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MCA

Machine Room Elevator
Planning Guide

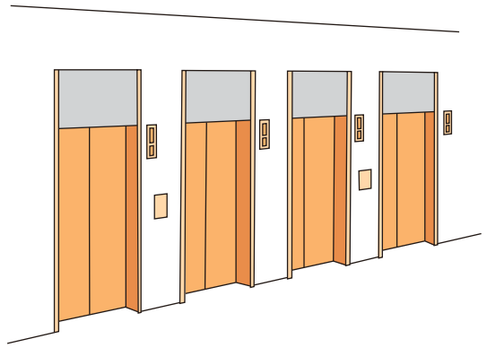
Content

Elevator Specification List

Load (kg)	No. of Passengers①	Speed (m/min)	Maximum Number of Stops	Maximum Travel (m)	Maximum Travel with Fireman Operation (m)	Minimum Floor Height (mm)
450	6	60/90/105	60m/min:22 90m/min:24 105m/min:24	60	—	2800
630	8	60/90/105	60m/min:22 90m/min:40 105m/min:40 120m/min:48 150m/min:48 180m/min:48	60m/min:60 90m/min:100 105m/min:100 120m/min:140 150m/min:140 180m/min:150	—	
825	11	60/90/105/120/150/180			60m/min:58 90m/min:86 105m/min:99.5 120m/min:115 150m/min:140 180m/min:150	
900	12	60/90/105/120/150/180				
1050	14	60/90/105/120/150/180				
1150	15	60/90/105/120/150/180				
1350	18	60/90/105/120/150/180				
1600	21	60/90/105/120/150/180				
1800	24	60/90/105/120/150				
2000	26	60/90/105/120/150				

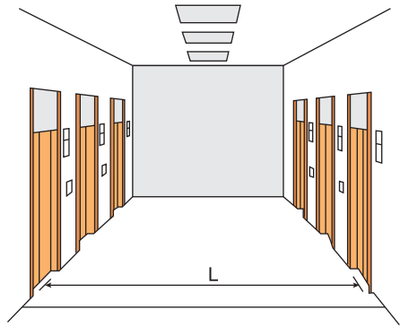
Note:
① Passenger numbers calculated at 75kg per person.
② The information above are based on GB standards.

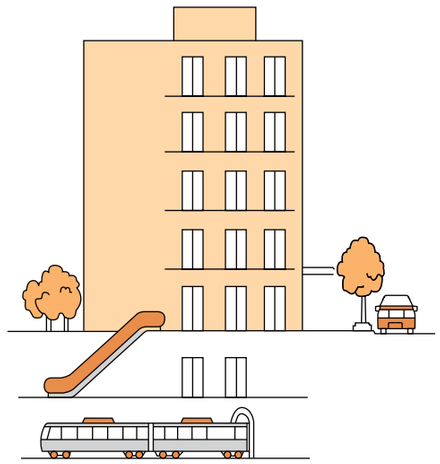
Layout



- 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
SA5	Machine Room Debugging 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)		
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 ① (Applicable for center opening door without glass panel)
SD13	Inspection Indication in Hall Indicator	SD14	Current Floor Push-button Reopening Function
SD15	Overload Indicator (In Car)		
Emergency Solution			
SE1	Car Emergency Lighting	SE2	Fire Emergency Operation (Automatic)
Design for Comfort			
SF1	Parking Operation	SF2	Automatic Return Function
SF3	Start Torque Auto-Adjustment	SF4	Door-Stop Function (Maintenance)
SF5	Micro Levelling (Travel≥45m)	SF6	Advance Door Opening (Speed ≥120m/min)
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	Car Floor Button Flashing ①
SF13	Car Call Deselect Function	SF14	Step-less Speed Control
SF15	Regenerative System Function (For load ≥ 1150kg with speed 180/min)	SF16	Door Bypass Detection
SF17	Overloading Hall Call Recovery Function (Applicable for Simplex, Duplex and FI-10 only)		

Note:
① Details, please contact us.

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 Interface	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.)
Emergency Solution			
OD1	Fireman Operation (Load≥825kg)	OD2	Automatic Rescue Device (ARD) (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
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	Sub Car Operating Panel
OE9	Double Opening Function (Not applicable for FI-100 and FI-600)	OE10	Horizontal Car Operating Panel
OE11	Braille Button	OE12	Regenerative System Function ①
OE13	EMC ① (Only applicable together with OE12)	OE14	Micro Levelling (Travel<45m)
OE15	Operation Status Indication at Hall Indicator	OE16	DFRS (Under FI-600)
OE17	Hall Call Deselect Function (Applicable for Simplex, Duplex and FI-10 only)	OE18	Advance Door Opening

Note:
① Details, please contact us.

Overhead Height and Pit Depth

Load (kg)	Speed (m/min)	Overhead Height OH (mm)	Pit Depth P (mm)
450	60	4550	1450
	90	4700	
	105	4750	1500
630	60	4350	1450
	90	4450	
	105	4550	1500
825	60	4350	1450
	90	4450	
	105	4550	1500
	120	4700	1600
	150	5100	1900
900	60	4350	1450
	90	4450	
	105	4550	1500
	120	4700	1600
	150	5100	1900
1050	60	4350	1450
	90	4450	
	105	4550	1500
	120	4700	1600
	150	5100	1900

Note:
1) The above information and dimensions are based on GB standards.
2) The overhead height, OH is based on bare ceiling height of 2450mm.
3) The pit depth, P is based on standard vinyl tile finish without floor recess.
4) Configuration is without counterweight safety gear.
5) Configuration is based on decoration weight provision of up to 100kg.

Load (kg)	Speed (m/min)	Overhead Height OH (mm)				Pit Depth P (mm)			
		Counterweight Location:Rear		Counterweight Location:Side		Counterweight Location:Rear		Counterweight Location:Side	
		Travel ≤ 70m	Travel > 70m	Travel ≤ 70m	Travel > 70m	Travel ≤ 70m	Travel > 70m	Travel ≤ 70m	Travel > 70m
1150	60	4700	–	4700	–	1450	–	1450	–
	90	4650	4650	4650	4650	1550	1600	1550	1600
	105	4800	4800	4800	4800	1550	1600	1550	1600
	120	4850	4850	4850	4850	1600	1650	1600	1650
	150	5100	5100	5100	5100	1900	1900	1900	1900
1350	60	4700	–	4700	–	1450	–	1450	–
	90	4650	4650	4650	4700	1550	1600	1550	1600
	105	4800	4800	4800	4850	1550	1600	1550	1600
	120	4850	4850	4900	4900	1600	1650	1650	1650
	150	5100	5100	5100	5100	1900	1900	1900	1900
1600	60	4700	–	4700	–	1450	–	1450	–
	90	4650	4650	4650	4700	1550	1600	1550	1600
	105	4800	4800	4800	4850	1550	1600	1550	1600
	120	4850	4850	4900	4900	1600	1650	1650	1650
	150	5100	5100	5100	5100	1900	1900	1900	1900

Note:
1) The above information and dimensions are based on GB standards.
2) The overhead height, OH is based on bare ceiling height of 2450mm.
3) The pit depth, P is based on standard vinyl tile finish without floor recess.
4) Configuration is without counterweight safety gear.
5) Configuration is based on decoration weight provision of up to 500kg (For load 1150kg / 1350kg) and 350kg (For load 1600kg).

