HITACHI
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LCA

Machine Room-less Elevator
Planning Guide

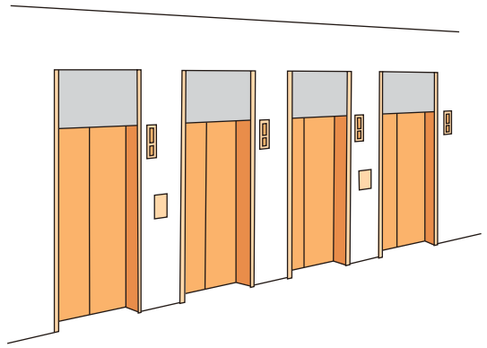
Content

Elevator Specification List

Load (kg)	No. of Passengers ①	Speed (m/min)	Maximum Number of Stops	Maximum Travel (m)	Maximum Travel with Fireman Operation (m)	Minimum Floor Height (mm)
450	6	60	8	20	—	2800
630	8	60/90/105	60m/min：22 90m/min：36 105m/min：36 120m/min：40 150m/min：40	60m/min：60 90m/min：90 105m/min：90 120m/min：120 150m/min：120	60m/min：58 90m/min：86 105m/min：90 120m/min：115 150m/min：120	
825	11	60/90/105/120/150				
900	12					
1000	13					
1050 (Deep Car)	14	60/90/105				
1150	15	60/90/105/120/150				
1350	18					
1600	21					
1800	24	60/90/105				
2000	26					

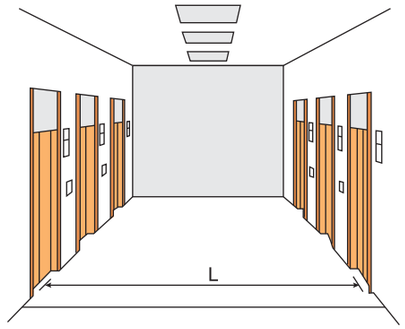
Note:
① Passenger numbers calculated at 75kg per person.
② The information above are based on GB standards.

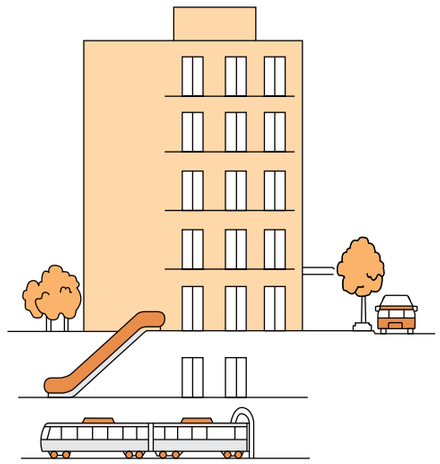
Layout



- Maximum in-line arrangement is 4 elevators.
- Elevators in different groups should not be set in the same line.
- Avoid placing the elevators entrance near pillars.

- More than 5 units in the same group, the elevators should be set face-to-face. And the distance of facing elevators (L) should be 3.5~4.5m.
- Different group elevators with face-to-face arrangement, the distance of facing elevators (L) should be more than 6m.





- Elevators in same group should have same stops.
- Elevators in same group should be set the same floor as basement and not recommend to set several entrance.

FI System

<FI-600 Features> Future Reference-Trajectory Control

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		
	Learning function		
	• Collection of usage data • Recognition of traffic flow mode (40/2 modes) • Search for optimum operation program		
	Arrival notice indication (hall lantern and chimes)		
	Bunching prevention ①		
	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
Recommended number of cars in a group	3~8 cars	3~6 cars	3~4 cars
Type of building	Large office buildings and hotels	Small office building, department stores, hotels and hospitals	Building with small traffic demand
Optional	VIP service, independent automatic operation		
	Service floor selection		
	Destination floor reservation system Centralized control for special floors Zoning express service		

Note:

① 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.

Basic Function

● : Basic spec. ▲ : Option spec. — : Not applicable

No.	Item		Content	FI-600	FI-100	FI-10
1	Instantaneous reservation and service forecasting (FI-IRF)		Upon receipt of a hall call, this function activates and 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-trajectory 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-trajectory 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.	—	●	—
4	Personalized control		Through the hall call assignment control of waiting time priority assignment, constantly carry out operation management in accordance with waiting time priority.	●	●	—
	Waiting time priority assignment		Prevent long waiting time of passengers by implementation of hall call assignment.	●	●	—
	Riding time priority assignment		Prevent long riding time of passengers by implementation of hall call assignment.	▲	▲	—
	Bunching prevention (FI-BP)		This function prevents local bunching of elevator cars 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 modes)	● (2 modes)	—
		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 elevator cars 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 operation 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 situation 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 waiting elevator cars to the pre-assigned zones.	—	●	—
		Fixed floor distribution (FI-FD)	Distributes the waiting elevator cars to the pre-assigned floors.	—	—	●

