allows the elevator system to carry out automatic checking of the safety loop to ensure it is in normal working condition.	•	
23	Synchronous Motor Magnetic Pole Static Test	This function allows self-tuning of offset position of magnetic pole of the motor.	•	
24	Multi-Beam + Safety Shoe	In the event that the beam paths are obstructed, this sensor, installed at the edge of the doors, will keep the doors open. Mechanical safety units are installed on both sides or one side of the elevator doors. In the event that passengers come into contact with the safety edges of closing doors, the doors will immediately reopen.	• 2S	• CO
25	Overload Indicator (In Car)	In the event of overloading, the position indicator will display an overload visual message to inform that the elevator is overloaded.		•

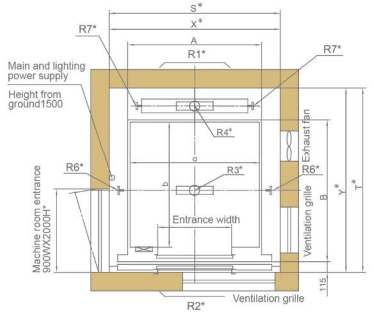
Hoistway and Machine Room (Standard Car Design, Counterweight Location: Rear)

Load(kg)	Speed (m/min)	Machine room clear height (mm)
630～1050	60/90/105	2000
1150～1600	60/90/105	2450
825～1600	120/150	2450
825～1350	180	2450
1800～2000	60/90/105/120/150	2500





Layout of counterweight on rear right (counterweight on rear left to be symmetrical layout)
(630kg - 60~105m/min; 825~1050kg - 60~120m/min)



(825~1050kg - 150~180m/min; 1150~1350kg - 60~180m/min; 1600~2000kg - 60~150m/min)

Note: 1.Items with"*" shall be furnished by building contractors.
2.For hoistway and machine room design details, please check with Hitachi.

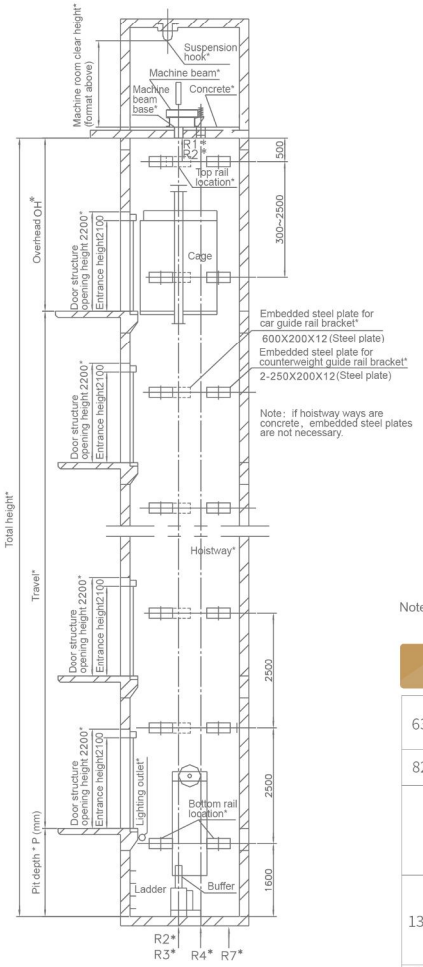
Load(kg)	Speed (m/min)	Overhead OH(mm)	Pit depth * P(mm)	
			(Travel≤70m)	(Travel>70m)
630～1050	60	4350	1450	—
	90	4450	1450	
	105	4550	1500	
825～1050	120	4700	1600	
	150	5100	1900	
1150～1600	60	4650	1450	—
	90	4650	1450	
	105	4800	1550	1600
	120	4850	1600	1650
	150	5100	1900	
825～1350	180	5450	2400	

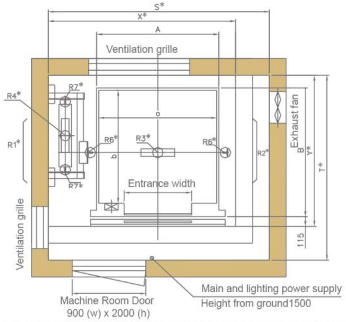
Load(kg)	Speed (m/min)	Overhead OH(mm)		Pit depth * P(mm)
		(Deco wt≤500kg)	(Deco wt>500kg)	
1800～2000	60	4650		1500
	90	4650	4900	1500
	105	4800	5050	1600
	120	4850	5100	1650
	150	5100	5200	1950

Load(kg)	Speed (m/min)	Suspension hook capacity (Tons)
630～1050	60/90/105	3
1150～1600	60/90/105	4
825～1600	120/150	4
825～1350	180	4
1800～2000	60/90/105/120/150	4