Overhead Height and Pit Depth

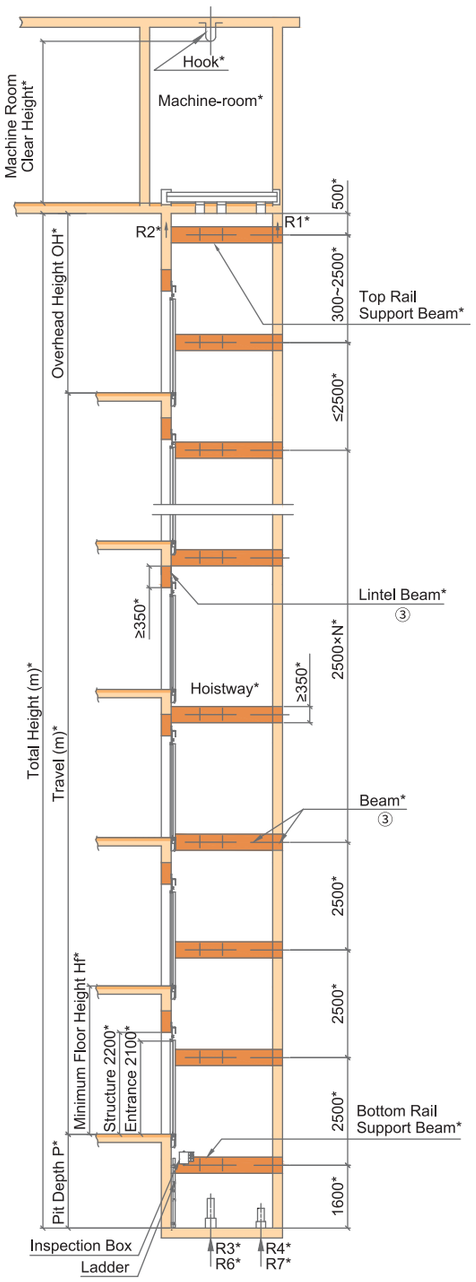
Load (kg)	Speed (m/min)	Overhead Height OH (mm)		Pit Depth P (mm)
		Counterweight Location:Rear	Counterweight Location:Side	
1800	60	4550	4600	1500
	90	4550	5050	1500
	105	4700	5250	1600
	120	4800	5300	1650
	150	4900	5400	1950
2000	60	4550	4600	1500
	90	4550	5050	1500
	105	4700	5250	1600
	120	4800	5300	1650
	150	4900	5400	1950

Note:
1) The above information and dimensions are based on GB standards.
2) The overhead height, OH is based on bare ceiling height of 2450mm.
3) The pit depth, P is based on standard vinyl tile finish without floor recess.
4) Configuration is without counterweight safety gear.
5) Configuration is based on decoration weight provision of up to 500kg.

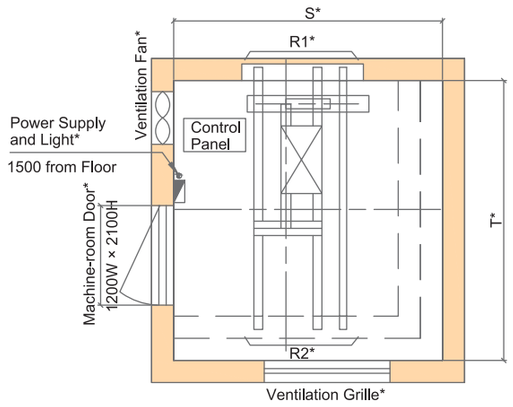
Load (kg)	Speed (m/min)	Overhead Height OH (mm)	Pit Depth P (mm)
825	180	5450	2400
900			
1050			
1150			
1350			
1600			

Note:
1) The above information and dimensions are based on GB standards.
2) The overhead height, OH is based on bare ceiling height of 2450mm.
3) The pit depth, P is based on standard vinyl tile finish without floor recess.
4) Configuration is without counterweight safety gear.
5) Configuration is based on decoration weight provision of up to 500kg (For load ≤ 1150kg) and 250kg (For load 1350kg / 1600kg).

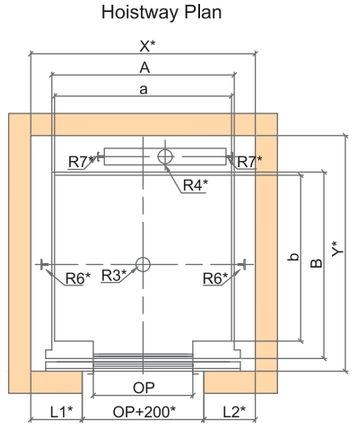
Hoistway Section



Machine-room Plan



Hoistway Plan



Note:
① Items with "*" shall be furnished by building contractors.
② Hoistway shall not be located next to bedrooms, classroom, ward, library or any other places where low noise is required.
③ 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.
④ For hoistway and machine room details, please contact us.
⑤ Unit of dimension shall be in mm unless otherwise stated.

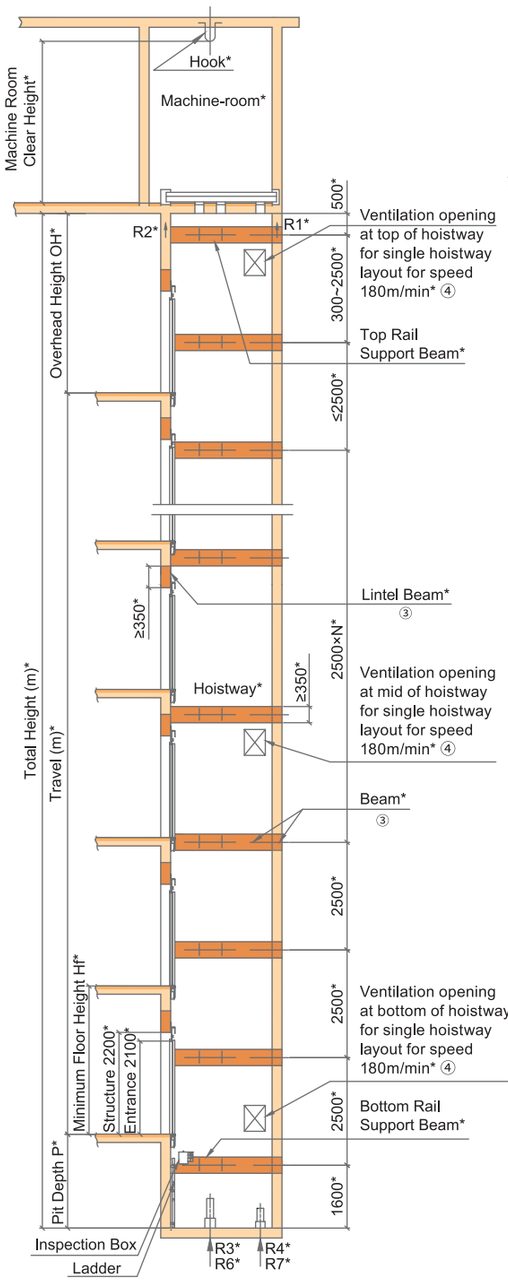
Load (kg)	Speed (m/min)	Machine-room Clear Height (mm)	Hook Capacity (Tons)
450/630/825/900/1050	60/90/105	2100	3
825/900/1050	120/150	2450	4