Basic Function

● : Basic spec. ▲ : Option spec. — : Not applicable

No.	Item	Content	FI-600	FI-100	FI-10
11	Learning based concentrated service (FL-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	Rush-hour schedule operation	All the elevators will automatically return to the start floor after serving the last call during this preset rush-hour timing.	●	—	▲
13	Destination floor priority control	The allocation will be priority when the destination floor and the hall call is the same floor.	●	●	—
14	Full car forecasting control	Control the new allocation according to the number of passengers in car and the times of new calls.	●	●	—
15	Full car control	Stop new allocation or re-allocate the car when full load.	●	●	—
16	Long waiting time allocation control	Re-allocate the cars when long waiting time situation is forcasted.	●	●	—
17	Notice function	Keep the service elevator car door open with hall lantern flickering to guide the passengers.	▲	●	—
18	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 Function

No.	Item	Content	FI-600	FI-100	FI-10
1	Centralized control for special floors (FI-CCF)	This function preferentially assigns an elevator to the special floor. (e.g. the director's room)	▲	—	—
2	Service floor selection (FI-SFS) [Floor lock-out operation]	Allows the operator to select the service and non-service floors using, for example, the switches on the control panel.	▲	▲	—
3	VIP service (FI-VIP)	When welcoming or sending off important guest, this function permits an elevator to be summoned directly to the desired car call floor by pushing a specially provided switch.	▲	▲	▲
4	DFRS	Each passenger registers their destination floor on the registration device located at the landing hall and know in advance the designated elevator to take. System assigned one elevator for the passengers with the same destination floor. This helps to reduce congestion in the elevator lobby and improve efficiency.	▲	—	—
5	Zoning express service (FI-EZS)	Start a divided express service when the peak traffic demand takes place in the present time zones.	▲	—	—

Man-machine Function

No.	Item	Content	FI-600	FI-100	FI-10
1	Malicious operation cancelled function	Cancel the allocation when system identifies the call is malicious.	●	●	—
2	Hall information (FI-HI)	General and elevator operation information is indicated on the LED or LCD hall indicator.	—	—	●

Standard Function

Control System			
SA1	Simplex Collective Control	SA2	Floor Height Self Measurement
SA3	On-Cage(Car Top) Maintenance Operation	SA4	In-Cage Slow Speed Operation
System Protection			
SB1	Over Speed Electrical Protection	SB2	Overspeed Mechanical Protection
SB3	Rope Slipping Running Protection	SB4	Motor Overload (Thermal) Protection
SB5	Automatic Fault Detection	SB6	Automatic Fault Recording
SB7	Standby Regular Auto-Check	SB8	Double Brake-Safety Check Operation
SB9	Synchronous Motor Magnetic Pole Static Test	SB10	Lift-Position Abnormily Auto-Correction Function
SB11	Nearest Landing Operation	SB12	Anti-electromagnetic Interference
Safe Communication			
SC1	Interphone System (5 ways) ①		
Safe Riding			
SD1	Out of Door-Open Zone Alarm	SD2	Alarm System
SD3	Door Safety Return System	SD4	Full Load Bypass Operation
SD5	Overload Detection System	SD6	Overload Alarm
SD7	Next Drive (Door Open Abnormity)	SD8	Door Opening/Closing Time Abnormity Protection
SD9	Automatic Door Dwell Time Control	SD10	Automatic Door Dwell Time Adjustment
SD11	Number of Runs Indicator	SD12	Multi-Beam Protection (Applicable for center opening door without glass panel)
SD13	Inspection Indication in Hall Indicator	SD14	Overload Indicator (In Car)
SD15	Unintented Car Movement Protection (UCMP) Function		
Emergency Solution			
SE1	Car Emergency Lighting	SE2	Fire Emergency Operation (Automatic)
SE3	Emergency Electric Operation Function (In Hall)		
Design for Comfort			
SF1	Parking Operation	SF2	Automatic Return Function
SF3	Start Torque Auto-Adjustment	SF4	Door-Stop Function (Maintenance)
SF5	Micro Levelling (Travel ≥ 30m)	SF6	Car Call Deselect Function
SF7	Mischievous Call Cancellation	SF8	Opposite Direction Car Call Cancellation
SF9	Car Light Auto Turn-off	SF10	Car Fan Auto Turn-off
SF11	Abnormal Duration Hall Call Detection (Applicable for Simplex, Duplex and FI-10 only.)	SF12	Door Bypass Detection

Note:
① 5 ways: Monitoring Room, Inspection Panel, In Car, Car Top & Pit.