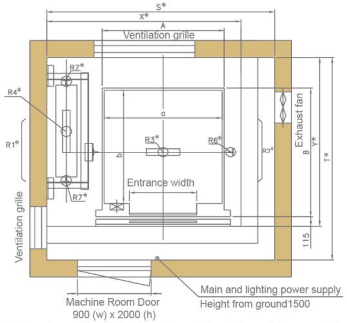
Hoistway and Machine Room (Standard Car Design, Counterweight Location: Side)

Load(kg)	Speed (m/min)	Machine room clear height (mm)
630～1050	60/90/105	2000
1150～1600	60/90/105	2450
825～1600	120/150	2450
825～1350	180	2450
1800～2000	60/90/105/120/150	2500





Layout of counterweight on left (counterweight on right to be symmetrical layout)
(630kg - 60~105m/min; 825~1050kg - 60~120m/min)



Layout of counterweight on left rear(counterweight on right rear to be symmetrical layout)
(825~1050kg - 150~180m/min; 1150~1350kg - 60~180m/min; 1600~2000kg - 60~150m/min)

Note: 1.Items with"*" shall be furnished by building contractors.
2.For hoistway and machine room design details, please check with Hitachi.

Load(kg)	Speed (m/min)	Overhead OH(mm)		Pit depth * P(mm)	
		(Travel≤70m)	(Travel>70m)	(Travel≤70m)	(Travel>70m)
630～1050	60	4350	—	1450	—
	90	4450		1450	
	105	4550		1500	
825～1050	120	4700		1600	
	150	5100		1900	
1150	60	4650	—	1450	—
	90	4650		1450	
	105	4800		1550	1600
	120	4850		1600	1650
	150	5100		1900	
1350～1600	60	4650	—	1450	—
	90	4650	4700	1450	1500
	105	4800	4850	1550	1600
	120	4900		1650	
	150	5100		1900	
825～1350	180	5450		2400	

Load(kg)	Speed (m/min)	Overhead OH(mm)		Pit depth * P(mm)
		(Deco wt<=500kg)	(Deco wt>500kg)	
1800～2000	60	4650		1500
	90	5050	5650	1500
	105	5250	5800	1600
	120	5300	5900	1650
	150	5400	6000	1950

Load(kg)	Speed (m/min)	Suspension hook capacity (Tons)
630～1050	60/90/105	3
1150～1600	60/90/105	4
825～1600	120/150	4
825～1350	180	4
1800～2000	60/90/105/120/150	4

Hoistway and Machine Room (Standard Car Design, Counterweight Location: Rear)

Load(kg) [Persons]	Speed (m/min)	Car(mm)		Entrance(mm)		Hoistway(mm)	Machine room (mm)	Machine room reaction loading(N)		Pit reaction loading(N)			
		Internal a×b	External A×B	Type	Width	X*Y	S*T	R1	R2	R3	R4	R6	R7
630 [8]	60	1400×1100	1450×1285	2P-CO	800	1830×1680	1830×1680	48500	30000	95000	82000	29000	3000
	90							51000	31500	101000	88000	34000	5000
	105												
825 [11]	60	1400×1350	1450×1535	2P-CO	800	1830×1930	1830×1930	58000	34500	113000	95000	37000	3000
	90							61000	36000	120000	103000	44000	5000
	105												
	120					1850×1950	1850×1950	73200	47000	153000	132000	55000	7000
	150					1850×1950	2100×1950	78000	48000	160000	148000	57000	7000
	180					1850×2050	2250×2050	116000	85000	209000	188000	75000	13000
	60	1400×1300	1450×1485	2P-CO	800	1830×1880	1830×1880	58000	34500	113000	95000	37000	3000
	90							61000	36000	120000	103000	44000	5000
	105												
	120					1850×1900	1850×1900	73200	47000	153000	132000	55000	7000
	150					1850×1900	2100×1900	78000	48000	160000	148000	57000	7000
	180					1850×2000	2250×2000	116000	85000	209000	188000	75000	13000
	60	1300×1400	1350×1585	2P-CO	800	1830×1980	1830×1980	58000	34500	113000	95000	37000	3000
	90							61000	36000	120000	103000	44000	5000
	105												
	120					1850×2000	1850×2000	73200	47000	153000	132000	55000	7000
	150					1800×2000	2075×2000	78000	48000	160000	148000	57000	7000
	180					1800×2100	2225×2100	116000	85000	209000	188000	75000	13000
900 [12]	60	1600×1350	1650×1535	2P-CO	900	2030×1930	2030×1930	63000	37000	122000	103000	40000	3000
	90							67000	39000	131000	112000	48000	5000
	105												
	120					2050×1950	2050×1950	74500	48000	158000	136000	58000	7000
	150					2050×1950	2200×1950	82000	50000	165000	160000	61000	7000
	180					2050×2050	2350×2200	118000	88000	224000	188000	77000	13000
1050 [14]	60	1600×1500	1650×1685	2P-CO	900	2030×2080	2030×2080	66000	40000	135000	113000	42000	3000
	90							69500	42000	145000	123000	50000	5000
	105												
	120					2050×2100	2050×2100	78000	48500	166000	140000	60000	5000
	150					2050×2100	2200×2100	89000	55000	175000	168000	64000	7000
	180					2050×2200	2350×2200	122000	89000	220000	190000	78000	13000
	60	1600×1400	1650×1585	2P-CO	900	2030×1980	2030×1980	66000	40000	135000	113000	42000	3000
	90							69500	42000	145000	123000	50000	5000
	105												
	120					2050×2000	2050×2000	78000	48500	166000	140000	60000	5000
	150					2050×2000	2200×2000	89000	55000	175000	168000	64000	7000
	180					2050×2100	2350×2100	122000	89000	220000	190000	78000	13000
	60	1500×1500	1550×1685	2P-CO	900	1960×2080	1960×2080	66000	40000	135000	113000	42000	3000
	90							69500	42000	145000	123000	50000	5000
	105												
	120					2000×2100	2000×2100	78000	48500	166000	140000	60000	5000
	150					2000×2100	2175×2100	89000	55000	175000	168000	64000	7000
	180					2000×2200	2325×2200	122000	89000	220000	190000	78000	13000
	60	1400×1600	1450×1785	2P-CO	900	1960×2180	1960×2180	66000	40000	135000	113000	42000	3000
	90							69500	42000	145000	123000	50000	5000
	105												
	120					2000×2200	2000×2200	78000	48500	166000	140000	60000	5000
	150					2000×2200	2175×2200	89000	55000	175000	168000	64000	7000
	180					2000×2300	2325×2300	122000	89000	220000	190000	78000	13000
	60	1500×1600	1550×1785	2P-CO	900	1960×2180	1960×2180	66000	40000	135000	113000	42000	3000
	90							69500	42000	145000	123000	50000	5000
	105												
	120					2000×2200	2000×2200	78000	48500	166000	140000	60000	5000
	150					2000×2200	2175×2200	89000	55000	175000	168000	64000	7000
	180					2000×2300	2325×2300	122000	89000	220000	190000	78000	13000