Hoistway and Machine Room

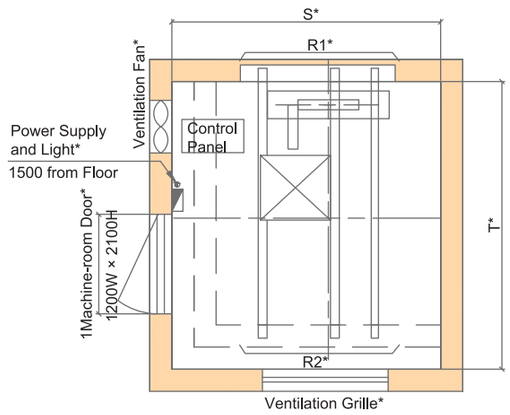
Load (kg)	Speed (m/min)	Car Size (mm)		Door Opening (mm)		Front Wall Arrangement (mm)		Hoistway Dimension (mm)	Machine Room Size (mm)	Reaction Loading (KN)					
		Internal (a×b)	External (A×B)	Type	Width	L1	L2	X×Y	S×T	Machine Room		Pit			
										R1	R2	R3	R4	R6	R7
450	60	1200×1000	1250×1185	2P-CO	800	375	375	1750×1580	1825×1680	48.5	30	95	82	29	3
	90									51	31.5	101	88	34	5
	105														
630	60	1400×1100	1450×1285	2P-CO	800	415	415	1830×1680	1830×1680	48.5	30	95	82	29	3
	90									51	31.5	101	88	34	5
	105														
825	60	1400×1350	1450×1535	2P-CO	800	415	415	1830×1930	1830×1930	58	34.5	113	95	37	3
	90									61	36	120	103	44	5
	105														
	120					425	425	1850×1950	1850×1950	73.2	47	153	132	55	7
	150									78	48	160	148	57	7
	60	1400×1300	1450×1485	2P-CO	800	415	415	1830×1880	1830×1880	58	34.5	113	95	37	3
	90									61	36	120	103	44	5
	105														
	120					425	425	1850×1900	1850×1900	73.2	47	153	132	55	7
	150									78	48	160	148	57	7
	60	1300×1400	1350×1585	2P-CO	800	415	415	1830×1980	1830×1980	58	34.5	113	95	37	3
	90									61	36	120	103	44	5
	105														
	120					425	425	1850×2000	1850×2000	73.2	47	153	132	55	7
	150									78	48	160	148	57	7
900	60	1600×1350	1650×1535	2P-CO	900	465	465	2030×1930	2030×1930	63	37	122	103	40	3
	90									67	39	131	112	48	5
	105														
	120					475	475	2050×1950	2050×1950	74.5	48	158	136	58	7
	150									82	50	165	160	61	7
1050	60	1600×1500	1650×1685	2P-CO	900	465	465	2030×2080	2030×2080	66	40	135	113	42	3
	90									69.5	42	145	123	50	5
	105														
	120					475	475	2050×2100	2050×2100	78	48.5	166	140	60	7
	150									89	55	175	168	64	7
	60	1600×1400	1650×1585	2P-CO	900	465	465	2030×1980	2030×1980	66	40	135	113	42	3
	90									69.5	42	145	123	50	5
	105														
	120					475	475	2050×2000	2050×2000	78	48.5	166	140	60	7
	150									89	55	175	168	64	7
	60	1500×1500	1550×1685	2P-CO	900	430	430	1960×2080	1960×2080	66	40	135	113	42	3
	90									69.5	42	145	123	50	5
	105														
	120					450	450	2000×2100	2000×2100	78	48.5	166	140	60	7
	150									89	55	175	168	64	7
	60	1400×1600	1450×1785	2P-CO	900	430	430	1960×2180	1960×2180	66	40	135	113	42	3
	90									69.5	42	145	123	50	5
	105														
	120					450	450	2000×2200	2000×2200	78	48.5	166	140	60	7
	150									89	55	175	168	64	7
	60	1500×1600	1550×1785	2P-CO	900	430	430	1960×2180	1960×2180	66	40	135	113	42	3
	90									69.5	42	145	123	50	5
	105														
	120					450	450	2000×2200	2000×2200	78	48.5	166	140	60	7
	150									89	55	175	168	64	7

Note:
1) The above information and dimensions are based on GB standards.
2) Configuration is without counterweight safety gear.

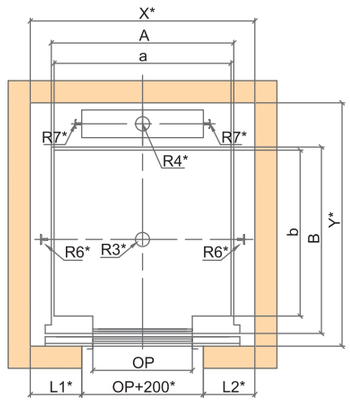
Hoistway Section



Machine-room Plan



Hoistway Plan



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④ For hoistway and machine room details, please contact us.
⑤ Unit of dimension shall be in mm unless otherwise stated.

Load (kg)	Speed (m/min)	Machine-room Clear Height (mm)	Hook Capacity (Tons)
1150/1350/1600	60/90/105/120/150	2450	4
825/900/1050/1150 1350/1600	180	2450	4

Hoistway and Machine Room

Load (kg)	Speed (m/min)	Car Size (mm)		Door Opening (mm)		Front Wall Arrangement (mm)		Hoistway Dimension (mm)	Machine Room Size (mm)	Reaction Loading (KN)					
		Internal (a×b)	External (A×B)	Type	Width	L1	L2	X×Y	S×T	Machine Room		Pit			
										R1	R2	R3	R4	R6	R7
1150	60	1800×1500	1850×1685	2P-CO	1000	550	550	2300×2200	2300×2200	82	54	165	154	51	5.5
	90									89	58	183	175	58	9
	105														
	120									92	60	192	184	68	13
	150														
1350	60	2000×1500	2050×1685	2P-CO	1100	625	625	2550×2200	2550×2200	116	91	201	171	66	11
	90									131	96	233	202	76	15
	105														
	120									136	101	243	212	91	16
	150														
1600	60	2000×1750	2050×1935	2P-CO	1100	625	625	2550×2450	2550×2450	126	96	211	181	71	11
	90									136	101	243	212	81	15
	105														
	120									141	101	263	222	96	16
	150														

Load (kg)	Speed (m/min)	Car Size (mm)		Door Opening (mm)		Front Wall Arrangement (mm)		Hoistway Dimension (mm)	Machine Room Size (mm)	Reaction Loading (KN)					
		Internal (a×b)	External (A×B)	Type	Width	L1	L2	X×Y	S×T	Machine Room		Pit			
										R1	R2	R3	R4	R6	R7
825	180	1400×1350	1450×1535	2P-CO	800	425	425	1850×2050	2250×2050	113	83	209	188	75	13
		1400×1300	1450×1485			425	425	1850×2000	2250×2000	113	83	209	188	75	13
		1300×1400	1350×1585			400	400	1800×2100	2225×2100	113	83	209	188	75	13
900		1600×1350	1650×1535	2P-CO	900	475	475	2050×2050	2350×2050	115	86	219	188	77	13
1050		1600×1500	1650×1685	2P-CO	900	475	475	2050×2200	2350×2200	119	87	220	190	78	13
		1600×1400	1650×1585			475	475	2050×2100	2350×2100	119	87	220	190	78	13
		1500×1500	1550×1685			450	450	2000×2200	2350×2200	119	87	220	190	78	13
		1400×1600	1450×1785			450	450	2000×2300	2350×2300	119	87	220	190	78	13
		1500×1600	1550×1785			450	450	2000×2300	2350×2300	119	87	220	190	78	13
1150		1800×1500	1850×1685	2P-CO	1000	550	550	2300×2200	2300×2200	133	94	228	197	82	18
1350		2000×1500	2050×1685	2P-CO	1100	625	625	2550×2200	2550×2200	136	101	246	214	93	18
1600		2000×1750	2050×1935	2P-CO	1100	625	625	2550×2450	2550×2450	141	101	263	222	96	18

Note:
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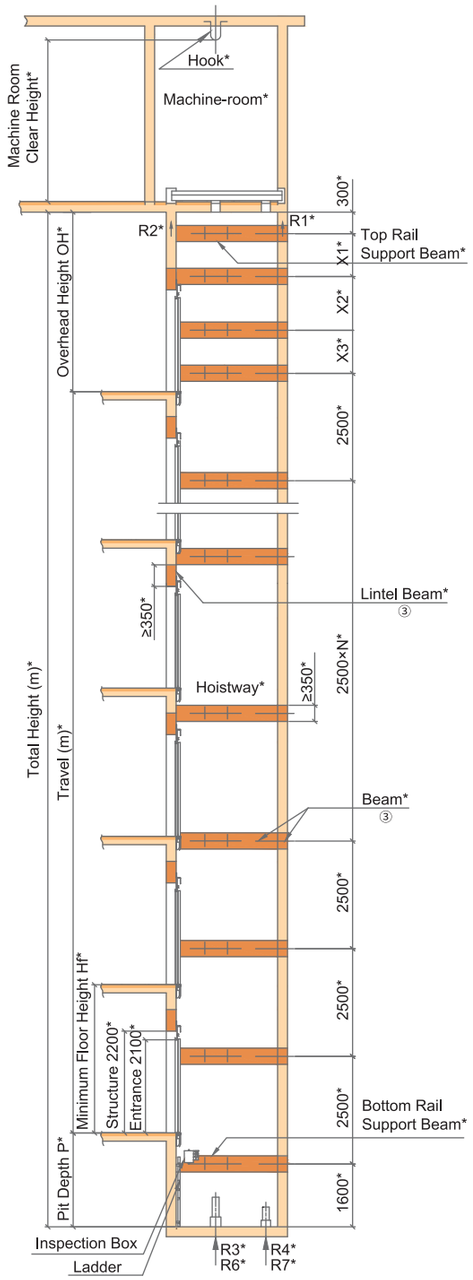
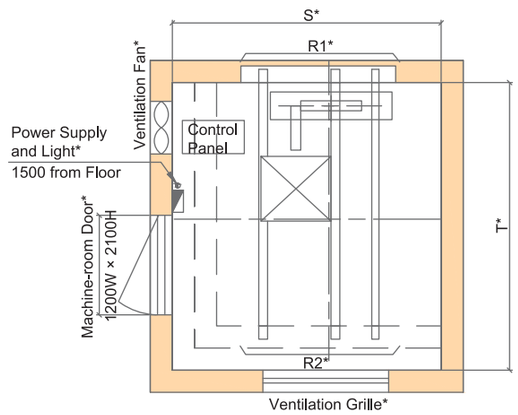
2) Configuration is without counterweight safety gear.