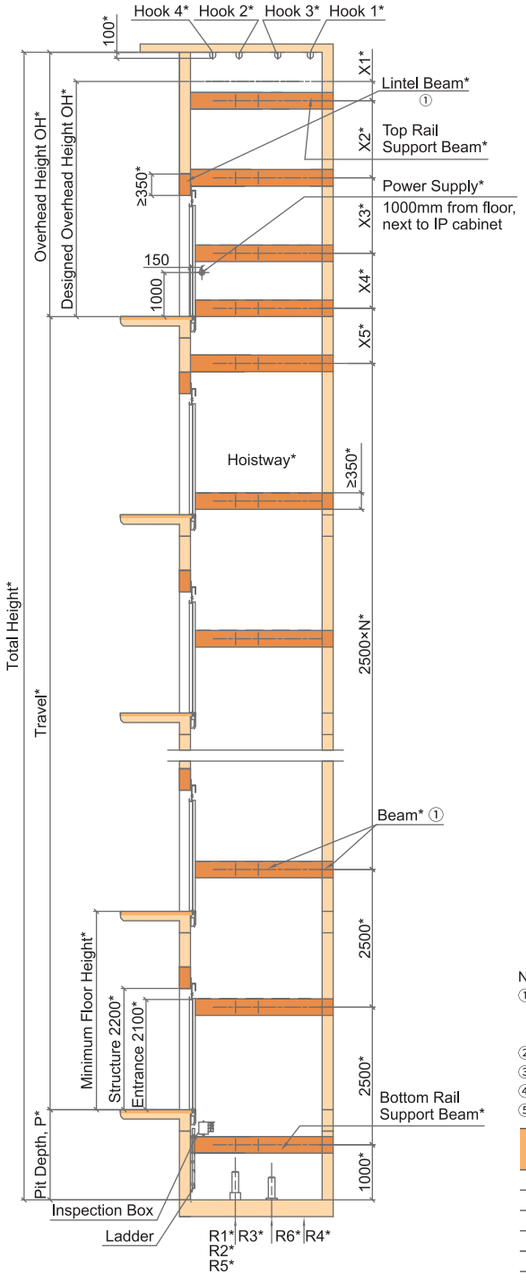
Elevator Function

Optional Function

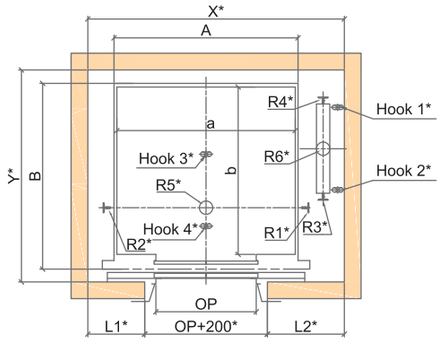
Control System			
OA1	Simplex Down Collective Control	OA2	Duplex Collective Control
OA3	Duplex Down Collective Control	OA4	FI-10 ①
OA5	FI-100 ①	OA6	FI-600 ①
OA7	Independent Automatic Operation ①	OA8	VIP Service
OA9	Rush Hour Schedule Operation ① (Not applicable for FI-100)		
Safe Communication			
OB1	Contact at Control Panel (RS485)	OB2	Elevator Monitoring System (Computer Type)
OB3	Supervisory Panel (Dry Contact Type)	OB4	Twisted Pair Cable (1 pair) for CCTV
OB5	Twisted Pair Cable (1 pair) for BGM	OB6	Contact at Control Panel (Dry Contact)
OB7	Camera Device Inside the Car		
Safe Riding			
OC1	Multi-Beam + Safety Edge Protection	OC2	Card Reader Interface (In Car) (RS485) ① (Not applicable when OE5 is selected.)
EmergencySolution			
OD1	Fireman Operation (Load≥825kg)	OD2	Automatic Rescue Device (ARD) ① (Maximum travel distance ≤ 30m)
OD3	EM. Operation for Power Failure (Manual)	OD4	EM. Operation for Power Failure (Auto)
OD5	Earthquake Emergency Operation	OD6	Pit Flood Operation
OD7	Mechanical Manual Release Device ① ②		
Design for Comfort			
OE1	Attendant Operation	OE2	Independent Operation
OE3	Voice Synthesizer	OE4	Arrival Chime (Car Top and Bottom)
OE5	Floor Lock Out Operation ① (Not applicable when OC2 is selected.)	OE6	Door Opening Prolong Button
OE7	Hall Call Registration in Car Operating Panel (Applicable when OE1 is selected)	OE8	Car Floor Button Flashing
OE9	Sub Car Operating Panel	OE10	Double Opening Function ① (Not applicable for FI-100, FI-600 and FI-10 (>32 stops))
OE11	Horizontal Car Operating Panel	OE12	Braille Button
OE13	Regenerative System Function ①	OE14	EMC ① (Only applicable together with OE13)
OE15	Micro Levelling (Travel＜30m)	OE16	Advance Door Opening
OE17	Operation Status Indication at Hall Indicator	OE18	Hall Call Deselect Function (Applicable for Simplex, Duplex and FI-10 only)
OE19	Overloading Hall Call Recovery Function		

Note:
① Details, please contact us.
② Applicable for load ≤1600kg and speed ≤105m/min. Increase in overhead height of 350mm is required.