Hoistway and Machine Room (Standard Car， Counterweight Location：Rear)

Load(kg) [Persons]	Speed (m/min)	Car(mm)		Entrance(mm)		Hoistway(mm)	Machine room (mm)	Machine room reaction loading(N)		Pit reaction loading(N)			
		Internal a×b	External A×B	Type	Width	X*Y	S*T	R1	R2	R3	R4	R6	R7
1150 [15]	60	1800×1500	1850×1685	2P-CO	1000	2300×2200	2300×2200	82000	54000	165000	154000	51000	5500
	90							89000	58000	183000	175000	58000	9000
	105												
	120							92000	60000	192000	184000	68000	13000
	150												
	180							133000	94000	228000	197000	82000	18000
1350 [18]	60	2000×1500	2050×1685	2P-CO	1100	2550×2200	2550×2200	116000	91000	201000	171000	66000	11000
	90							131000	96000	233000	202000	76000	15000
	105												
	120							136000	101000	243000	212000	91000	16000
	150												
	180							136000	101000	246000	214000	93000	18000
1600 [21]	60	2000×1750	2050×1935	2P-CO	1100	2550×2450	2550×2450	126000	96000	211000	181000	71000	11000
	90							136000	101000	243000	212000	81000	15000
	105												
	120							141000	101000	263000	222000	96000	16000
	150												
1800 [24]	60	2200×1700	2250×1885	2P-CO	1200	2700×2400	2950×2400	175000	125000	245000	205000	85000	20000
	90							185000	125000	260000	220000	100000	25000
	105												
	120							190000	130000	270000	230000	110000	30000
	150												
2000 [26]	60	2200×1850	2250×2035	2P-CO	1200	2700×2550	2950×2550	185000	125000	260000	215000	90000	20000
	90							190000	130000	270000	225000	100000	25000
	105												
	120							195000	135000	280000	235000	115000	30000
	150												

Note: The dimensions above are compliant with GB standard.
Please consult Hitachi, if other standards are required.

Hoistway and Machine Room (Standard Car Design, Counterweight Location: Side)