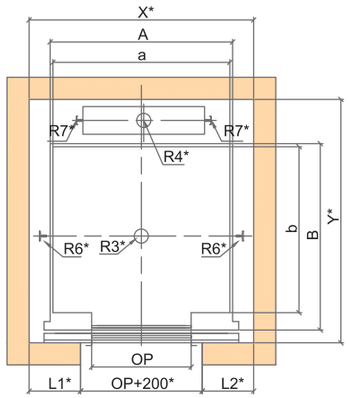
Hoistway Section



Machine-room Plan



Hoistway Plan



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⑤ Unit of dimension shall be in mm unless otherwise stated.

Load (kg)	Speed (m/min)	Machine-room Clear Height (mm)	Hook Capacity (Tons)
1800/2000	60/90/105/120/150	2500	4

Load (kg)	Speed (m/min)	Car Size (mm)		Door Opening (mm)		Front Wall Arrangement (mm)		Hoistway Dimension (mm)	Machine Room Size (mm)	Reaction Loading (KN)					
		Internal (a×b)	External (A×B)	Type	Width	L1	L2	X×Y	S×T	Machine Room		Pit			
										R1	R2	R3	R4	R6	R7
1800	60	2200×1700	2250×1885	2P-CO	1200	650	650	2700×2400	2950×2400	175	125	245	205	85	20
	90									185	125	260	220	100	25
	105														
	120									190	130	270	230	110	30
	150														
2000	60	2200×1850	2250×2035	2P-CO	1200	650	650	2700×2550	2950×2550	185	125	260	215	90	20
	90									190	130	270	225	100	25
	105														
	120									195	135	280	235	115	30
	150														

Note:
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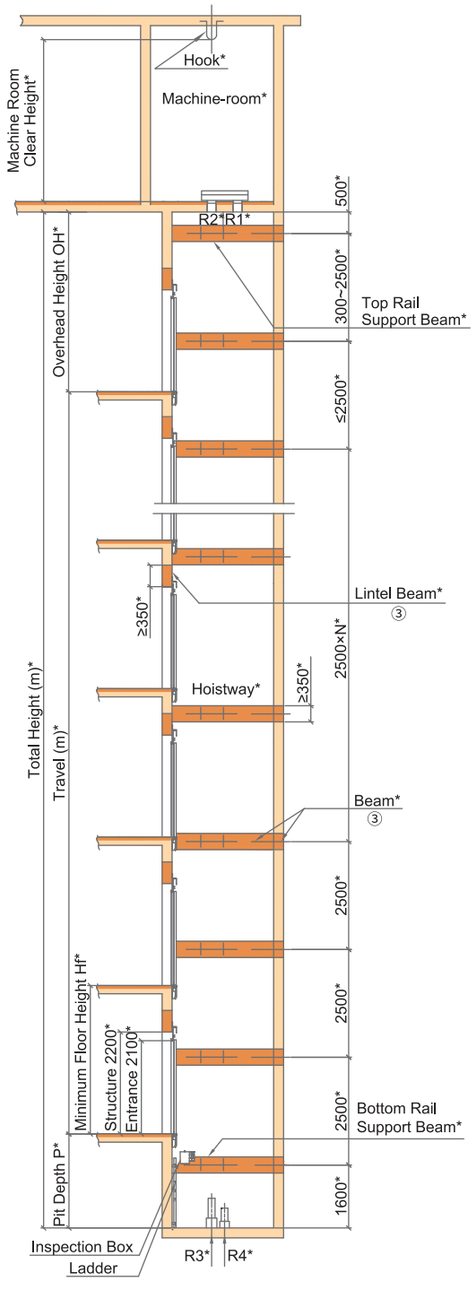
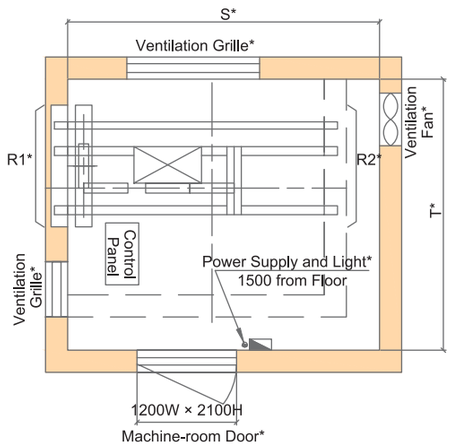
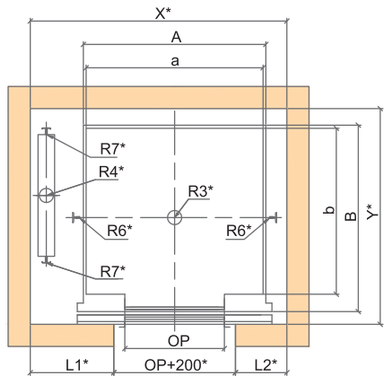
Hoistway Section



Machine-room Plan



Hoistway Plan



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⑤ Unit of dimension shall be in mm unless otherwise stated.

Load (kg)	Speed (m/min)	Machine-room Clear Height (mm)	Hook Capacity (Tons)
450/630/825/900/1050	60/90/105	2100	3
825/900/1050	120/150	2450	4