Hoistway Section



Hoistway Plan
(Counterweight Location: Right)

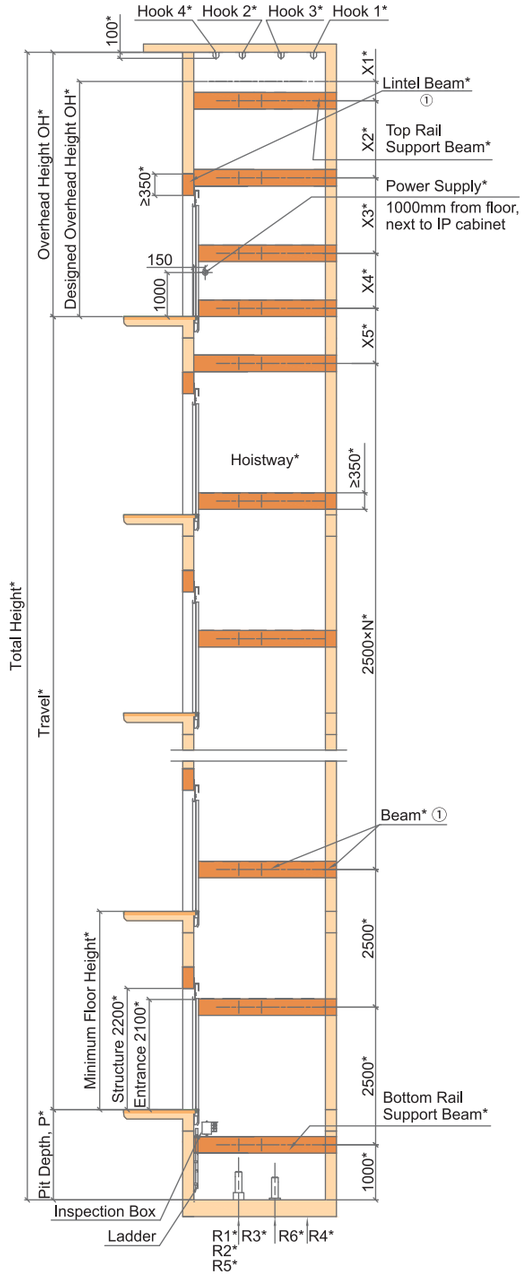


Note:
① The hoistway construction shall be reinforced concrete ring beam with strength C25 or whole hoistway of reinforced concrete wall. If you have other situations, please contact us.
② Items with "*"shall be furnished by building contractors.
③ For hoistway details, please contact us.
④ Unit of dimension shall be in mm unless otherwise stated.
⑤ The suspension hooks capacity shall be as follows:

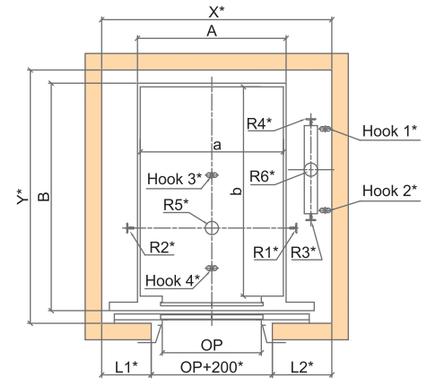
Load (kg)	Speed (m/min)	Hook 1 (Tons)	Hook 2 (Tons)	Hook 3 (Tons)	Hook 4 (Tons)
450	60	2	2	3	3
630/825/900/1000	60/90/105	2	2	3	3
825/900/1000	120/150	2	2	4	4
1150/1350/1600	60/90/105/120/150	2	2	4	4
1800/2000	60/90/105	2	2	4	4

Hoistway

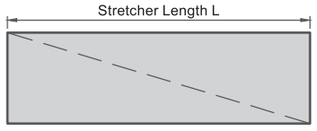
Hoistway Section



Hoistway Plan
(Counterweight Location: Right)



Maximum Allowable Stretcher Size (Deep Car):



Car Internal Size (a×b) (mm)	Maximum Stretcher Length (mm)	Lift Landing Depth (mm)
1100×2100	2100	≥2100
1300×1900	1900	≥1900