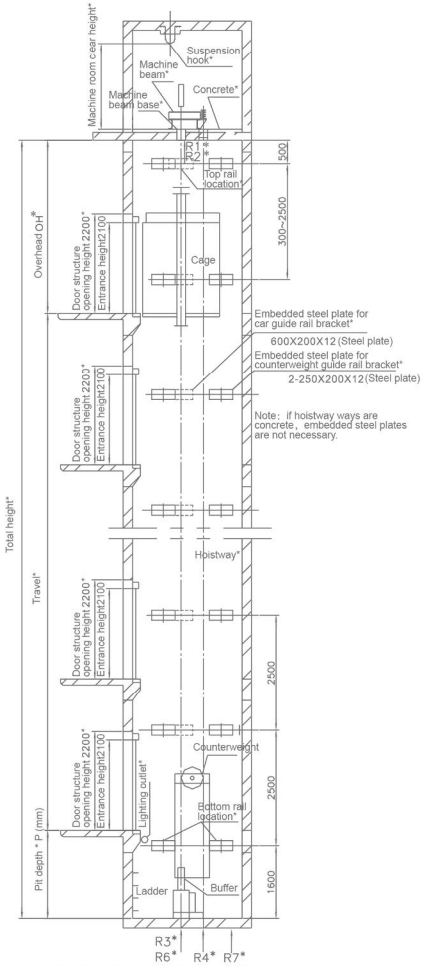
Load(kg) [Persons]	Speed (m/min)	Car(mm) Internal a×b	Car(mm) External A×B	Entrance(mm) Type	Entrance(mm) Width	Hoistway(mm) X*Y	Machine room (mm) S*T	Machine room reaction loading(N) R1	R2	R3	Pit reaction loading(N) R4	R6	R7
630 [8]	60	1400×1100	1450×1285	2P-CO	800	2150×1550	2150×1750	48000	31000	95000	82000	29000	3000
	90							50500	32000	101000	88000	34000	5000
	105												
825 [11]	60	1400×1350	1450×1535	2P-CO	800	2120×1800	2120×1850	56500	37000	113000	95000	37000	3000
	90							59500	38500	120000	103000	44000	5000
	105												
	120					2150×1800	2150×1850	67000	46500	140000	125000	54000	7000
	150					2150×1850	2150×1900	75000	48000	150000	145000	58000	7000
	180					2300×1850	2300×2050	116000	84000	209000	188000	75000	13000
	60	1400×1300	1450×1485	2P-CO	800	2120×1800	2120×1850	56500	37000	113000	95000	37000	3000
	90							59500	38500	120000	103000	44000	5000
	105												
	120					2150×1800	2150×1850	67000	46500	140000	125000	54000	7000
	150					2150×1850	2150×1900	75000	48000	150000	145000	58000	7000
	180					2300×1850	2300×2050	116000	84000	209000	188000	75000	13000
	60	1300×1400	1350×1585	2P-CO	800	2040×1850	2040×1850	56500	37000	113000	95000	37000	3000
	90							59500	38500	120000	103000	44000	5000
	105												
	120					2075×1850	2075×1850	67000	46500	140000	125000	54000	7000
	150					2075×1900	2075×1900	75000	48000	150000	145000	58000	7000
	180					2275×1900	2275×2050	116000	84000	209000	188000	75000	13000
900 [12]	60	1600×1350	1650×1535	2P-CO	900	2320×1800	2320×1850	61500	39000	122000	103000	40000	3000
	90							64500	40500	131000	112000	48000	5000
	105												
	120					2350×1800	2350×1850	72000	48000	155000	135000	58000	7000
	150					2350×1850	2350×1900	80000	49000	165000	160000	62000	7000
	180					2500×1850	2500×2050	120000	85000	219000	188000	77000	13000
1050 [14]	60	1600×1500	1650×1685	2P-CO	900	2320×1950	2320×1950	67600	40200	135000	113000	42000	3000
	90							70400	42100	145000	123000	50000	5000
	105												
	120					2350×1950	2350×1950	80000	50500	165000	145000	60000	7000
	150					2350×1950	2350×1950	89000	55000	175000	165000	65000	7000
	180					2500×1950	2500×2050	126000	88000	220000	190000	78000	13000
	60	1600×1400	1650×1585	2P-CO	900	2320×1850	2320×1850	67600	40200	135000	113000	42000	3000
	90							70400	42100	145000	123000	50000	5000
	105												
	120					2350×1850	2350×1850	80000	50500	165000	145000	60000	7000
	150					2350×1900	2350×1900	89000	55000	175000	165000	65000	7000
	180					2500×1900	2500×2050	126000	88000	220000	190000	78000	13000
	60	1500×1500	1550×1685	2P-CO	900	2235×1950	2235×1950	67600	40200	135000	113000	42000	3000
	90							70400	42100	145000	123000	50000	5000
	105												
	120					2275×1950	2275×1950	80000	50500	165000	145000	60000	7000
	150					2275×1950	2275×1950	89000	55000	175000	165000	65000	7000
	180					2425×1950	2425×2050	126000	88000	220000	190000	78000	13000
	60	1400×1600	1450×1785	2P-CO	900	2185×2050	2185×2050	67600	40200	135000	113000	42000	3000
	90							70400	42100	145000	123000	50000	5000
	105												
	120					2225×2050	2225×2050	80000	50500	165000	145000	60000	7000
	150					2225×2050	2225×2050	89000	55000	175000	165000	65000	7000
	180					2400×2050	2400×2100	126000	88000	220000	190000	78000	13000
	60	1500×1600	1550×1785	2P-CO	900	2235×2050	2235×2050	67600	40200	135000	113000	42000	3000
	90							70400	42100	145000	123000	50000	5000
	105												
	120					2275×2050	2275×2050	80000	50500	165000	145000	60000	7000
	150					2275×2050	2275×2050	89000	55000	175000	165000	65000	7000
	180					2425×2050	2425×2100	126000	88000	220000	190000	78000	13000