Hoistway and Machine Room

Load (kg)	Speed (m/min)	Car Size (mm)		Door Opening (mm)		Front Wall Arrangement (mm)		Hoistway Dimension (mm)	Machine Room Size (mm)	Reaction Loading (KN)					
		Internal (a×b)	External (A×B)	Type	Width	L1	L2	X×Y	S×T	Machine Room		Pit			
										R1	R2	R3	R4	R6	R7
450	60	1400×900	1450×1085	2P-CO	800	700	400	2100×1300	2150×1650	48	31	95	82	29	3
	90									50.5	32	101	88	34	5
	105														
630	60	1400×1100	1450×1285	2P-CO	800	735	415	2150×1550	2150×1750	48	31	95	82	29	3
	90									50.5	32	101	88	34	5
	105														
825	60	1400×1350	1450×1535	2P-CO	800	705	415	2120×1800	2120×1850	56.5	37	113	95	37	3
	90									59.5	38.5	120	103	44	5
	105														
	120					725	425	2150×1800	2150×1850	67	46.5	140	125	54	7
	150							2150×1850	2150×1900	75	48	150	145	58	7
	60	1400×1300	1450×1485	2P-CO	800	705	415	2120×1800	2120×1850	56.5	37	113	95	37	3
	90									59.5	38.5	120	103	44	5
	105														
	120					725	425	2150×1800	2150×1850	67	46.5	140	125	54	7
	150							2150×1850	2150×1900	75	48	150	145	58	7
	60	1300×1400	1350×1585	2P-CO	800	655	385	2040×1850	2040×1850	56.5	37	113	95	37	3
	90									59.5	38.5	120	103	44	5
	105														
	120					675	400	2075×1850	2075×1850	67	46.5	140	125	54	7
	150							2075×1900	2075×1900	75	48	150	145	58	7
900	60	1600×1350	1650×1535	2P-CO	900	755	465	2320×1800	2320×1850	61.5	39	122	103	40	3
	90									64.5	40.5	131	112	48	5
	105														
	120					775	475	2350×1800	2350×1850	72	48	155	135	58	7
	150							2350×1850	2350×1900	82	50	165	160	61	7
1050	60	1600×1500	1650×1685	2P-CO	900	755	465	2320×1950	2320×1950	67.6	40.2	135	113	42	3
	90									70.4	42.1	145	123	50	5
	105														
	120					775	475	2350×1950	2350×1950	80	50.5	165	145	60	7
	150									89	55	175	165	65	7
	60	1600×1400	1650×1585	2P-CO	900	755	465	2320×1850	2320×1850	67.6	40.2	135	113	42	3
	90									70.4	42.1	145	123	50	5
	105														
	120					775	475	2350×1850	2350×1850	80	50.5	165	145	60	7
	150							2350×1900	2350×1900	89	55	175	165	65	7
	60	1500×1500	1550×1685	2P-CO	900	705	430	2235×1950	2235×1950	67.6	40.2	135	113	42	3
	90									70.4	42.1	145	123	50	5
	105														
	120					725	450	2275×1950	2275×1950	80	50.5	165	145	60	7
	150									89	55	175	165	65	7
	60	1400×1600	1450×1785	2P-CO	900	655	430	2185×2050	2185×2050	67.6	40.2	135	113	42	3
	90									70.4	42.1	145	123	50	5
	105														
	120					675	450	2225×2050	2225×2050	80	50.5	165	145	60	7
	150									89	55	175	165	65	7
	60	1500×1600	1550×1785	2P-CO	900	705	430	2235×2050	2235×2050	67.6	40.2	135	113	42	3
	90									70.4	42.1	145	123	50	5
	105														
	120					725	450	2275×2050	2275×2050	80	50.5	165	145	60	7
	150									89	55	175	165	65	7

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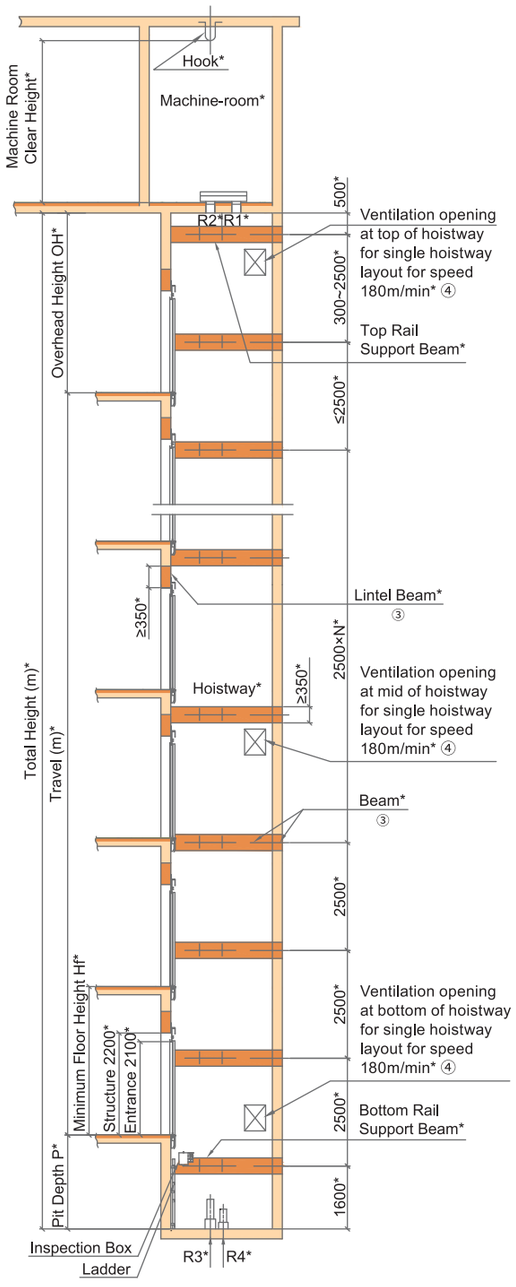
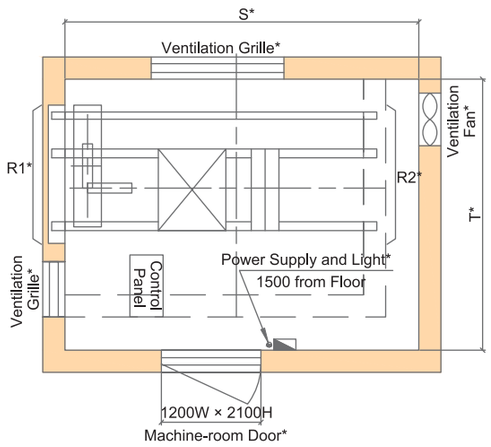
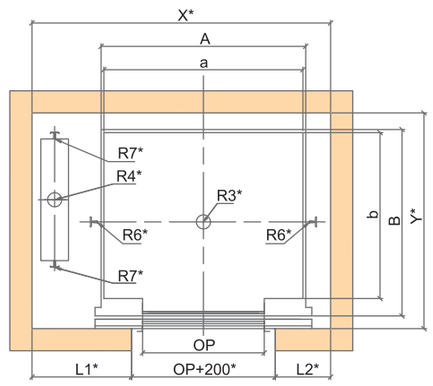
Hoistway Section



Machine-room Plan



Hoistway Plan



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Load (kg)	Speed (m/min)	Machine-room Clear Height (mm)	Hook Capacity (Tons)
1150/1350/1600	60/90/105/120/150	2450	4
825/900/1050/1150 1350/1600	180	2450	4

Hoistway and Machine Room

Load (kg)	Speed (m/min)	Car Size (mm)		Door Opening (mm)		Front Wall Arrangement (mm)		Hoistway Dimension (mm)	Machine Room Size (mm)	Reaction Loading (KN)					
		Internal (a×b)	External (A×B)	Type	Width	L1	L2	X×Y	S×T	Machine Room		Pit			
										R1	R2	R3	R4	R6	R7
1150	60	1800×1500	1850×1685	2P-CO	1000	950	550	2700×1950	2700×1950	86	49	162	150	55	5.5
	90									94	51	182	170	62	9
	105														
	120									98	55	191	182	71	13
	150														
1350	60	2000×1500	2050×1685	2P-CO	1100	1025	625	2950×1950	2950×2100	126	86	201	171	66	11
	90									136	91	233	202	76	15
	105														
	120									141	96	243	212	91	16
	150														
1600	60	2000×1750	2050×1935	2P-CO	1100	1025	625	2950×2200	2950×2250	131	91	211	181	71	11
	90									141	96	243	212	81	15
	105														
	120									145	99	263	222	96	16
	150														

Load (kg)	Speed (m/min)	Car Size (mm)		Door Opening (mm)		Front Wall Arrangement (mm)		Hoistway Dimension (mm)	Machine Room Size (mm)	Reaction Loading (KN)					
		Internal (a×b)	External (A×B)	Type	Width	L1	L2	X×Y	S×T	Machine Room		Pit			
										R1	R2	R3	R4	R6	R7
825	180	1400×1350	1450×1535	2P-CO	800	875	425	2300×1850	2300×2050	113	82	209	188	75	13
		1400×1300	1450×1485			875	425	2300×1850	2300×2050	113	82	209	188	75	13
		1300×1400	1350×1585			850	425	2275×1900	2275×2050	113	82	209	188	75	13
900		1600×1350	1650×1535	2P-CO	900	925	475	2500×1850	2500×2050	117	83	219	188	77	13
1050		1600×1500	1650×1685	2P-CO	900	925	475	2500×1950	2500×2050	123	86	220	190	78	13
		1600×1400	1650×1585			925	475	2500×1900	2500×2050	123	86	220	190	78	13
		1500×1500	1550×1685			875	475	2450×1950	2450×2050	123	86	220	190	78	13
		1400×1600	1450×1785			850	475	2425×2050	2425×2050	123	86	220	190	78	13
		1500×1600	1550×1785			875	475	2450×2050	2450×2050	123	86	220	190	78	13
1150		1800×1500	1850×1685	2P-CO	1000	950	550	2700×1950	2700×2050	135	91	228	197	82	18
1350		2000×1500	2050×1685	2P-CO	1100	1025	625	2950×1950	2950×2050	141	96	243	212	91	18
1600		2000×1750	2050×1935	2P-CO	1100	1025	625	2950×2200	2950×2250	145	99	263	222	96	18