Note:
① The hoistway construction shall be reinforced concrete ring beam with strength C25 or whole hoistway of reinforced concrete wall. If you have other situations, please contact us.
② Items with "*"shall be furnished by building contractors.
③ For hoistway details, please contact us.
④ Unit of dimension shall be in mm unless otherwise stated.
⑤ The suspension hooks capacity shall be as follows:

Load (kg)	Speed (m/min)	Hook 1 (Tons)	Hook 2 (Tons)	Hook 3 (Tons)	Hook 4 (Tons)
1050	60/90/105	2	2	3	3

Hoistway

Load (kg)	Speed (m/min)	Car Size (mm)		Door Opening (mm)		Front Wall Arrangement (mm)		Hoistway (mm)	Reaction Loading (KN)					
		Internal (a×b)	External (A×B)	Type	Width	L1	L2	X×Y	R1	R2	R3	R4	R5	R6
450	60	1000×1300	1050×1465	2P-CO	700	325	425	1700×1700	40	30	30	25	100	90
630	60/90/105	1100×1400	1150×1565	2P-CO	800	445	405	1850×1800	60	45	40	35	110	100
825	60/90/105	1350×1400	1400×1565	2P-CO	800	415	585	2000×1800	65	50	45	35	120	105
		1250×1500	1300×1665			415	535	1950×1900						
		1300×1500	1350×1665			390	560	1950×1900						
		1200×1600	1250×1765			390	510	1900×2000						
	120/150	1350×1400	1400×1565			470	730	2200×2000	85	70	65	55	120	100
900	60/90/105	1500×1400	1550×1565	2P-CO	900	440	610	2150×1800	70	55	45	40	130	110
	120/150	1500×1400	1550×1565			495	755	2350×2000	90	75	65	55	125	110
1000	60/90/105	1600×1400	1650×1565	2P-CO	900	490	660	2250×1800	75	60	50	40	135	115
		1600×1500	1650×1665			490	660	2250×1900						
		1500×1500	1550×1665			440	610	2150×1900						
		1400×1600	1450×1765			440	560	2100×2000						
		1500×1600	1550×1765			440	610	2150×2000						
	120/150	1600×1400	1650×1565	2P-CO	900	545	805	2450×2000	95	75	70	55	140	115
		1600×1500	1650×1665											
1050 (Deep Car)	60/90/105	1100×2100	1150×2265	2P-CO	900	430	430	1960×2500	75	60	50	40	135	115
		1300×1900	1350×2065			440	510	2050×2300						
		1100×2100	1150×2303	2S-2P		145	505	1750×2550						
		1300×1900	1350×2103			145	705	1950×2350						
1150	60/90/105	1800×1500	1850×1665	2P-CO	1000	580	770	2550×1950	90	70	60	50	155	130
	120/150					595	905	2700×2050	105	85	75	65	160	140
1350	60/90/105	2000×1500	2050×1665	2P-CO	1100	630	820	2750×1950	95	75	60	55	170	140
	120/150					645	955	2900×2050	115	95	80	70	180	155
1600	60/90/105	2000×1700	2050×1865	2P-CO	1100	630	820	2750×2100	100	80	65	55	170	150
	120/150					645	955	2900×2150	120	100	85	70	200	165
1800	60/90/105	2000×1850	2050×2015	2P-CO	1100	630	870	2800×2250	105	85	70	65	195	160
2000	60/90/105	2000×2000	2050×2165	2P-CO	1100	630	870	2800×2400	115	95	75	65	215	175

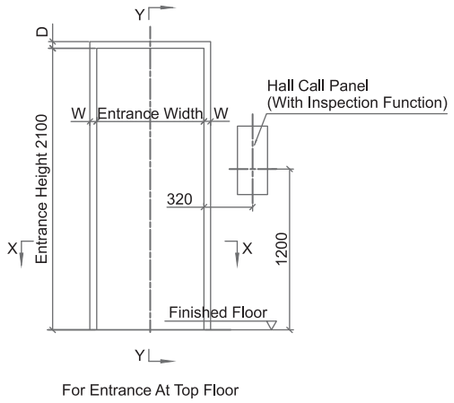
Note:
① The above information and dimensions are based on GB standards.
② The above information and dimensions are based on right side counterweight.
③ Configuration is without counterweight safety gear.
④ For load 450kg, layout is based on 50mm door offset configuration.
⑤ For load 630kg, layout is based on 50mm (Number of Stops ≤ 24) or 125mm (24 < Number of Stops ≤ 36) door offset configuration.