Hoistway and Machine Room (Standard Car Design, Counterweight Location: Side)

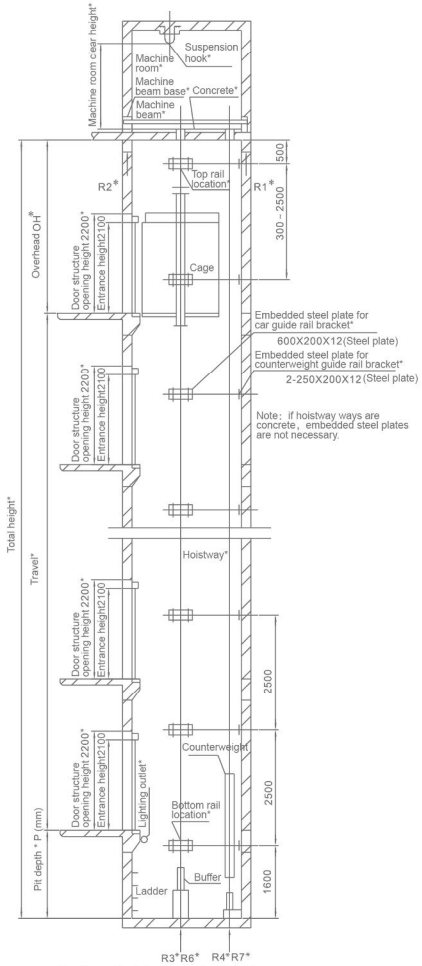
Load(kg) [Persons]	Speed (m/min)	Car(mm) Internal a×b	Car(mm) External A×B	Entrance(mm) Type	Entrance(mm) Width	Hoistway(mm) X*Y	Machine room (mm) S*T	Machine room reaction loading(N) R1	R2	R3	Pit reaction loading(N) R4	R6	R7
1150 [15]	60	1800×1500	1850×1685	2P-CO	1000	2700×1950	2700×1950	86000	49000	162000	150000	55000	5500
	90							94000	51000	182000	170000	62000	9000
	105												
	120							98000	55000	191000	182000	71000	13000
	150												
	180					2700×1950	2700×2050	135000	91000	228000	197000	82000	18000
1350 [18]	60	2000×1500	2050×1685	2P-CO	1100	2950×1950	2950×2100	126000	86000	201000	171000	66000	11000
	90							136000	91000	233000	202000	76000	15000
	105												
	120							141000	96000	243000	212000	91000	16000
	150												
	180						2950×2050	141000	96000	243000	212000	91000	18000
1600 [21]	60	2000×1750	2050×1935	2P-CO	1100	2950×2200	2950×2250	131000	91000	211000	181000	71000	11000
	90							141000	96000	243000	212000	81000	15000
	105												
	120							145000	99000	263000	222000	96000	16000
	150												
1800 [24]	60	2200×1700	2250×1885	2P-CO	1200	3150×2150	3150×2450	175000	125000	245000	205000	85000	20000
	90							185000	125000	260000	220000	100000	25000
	105												
	120							190000	130000	270000	230000	110000	30000
	150												
2000 [26]	60	2200×1850	2250×2035	2P-CO	1200	3150×2300	3150×2550	185000	125000	260000	215000	90000	20000
	90							190000	130000	270000	225000	100000	25000
	105												
	120							195000	135000	280000	235000	115000	30000
	150												

Note: The dimensions above are compliant with GB standard.
Please consult Hitachi, if other standards are required.

Load(kg)	Speed (m/min)	Machine room clear height(mm)	Suspension hook capacity(Tons)
1050	60/90/105	2000	3
	120/150	2450	4
	180	2450	4



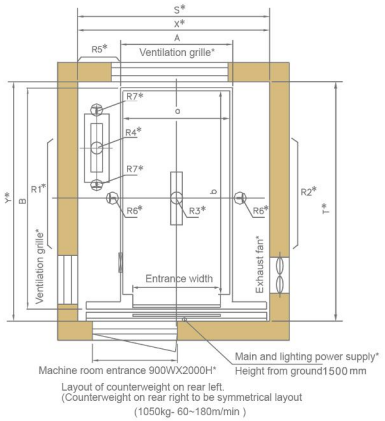
Section of hoistway drawing (left)
For Deep Car (Counterweight Location: Side)