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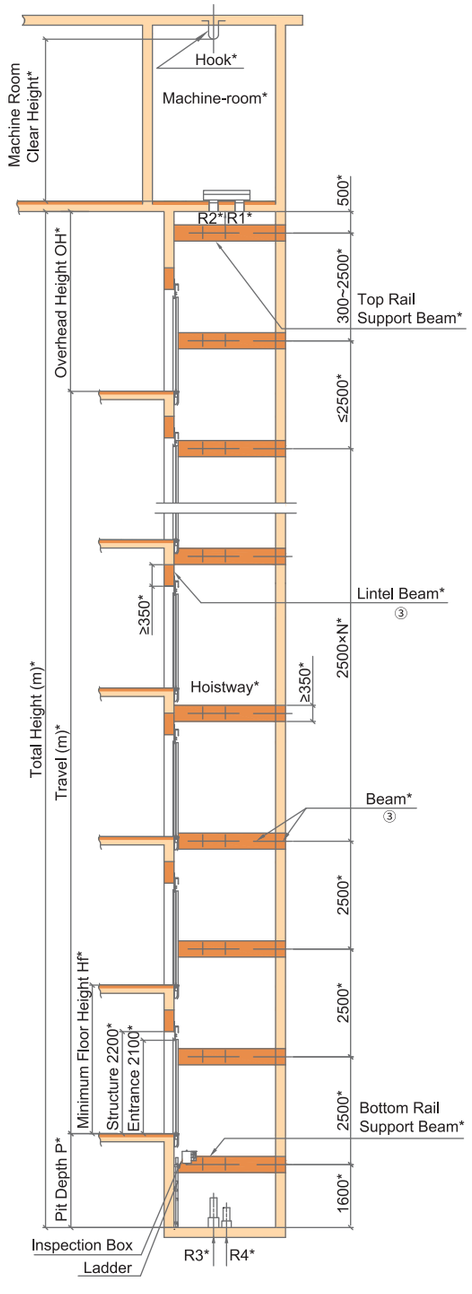
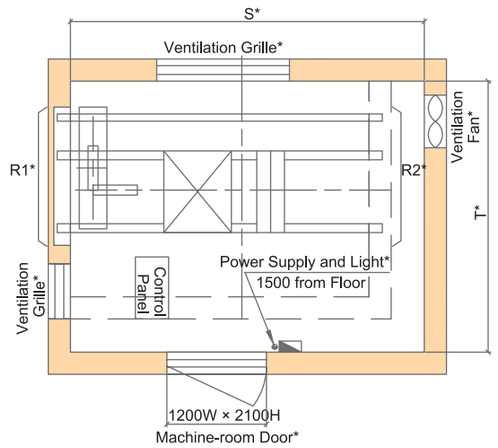
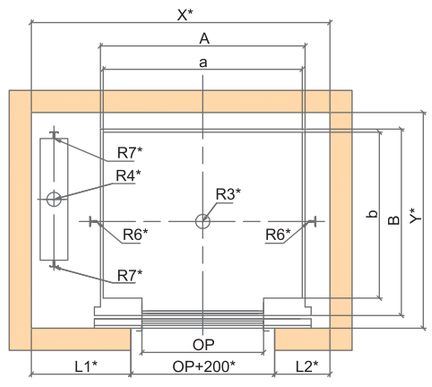
Hoistway Section



Machine-room Plan



Hoistway Plan



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⑤ Unit of dimension shall be in mm unless otherwise stated.

Load (kg)	Speed (m/min)	Machine-room Clear Height (mm)	Hook Capacity (Tons)
1800/2000	60/90/105/120/150	2500	4

Hoistway and Machine Room

Load (kg)	Speed (m/min)	Car Size (mm)		Door Opening (mm)		Front Wall Arrangement (mm)		Hoistway Dimension (mm)	Machine Room Size (mm)	Reaction Loading (KN)					
		Internal (a×b)	External (A×B)	Type	Width	L1	L2	X×Y	S×T	Machine Room		Pit			
										R1	R2	R3	R4	R6	R7
1800	60	2200×1700	2250×1885	2P-CO	1200	1075	675	3150×2150	3150×2450	175	125	245	205	85	20
	90									185	125	260	220	100	25
	105														
	120									190	130	270	230	110	30
	150														
2000	60	2200×1850	2250×2035	2P-CO	1200	1075	675	3150×2300	3150×2550	185	125	260	215	90	20
	90									190	130	270	225	100	25
	105														
	120									195	135	280	235	115	30
	150														

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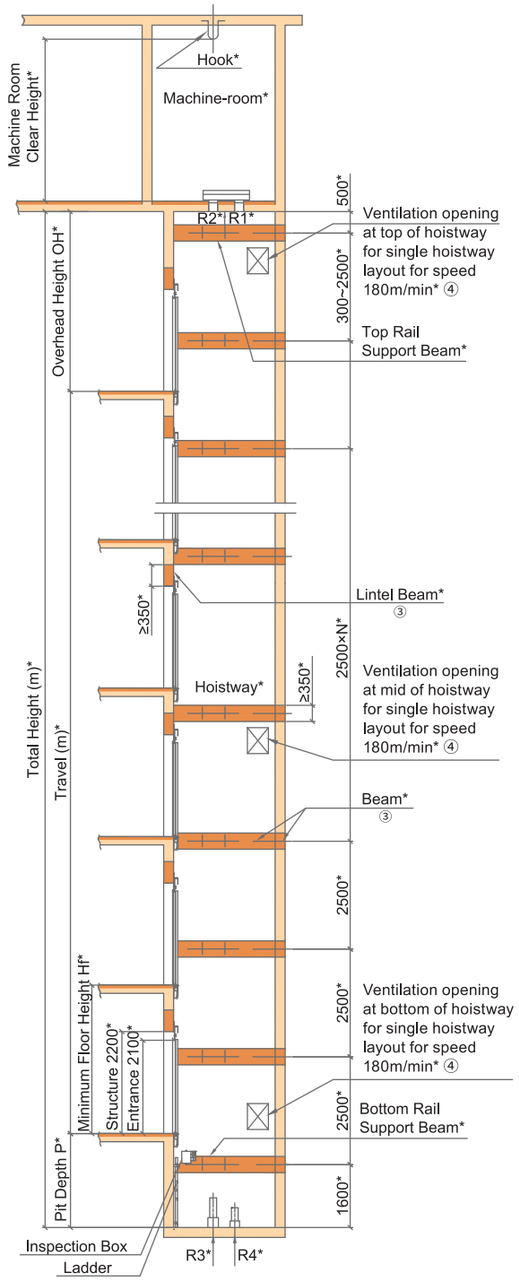
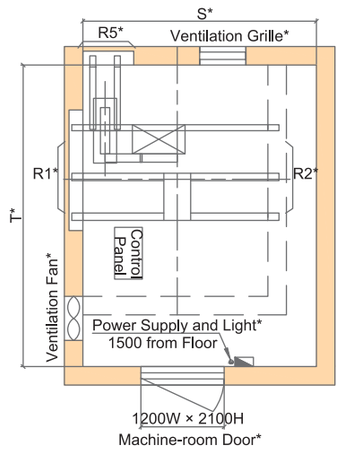
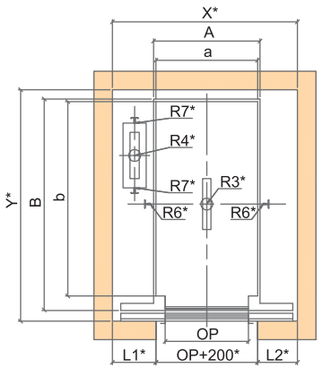
Hoistway Section



Machine-room Plan



Hoistway Plan



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⑤ Unit of dimension shall be in mm unless otherwise stated.