Overhead Height and Pit Depth

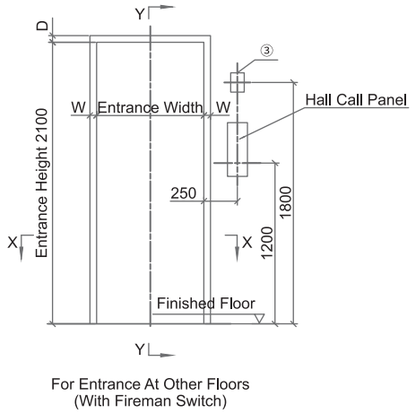
Load (kg)	Speed (m/min)	Overhead Height OH (mm)	Pit Depth P (mm)
450	60	3750	1350
630	60	3750	1350
	90	3900	1400
	105	3950	1450
825	60	3750	1350
	90	3900	1400
	105	3950	1450
	120	4200	1900
	150	4500	2100
900	60	3750	1350
	90	3900	1400
	105	3950	1450
	120	4200	2000
	150	4500	2100
1000	60	3750	1600
	90	3900	1600
	105	3950	1600
	120	4200	2100
	150	4500	2150
1050 (Deep Car)	60	3750	1600
	90	3900	1600
	105	3950	1600
1150	60	3750	1500
	90	3950	1600
	105	3950	1600
	120	4200	2200
	150	4500	2400
1350	60	3750	1500
	90	3950	1600
	105	3950	1600
	120	4200	2300
	150	4500	2400
1600	60	3750	1500
	90	3950	1650
	105	3950	1650
	120	4200	2350
	150	4500	2450
1800	60	3750	1550
	90	3950	1850
	105	3950	1850
2000	60	3750	1550
	90	3950	1850
	105	3950	1850

Note:
① The above information and dimensions are based on GB standards.
② Configuration is without counterweight safety gear.
③ The overhead height, OH is based on bare ceiling height of 2300mm.
④ The pit depth, P is based on standard vinyl tile finish without floor recess.
⑤ Configuration is based on the following decoration weight provision:
For load 450kg, decoration weight provision shall be up to 200kg.
For load 630 / 825kg, decoration weight provision shall be up to 250kg.
For load 900~1050kg, decoration weight provision shall be up to 300kg.
For load 1150~2000kg, decoration weight provision shall be up to 400kg.

Elevation of Entrance

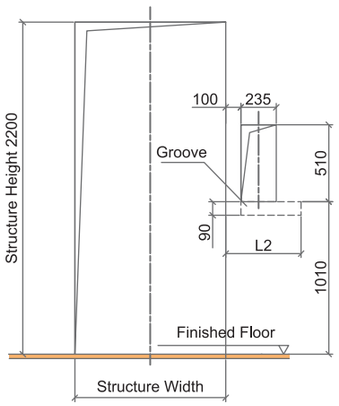


For Entrance At Top Floor

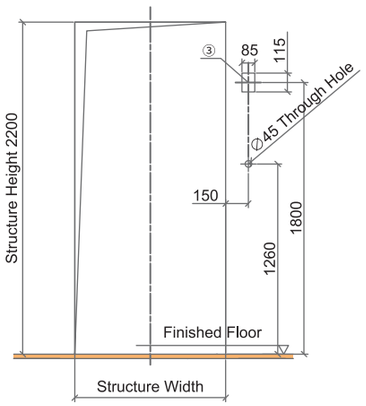


For Entrance At Other Floors
(With Fireman Switch)

Structure Opening of Entrance



For Entrance At Top Floor



For Entrance At Other Floors
(With Fireman Switch)

Type	AS-1X	SS-1X
W	10	25
D	10	25

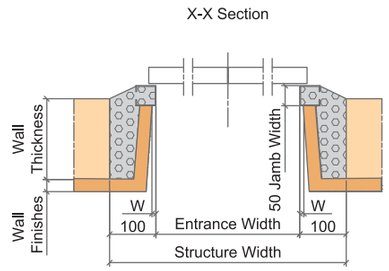
Note:
① Structural opening of entrance shall be furnished by building contractor.
② Unit of dimension shall be in mm unless otherwise stated.
③ Applicable only when fireman operation function with fireman switch is located at lift landing.