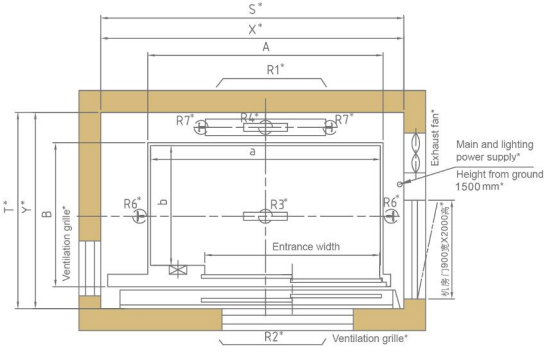
Section of hoistway drawing (right)
For Wide Car (Counterweight Location: Rear)

Load(kg)	Speed (m/min)	Overhead OH(mm)		Pit depth * P(mm)	
		(Travel ≤70m)	(Travel >70m)	(Travel ≤70m)	(Travel >70m)
1050	60	4350	—	1450	—
	90	4450		1450	
	105	4550		1500	
	120	4700		1600	
	150	5100		1900	
	180	5450		2400	

Note:
1.Items with"*" shall be furnished by building contractors.
2.For hoistway and machine room design details, please check with Hitachi.



Layout of counterweight on rear left.
(Counterweight on rear right to be symmetrical layout
(1050kg- 60~180m/min)



Layout of counterweight on rear
(1050kg- 60~180m/min)

Hoistway and Machine Room (Deep Car, Counterweight Location: Side)

Load(kg) [Persons]	Speed (m/min)	Car(mm) Internal a×b	Car(mm) External A×B	Entrance(mm) Type	Entrance(mm) Width	Hoistway(mm) X*Y	Machine room (mm) S*T	Machine room reaction loading(N) R1	R2	R5	Pit reaction loading(N) R3	R4	R6	R7
1050 [14]	60	1100×2100	1150×2285	2P-CO	900	1960×2500	1960×2500	67600	40200	5500	135000	113000	42000	3000
	90							70400	42100	5500	145000	123000	50000	5000
	105													
	120					2000×2500	2000×2500	77000	48000	6000	165000	145000	60000	7000
	150							78000	55000	7000	195000	165000	65000	7000
	180					2100×2550	2100×2550	129000	86000	—	220000	190000	78000	13000
1050 [14]	60	1300×1900	1350×2085	2P-CO	900	2050×2300	2050×2300	67600	40200	5500	135000	113000	42000	3000
	90							70400	42100	5500	145000	123000	50000	5000
	105													
	120					2100×2300	2100×2300	77000	48000	6000	165000	145000	60000	7000
	150							78000	55000	7000	195000	165000	65000	7000
	180					2200×2350	2200×2450	129000	86000	—	220000	190000	78000	13000

Hoistway and Machine Room (Wide Car, Counterweight Location: Rear)

Load(kg) [Persons]	Speed (m/min)	Car(mm) Internal a×b	Car(mm) External A×B	Entrance(mm) Type	Entrance(mm) Width	Hoistway(mm) X*Y	Machine room (mm) S*T	Machine room reaction loading(N) R1	R2	R5	Pit reaction loading(N) R3	R4	R6	R7
1050 [14]	60	2000×1200	2050x1423	2S-2P	1200	2500×1850	2500×1850	66000	40000	—	135000	113000	42000	3000
	90							69500	42000	—	145000	123000	50000	5000
	105													
	120					2500×1870	2500×1870	76000	50000	—	165000	150000	60000	7000
	150							89000	60000	—	180000	175000	66000	7000
	180					2500×2050	2500×2050	122000	89000	—	220000	190000	78000	13000
1050 [14]	60	2000×1200	2050x1385	2P-CO (Door Offset)	1000	2500×1800	2500×1800	66000	40000	—	135000	113000	42000	3000
	90							69500	42000	—	145000	123000	50000	5000
	105													
	120					2500×1800	2500×1800	76000	50000	—	165000	150000	60000	7000
	150							89000	60000	—	180000	175000	66000	7000
	180					2500×1970	2500×1970	122000	89000	—	220000	190000	78000	13000

Note: The dimensions above are compliant with GB standard.
Please consult Hitachi, if other standards are required.

Arrangement

Service Floor

In some case, only one elevator is arranged to stop at the basement floor or the roof floor. However this is not recommended, because of the following reasons.

- (1) Since all the other elevators do not stop at the basement or the roof floor, people in some elevators have to transfer to the elevator that stops at such particular floors.
- (2) Not only the efficiency of service to such particular floors decrease but also the efficiency to all floors decreases.

Unification of starting floor

In many cases, the building has several entrances on the second or third floors. In this case, it is recommended to unify the starting floor using escalators.

Bank arrangement

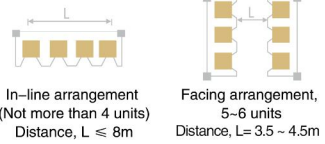
In order to realize a good service level in a group of elevators, the following points shall be considered.