Load (kg)	Speed (m/min)	Machine-room Clear Height (mm)	Hook Capacity (Tons)
1050	60/90/105	2100	3
	120/150/180	2450	4

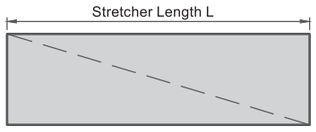
Hoistway and Machine Room

Deep Car

Load (kg)	Speed (m/min)	Car Size (mm)		Door Opening (mm)		Front Wall Arrangement (mm)		Hoistway Dimension (mm)	Machine Room Size (mm)	Reaction Loading (KN)						
										Machine Room			Pit			
		Internal (a×b)	External (A×B)	Type	Width	L1	L2	X×Y	S×T	R1	R2	R5	R3	R4	R6	R7
1050	60	1100×2100	1150×2285	2P-CO	900	430	430	1960×2500	1960×2500	67.6	40.2	5.5	135	113	42	3
	90									70.4	42.1	5.5	145	123	50	5
	105															
	120					470	430	2000×2500	2000×2500	77	48	6	165	145	60	7
	150									78	55	7	195	165	65	7
	180					570	430	2100×2550	2100×2550	129	86	—	220	190	78	13
1050	60	1300×1900	1350×2085	2P-CO	900	520	430	2050×2300	2050×2300	67.6	40.2	5.5	135	113	42	3
	90									70.4	42.1	5.5	145	123	50	5
	105															
	120					570	430	2100×2300	2100×2300	77	48	6	165	145	60	7
	150									78	55	7	195	165	65	7
	180					670	430	2200×2350	2200×2450	129	86	—	220	190	78	13

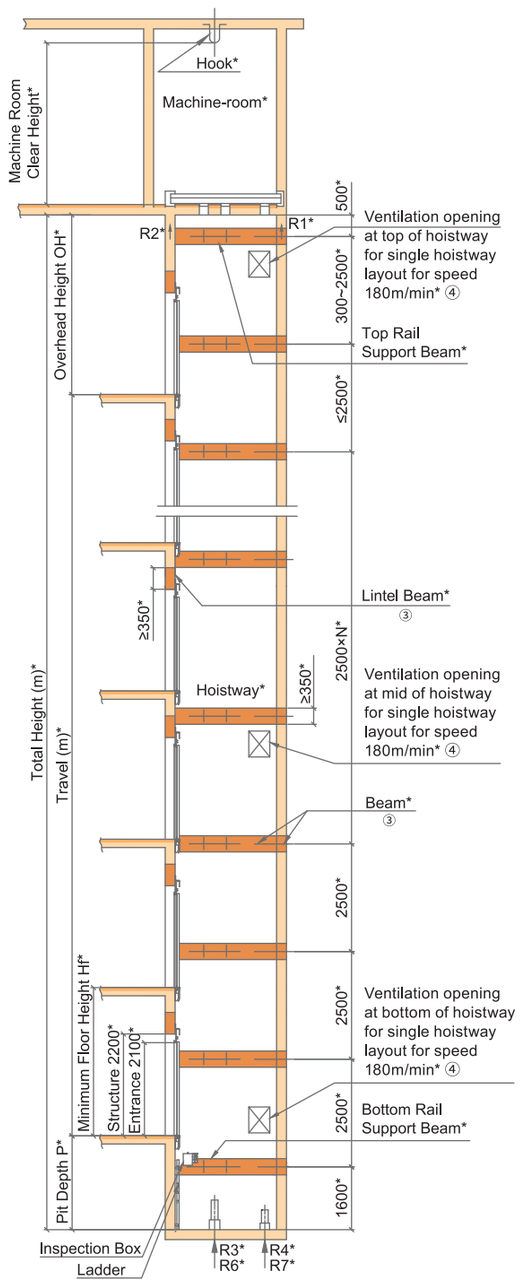
Note:
1) The above information and dimensions are based on GB standards.
2) The above information and dimensions are based on left side counterweight.
3) Configuration is without counterweight safety gear.

Maximum Allowable Stretcher Size (Deep Car) :

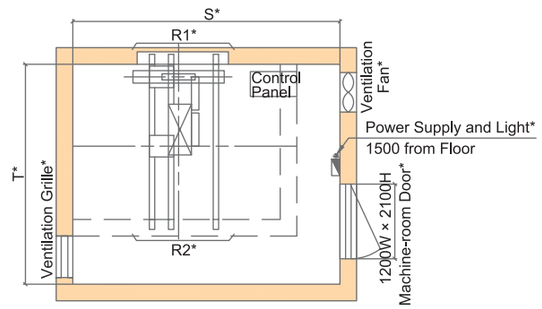


Car Internal Size (a×b) (mm)	Maximum Stretcher Length (L)	Lift Landing Depth (mm)
1100×2100	2100	≥2100
1300×1900	1900	≥1900

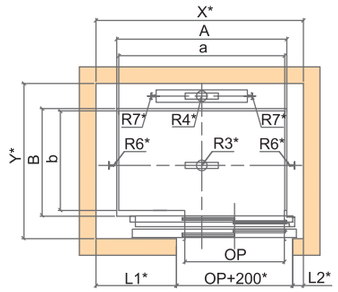
Hoistway Section



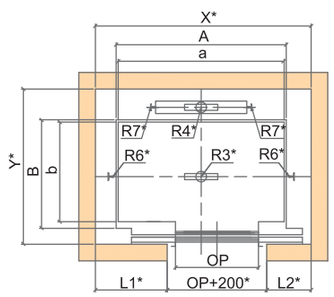
Machine-room Plan



Hoistway Plan
(Opening type: 2S-2P)



Hoistway Plan
(Opening type: 2P-CO, Door offset: 190mm)



Note:
① Items with "*" shall be furnished by building contractors.
② Hoistway shall not be located next to bedrooms, classroom, ward, library or any other places where low noise is required.
③ 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.
④ For hoistway and machine room details, please contact us.
⑤ Unit of dimension shall be in mm unless otherwise stated.

Load (kg)	Speed (m/min)	Machine-room Clear Height (mm)	Hook Capacity (Tons)
1050	60/90/105	2100	3
	120/150/180	2450	4

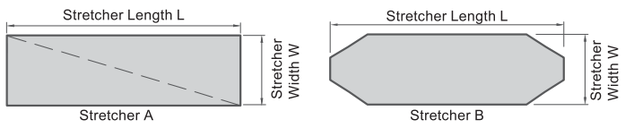
Hoistway and Machine Room

Wide Car

Load (kg)	Speed (m/min)	Car Size (mm)		Door Opening (mm)		Front Wall Arrangement (mm)		Hoistway Dimension (mm)	Machine Room Size (mm)	Reaction Loading (KN)					
		Internal (a×b)	External (A×B)	Type	Width	L1	L2	X×Y	S×T	Machine Room		Pit			
										R1	R2	R3	R4	R6	R7
1050	60	2000×1200	2050×1423	2S-2P	1200	980	120	2500×1850	2500×1850	66	40	135	113	42	3
	90									69.5	42	145	123	50	5
	105														
	120					970	130	2500×1870	2500×1870	76	50	165	150	60	7
	150									89	60	180	175	66	7
	180							2500×2050	2500×2050	125	93	229	195	80	13
1050	60	2000×1200	2050×1385	2P-CO (Door offset)	1000	800	500	2500×1800	2500×1800	66	40	135	113	42	3
	90									69.5	42	145	123	50	5
	105														
	120									76	50	165	150	60	7
	150									89	60	180	175	66	7
	180							2500×1970	2500×1970	125	93	229	195	80	13

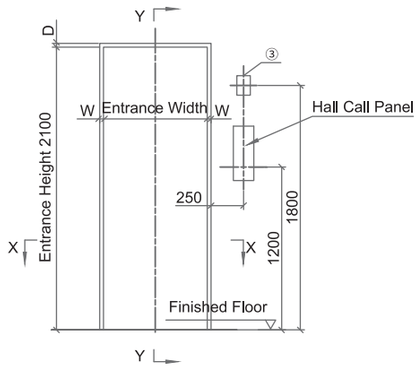
Note:
1) The above information and dimensions are based on GB standards.
2) Configuration is without counterweight safety gear.