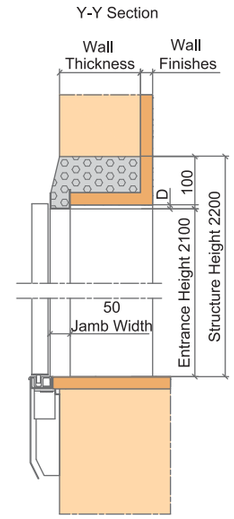
Entrance Design

The followings shall be furnished by building contractors:

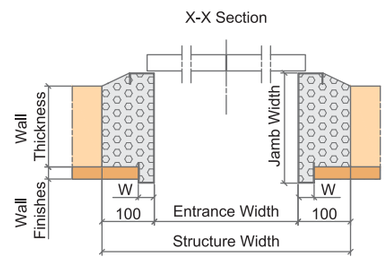
- Building Structure
- Wall and Floor Finishes
- Grouting Work

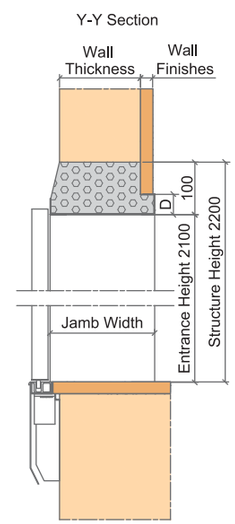
Narrow Jamb (AS-1X)





Wide Jamb (SS-1X)

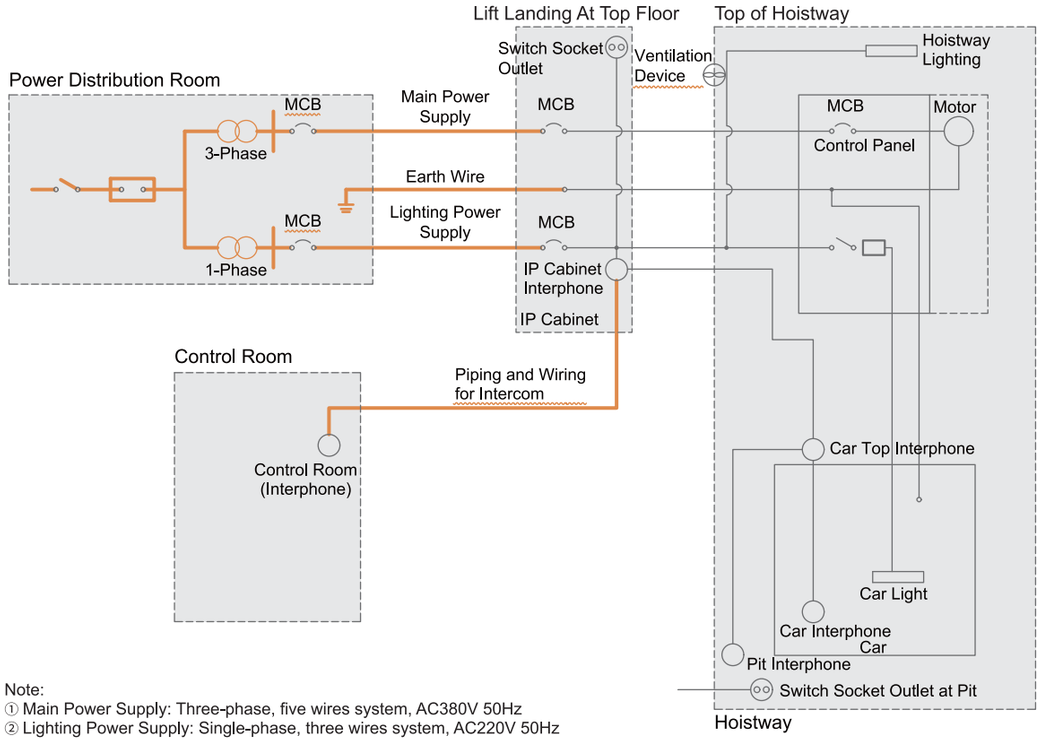




Electrical Information

The followings shall be furnished by building contractors:

- Electrical Equipment
- Cable



Note:
① Main Power Supply: Three-phase, five wires system, AC380V 50Hz
② Lighting Power Supply: Single-phase, three wires system, AC220V 50Hz

Item	Works to be provided by building contractor
Main Power Supply	To provide power supply switch around the entrance of top floor. To install facilities to ensure that power supply voltage fluctuation shall be within ±7%.
Lighting Power Supply	To provide lighting power supply for car lighting, fan and indicator.
Ventilation Device	To provide mechanical ventilation to the hoistway to ensure that the temperature in the hoistway is maintained at below 40˚C.
Pit light, Switch Socket Outlet	To provide single phase AC 220V, 10A switch socket outlet and pit lighting with switch below the entrance floor level for maintenance purposes.