- (1) Maximum in-line elevator arrangement is 4 elevators. Walking distance of person shall be within 8m. (Elevators distance of both sides)
- (2) In case the number of elevators is more than 4 units, they shall be in facing arrangement and the distance of facing elevators shall be 3.5 ~ 4.5m.
- (3) Since the elevators shall be looked over in hall from every direction, the pillar shall not project to the elevator hall.

Examples of Bank Arrangement

One group

Desirable Examples of Bank Arrangement

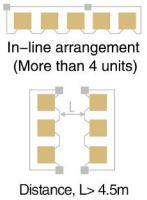


In-line arrangement (Not more than 4 units) Distance, L ≤ 8m

Facing arrangement, 5~6 units Distance, L= 3.5 ~ 4.5m

Undesirable Examples of Bank Arrangement

Pillar at lift lobby or entrance



In-line arrangement (More than 4 units)

Distance, L> 4.5m

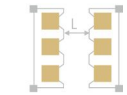
More than 2 groups

Desirable Examples of Bank Arrangement

Low zone More than 6m Distance, L = 3.5~4.5m

Undesirable Examples of Bank Arrangement

High zone Low zone In-line of two zones



High zone Low zone Distance, L < 4.5m

Elevator Specification List

Specification Range

No	Persons	Load (Kg)	Speed (m/min)
1	8	630	60/90/105
2	11	825	60/90/105/120/150/180
3	12	900	60/90/105/120/150/180
4	14	1050	60/90/105/120/150/180
5	15	1150	60/90/105/120/150/180
6	18	1350	60/90/105/120/150/180
7	21	1600	60/90/105/120/150
8	24	1800	60/90/105/120/150
9	26	2000	60/90/105/120/150

Passenger Numbers calculated at 75 kg per person.

Load(kg)	Speed (m/min)	Maximum number of stops	Maximum travel (m)	Maximum travel with fireman operation (m)	Minimum floor to floor height (mm)
630/825/900/1050/1150/1350/1600/1800/2000	60	22	60	58(NA for 630kg)	
630/825/900/1050/1150/1350/1600/1800/2000	90	40	100	86(NA for 630kg)	
630/825/900/1050/1150/1350/1600/1800/2000	105	40	100	99.5(NA for 630kg)	
825/900/1050/1150/1350/1600/1800/2000	120	48	140	115	2800
825/900/1050/1150/1350/1600/1800/2000	150	48	140	140	
825/900/1050/1150	180	48	150	150	
1350	180	48	120	120	

Elevator Data

No.	Load-Speed	Supply Voltage	Circuit Breaker Capacity(A)		Transformer Capacity(KVA)		Main Power Wire Size (mm²)		Earth Wire Size (mm²)		Machine Room Ventilation		
			1 unit	2 units	1 unit	2 units	1 unit	2 units	1 unit	2 units	Heat Calorific Value (J·10⁵/h)	Amount of Air to be Ventilated (m³/h)	Ventilating Fan Size Dia (φ mm)
1	630-60	3φ 380V 1φ 220V 50Hz	20	20	5	8	6	8	6	8	3.97	459.9	200
	630-90		20	30	8	12.5	8	10	8	10	5.94	684.9	250
	630-105		30	30	8	12.5	8	16	8	16	6.93	797.4	250
2	825-60		20	30	6.3	10	6	10	6	10	5.19	599.19	250
	825-90		30	40	8	16	8	16	8	16	7.78	893.83	250
	825-105		40	40	10	16	10	25	10	16	9.08	1041.15	300
	825-120		40	40	12.5	20	10	25	10	16	10.37	1188.47	300
	825-150		40	50	12.5	25	16	25	16	16	12.96	1483.11	300
	825-180		50	60	16	25	25	30	16	16	15.55	1777.76	350
3	900-60		20	30	6.3	12.5	8	10	8	10	5.66	652.76	250
	900-90		30	40	10	16	10	25	10	16	8.49	974.19	300
	900-105		40	40	10	20	10	25	10	16	9.9	1134.9	300
	900-120		40	50	12.5	20	10	25	10	16	11.31	1295.61	300
	900-150		40	60	16	25	16	30	16	16	14.14	1617.04	300
	900-180		50	75	16	31.5	25	30	16	16	16.97	1938.47	350
4	1050-60		20	30	8	12.5	8	16	8	16	6.6	759.9	250
	1050-90		40	40	10	20	10	25	10	16	9.9	1134.9	300
	1050-105		40	50	12.5	20	16	25	16	16	11.55	1322.4	300
	1050-120		40	50	16	25	16	25	16	16	13.2	1509.9	300
	1050-150		50	75	16	31.5	25	30	16	16	16.5	1884.9	350
	1050-180		60	75	20	31.5	25	35	16	16	19.79	2259.9	350
5	1150-60		30	30	8	16	8	16	8	16	7.23	831.33	250
	1150-90		40	50	12.5	20	10	25	10	16	10.84	1242.04	300
	1150-105		40	50	12.5	25	16	25	16	16	12.65	1447.4	300
	1150-120		40	60	16	25	16	30	16	16	14.45	1652.76	300
	1150-150		50	75	20	31.5	25	30	16	16	18.07	2063.47	350
	1150-180		60	100	20	40	25	35	16	16	21.68	2474.19	400
6	1350-60		30	40	10	16	10	25	10	16	8.49	974.19	300
	1350-90		40	50	12.5	25	16	25	16	16	12.73	1456.33	300
	1350-105		50	60	16	25	16	30	16	16	14.85	1697.4	300
	1350-120		50	75	16	31.5	25	30	16	16	16.97	1938.47	350
	1350-150		60	100	20	40	25	35	16	16	21.21	2420.61	350
	1350-180		75	100	25	40	30	50	16	25	25.44	2902.76	400
7	1600-60		40	40	10	20	10	25	10	16	10.06	1152.76	300
	1600-90		50	60	16	25	16	30	16	16	15.08	1724.19	300
	1600-105		50	75	20	31.5	25	30	16	16	17.59	2009.9	350
	1600-120		60	75	20	31.5	25	35	16	16	20.11	2295.61	350
	1600-150		75	100	25	40	30	50	16	25	25.13	2867.04	400
8	1800-60		75	75	16	25	16	30	16	16	11.31	1295.61	300
	1800-90		75	100	20	40	25	35	16	16	16.97	1938.47	350
	1800-105		75	100	25	40	25	35	16	16	19.79	2259.9	350
	1800-120		75	100	25	50	30	50	16	25	22.62	2581.33	400
	1800-150		125	125	31.5	50	30	60	16	30	28.27	3224.19	400
9	2000-60		75	75	16	31.5	16	30	16	16	12.57	1438.47	300
	2000-90		75	100	25	40	25	35	16	16	18.85	2152.76	350
	2000-105		75	100	25	50	30	50	16	25	21.99	2509.9	400
	2000-120		75	125	31.5	50	30	50	16	25	25.13	2867.04	400
	2000-150		125	125	40	63	35	80	16	40	31.41	3581.33	400