Electrical Data

No.	Load (kg)	Speed (m/min)	Voltage	Circuit Breaker Capacity (A)		Transformer Capacity (kVA)		Main Power Wire Size (mm²)		Earth Wire Size (mm²)	
				1 unit	2 units	1 unit	2 units	1 unit	2 units	1 unit	2 units
1	450	60		20	32	4	6	6	8	6	8
2	630	60		20	32	5	8	6	8	6	8
		90		20	40	7	10	6	10	6	10
		105		32	40	8	12	6	10	6	10
3	825	60		20	40	6	9	6	8	6	8
		90		32	40	8	13	8	16	8	16
		105		40	50	10	14	8	16	8	16
		120		40	50	11	16	10	25	10	16
		150		40	63	13	20	16	30	16	16
4	900	60		20	40	7	10	6	8	6	8
		90		32	50	9	14	8	16	8	16
		105		40	50	10	16	8	16	8	16
		120		40	63	11	17	16	25	16	16
		150		40	80	14	21	16	30	16	16
5	1000	60		20	40	7	11	6	10	6	10
		90		40	50	10	16	8	16	8	16
		105		40	63	12	18	10	25	10	16
		120		40	63	13	20	16	25	16	16
		150		50	80	16	24	16	30	16	16
6	1050	60		20	40	7	11	6	10	6	10
		90	3Φ380V	40	50	10	16	8	16	8	16
		105	1Φ220V	40	63	12	18	10	25	10	16
7	1150	60	50Hz	32	40	8	12	6	10	6	10
		90		40	63	11	17	10	25	10	16
		105		40	63	13	19	16	25	16	16
		120		40	80	14	22	25	30	16	16
		150		50	100	17	26	25	35	16	16
8	1350	60		32	50	9	14	8	16	8	16
		90		40	63	13	19	16	25	16	16
		105		50	80	14	22	16	30	16	16
		120		50	80	16	25	25	35	16	16
		150		63	125	20	30	30	50	16	25
9	1600	60		40	50	10	16	8	16	8	16
		90		50	80	15	22	16	30	16	16
		105		50	100	17	26	25	30	16	16
		120		63	100	19	29	25	35	16	16
		150		80	125	23	36	30	50	16	25
10	1800	60		40	63	11	17	10	25	10	16
		90		50	80	16	25	16	30	16	16
		105		63	100	19	29	25	30	16	16
11	2000	60		40	63	13	19	10	25	10	16
		90		63	100	18	27	25	30	16	16
		105		63	125	21	32	25	35	16	16

Note:
① The main power wire size specified above is applicable for wire length less than 150m.
For main power wire length more than 150m, please calculate using the following formula:
Main power wire size (mm²) = [Actual wire length / 150] × [Wire size in above table]

Civil Works Matters

Working environment of the elevator shall be as follow

1. Ambient temperature shall be between 5ºC to 40ºC.
2. Maximum relative humidity is 90%, and the monthly mean minimum temperature should be below 25ºC.
3. Supply voltage fluctuation shall be within ±7ºC.
4. Surrounding environment shall be free from explosive & corrosive hazard, anti-insulation and conductive particles atmosphere.

About hoistway

1. Hoistway walls (including reinforced concrete ring beams) should be vertical, and the allowable deviation for the hoistway verticality is:
   Total Height ≤ 30m:0~+25mm.
   30m＜Total Height ≤ 60m:0~+35mm
   Total Height＞60m:0~+50mm
2. Hoistway walls shall be 200mm concrete walls.
3. Elevator hoistway is preferably not located in the space above accessible area. If the actual situation cannot meet the regulations, please contact us.
4. If elevator hoistway is of steel structure construction, please contact us.
5. Hoistway walls, floors and roofs should be able to absorb a large number of elevator operation noise.
6. Hoistway should not be located directly adjacent to bedrooms, classrooms, wards, library or any other places where low noise is required. Where such arrangements need to be imposed, the building contractors must be responsible for taking measures of sound insulation and cushioning.

Work to be done by Building Contractors

1. The preparatory work for elevator installation outlined below should be undertaken by building contractors in accordance with Hitachi drawing and applicable national or local codes and regulation.
2. Prepare hoistway with proper framing and enclosure, suitable pit of proper depth with drains and water-proofing if required, properly lighted with concrete floor, access door, ladder and guards as required.
3. Provide and/or cut all necessary holes, chases, and openings and finish after equipment installation.
4. Supply and secure all supports, reinforced concrete slabs, etc., necessary for installation of the machinery, doors, buffers, etc.
5. Furnish all necessary cement and/or concrete for grouting-in of brackets, bolts, machine beams etc.
6. Prepare and erect suitable scaffolding and protective measures for the works in progress.
7. Furnish main for three-phase electric power and single-phase lighting supply to hoistway, following the instructions of the elevator contractors on outlet position and wire size.
8. Provide, free of charge, a suitable theft-proof storage area for materials and tools during erection work.
9. Supply electric power for lighting of work area, installation work, elevator testing and spray painting.
10. Suspension hooks at top of the hoistway with required loading as shown in this catalogue.

Note