Note: 1) The wire length shall be less than 150m. If wire length is more than 150m, please calculate the wire size using the formula below:
–Wire Size (mm²) = [Actual wire length/150] x [Wire size in above tabulation]
2) The table below shows the calorific values in the machine room, the amount of air to be ventilated and the size of ventilatiing fan to keep the machine room temperature between 5℃ and 40℃.

Civil Work Matters

A. Working environment of the elevators shall be as follows:

- Ambient temperature shall be between 5°C to 40°C.
- Monthly average humidity shall be between 25% ~ 90%.
- Supply voltage fluctuation shall not be more than 7%.
- Surrounding environment shall be free from explosive & corrosive hazard, anti–insulation and conductive particles atmosphere.

B. Notes on hoistway

- Hoistway walls (including layers ring beam) should be vertical, and channel wall perpendicular to the allowable deviation is:
  Hoistway height ≤ 30m : 0 ~ +25mm
  30m < Hoistway height ≤ 60m : 0 ~ +35mm
  Hoistway height > 60m : 0 ~ +50mm
- Hoistway walls shall be 200mm concrete walls.
- Elevator hoistway is preferably not located in the space above accessible area. If the actual situation can not meet the regulations, please consult Hitachi .
- If the elevator hoistway os of steel structure construction, please consult Hitachi.
- Machine room and hoistway walls, floors and roofs should be able to absorb a large number of elevator operation noise. Machine room and hoistway should not be located directly adjacent to low noise bedrooms, classrooms, wards, library spaces. Where such arrangements need to be imposed, the building contractors must be responsible for taking measures of sound insulation and cushioning.

C. Work to be Done by Building Contractors

The preparatory work for elevator installation outlined below should be undertaken by building contractors in accordance with Hitachi drawings and applicable national or local codes and regulations.

- Prepare hoistway with proper framing and enclosure, suitable pit of proper depth with drains and water–proofing if required, properly lighted and ventilated machine room of adequate size wih concrete floors, access doors, ladders and guards as required.
- Provide and/or cut all necessary holes, chases, and openings and finish after equipment installation
- Supply and secure all supports, reinforced concrete slabs, etc., necessary for installation of the machinery, doors, buffers, etc.
- Furnish all necessary cement and/or concrete for grouting–in of brackets, bolts, machine beams, etc.
- Prepare and erect suitable scaffolding and protective measures for the works in progress.
- Furnish mains for three–phase electric power and single–phase lighting supply to machine room, following the instructions of the elevator contractor on outlet position and wire size.
- Provide, free of charge, a suitable theft–proof storage area for materials and tools during erection work.
- Supply electric power for lighting of work area, installation work, elevator testing and spray painting.
- Suspension hook for loading shown in this catalogue at top of the machine room.