Maximum Allowable Stretcher Size (Wide Car):

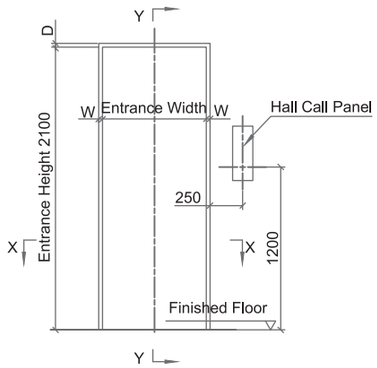


Car Internal Size (a×b) (mm)	Opening Width (mm)	Maximum Stretcher Size (L×W) (mm)	Lift Landing Depth (mm)
2000×1200	1200	1900×550 | Stretcher A |	≥1500
2000×1200	1000	1900×550 | Stretcher B |	≥1500

Elevation of Entrance

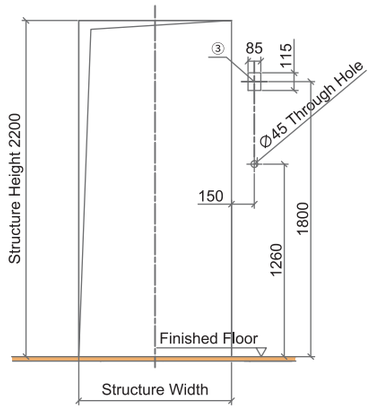


For Entrance With Fireman Switch

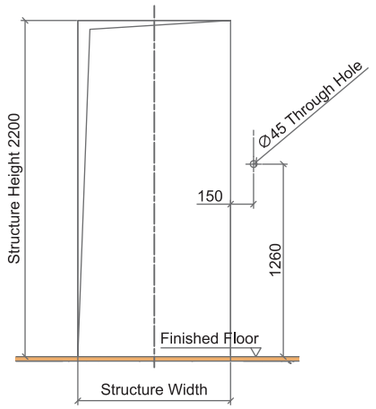


For Entrance Without Fireman Switch

Structure Opening of Entrance



For Entrance With Fireman Switch



For Entrance Without Fireman Switch

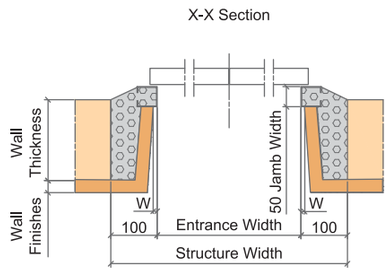
Type	AS-1X	SS-1X
W	10	25
D	10	25

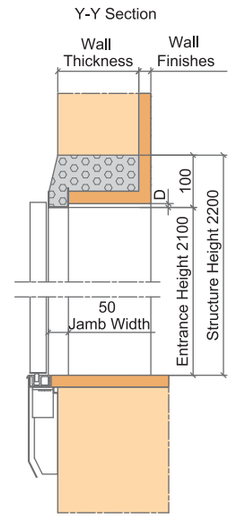
Note:
① Structural opening of entrance shall be furnished by building contractor.
② Unit of dimension shall be in mm unless otherwise stated.
③ Applicable only when fireman operation function with fireman switch is located at lift landing.

The followings shall be furnished by building contractors:

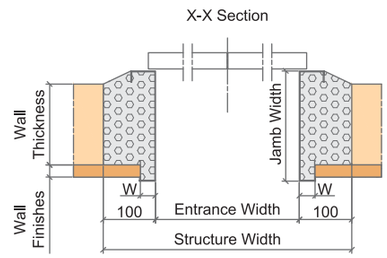
- Building Structure
- Wall and Floor Finishes
- Grouting Work

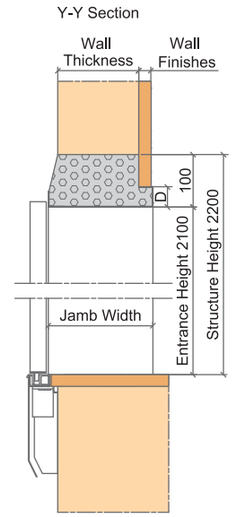
Narrow Jamb (AS-1X)





Wide Jamb (SS-1X)





Electrical Data

No.	Load (kg)	Speed (m/min)	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	Ventilation Fan Size Dia (Ø mm)
1	450	60	3Φ380V 1Φ220V 50Hz	25	32	6	9	6	8	6	8	200
		90		25	40	7	12	6	10	6	10	200
		105		25	40	8	13	6	10	6	10	250
2	630	60		25	32	7	11	6	8	6	8	200
		90		25	40	9	14	8	10	8	10	250
		105		32	50	10	16	8	16	8	16	250
3	825	60		25	40	8	13	6	8	6	8	250
		90		32	50	10	17	8	16	8	16	250
		105		40	63	11	19	8	16	8	16	300
		120		40	63	12	21	16	25	16	16	300
		150		50	80	15	25	25	30	16	16	300
		180		50	100	16	27	25	30	16	16	350
4	900	60		25	40	8	14	6	10	6	10	250
		90		32	63	11	18	8	16	8	16	300
		105		40	63	12	20	10	25	10	16	300
		120		40	80	14	23	16	25	16	16	300
		150		50	80	16	26	25	30	16	16	300
		180		63	100	17	29	25	35	16	16	350
5	1050	60		40	50	9	15	6	10	6	10	250
		90		40	63	12	20	10	25	10	16	300
		105		40	80	14	23	10	25	10	16	300
		120		50	80	15	25	16	30	16	16	300
		150		63	100	18	30	25	30	16	16	350
		180		63	100	20	33	25	35	16	16	350
6	1150	60		40	50	9	16	8	10	8	10	250
		90		40	63	13	21	10	25	10	16	300
		105		50	80	14	24	10	25	10	16	300
		120		50	80	16	26	16	30	16	16	300
		150		63	100	19	32	25	35	16	16	350
		180		63	125	21	35	25	35	16	16	400
7	1350	60		40	50	11	18	8	16	8	16	300
		90		50	80	14	24	10	25	10	16	300
		105		50	80	16	27	16	25	16	16	300
		120		63	100	18	31	25	30	16	16	350
		150		80	125	22	37	25	35	16	16	350
		180		80	125	24	41	25	50	16	25	400

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)		Machine Room Ventilation
				1 unit	2 units	1 unit	2 units	1 unit	2 units	1 unit	2 units	Ventilation Fan Size Dia (Ø mm)
8	1600	60	3Φ380V 1Φ220V 50Hz	40	63	12	20	8	16	8	16	300
		90		50	80	16	27	16	25	16	16	300
		105		63	100	18	31	16	30	16	16	350
		120		63	100	21	35	25	30	16	16	350
		150		80	125	25	42	25	35	16	16	400
		180		80	160	28	47	30	50	16	25	400
9	1800	60		50	80	15	24	10	25	10	16	300
		90		80	100	19	33	16	30	16	16	350
		105		80	125	22	37	25	30	16	16	350
		120		80	125	24	41	30	50	16	25	400
		150		125	160	29	49	35	60	16	30	400
10	2000	60		50	80	16	26	10	25	10	16	300
		90		80	125	21	35	25	30	16	16	350
		105		80	125	24	40	25	35	16	16	400
		120		80	160	26	44	30	50	16	25	400
		150		125	160	32	53	35	80	16	40	400

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]

② The temperature in machine room shall be 5°C~40°C.

③ Ventilation rate of fan shall be as below:

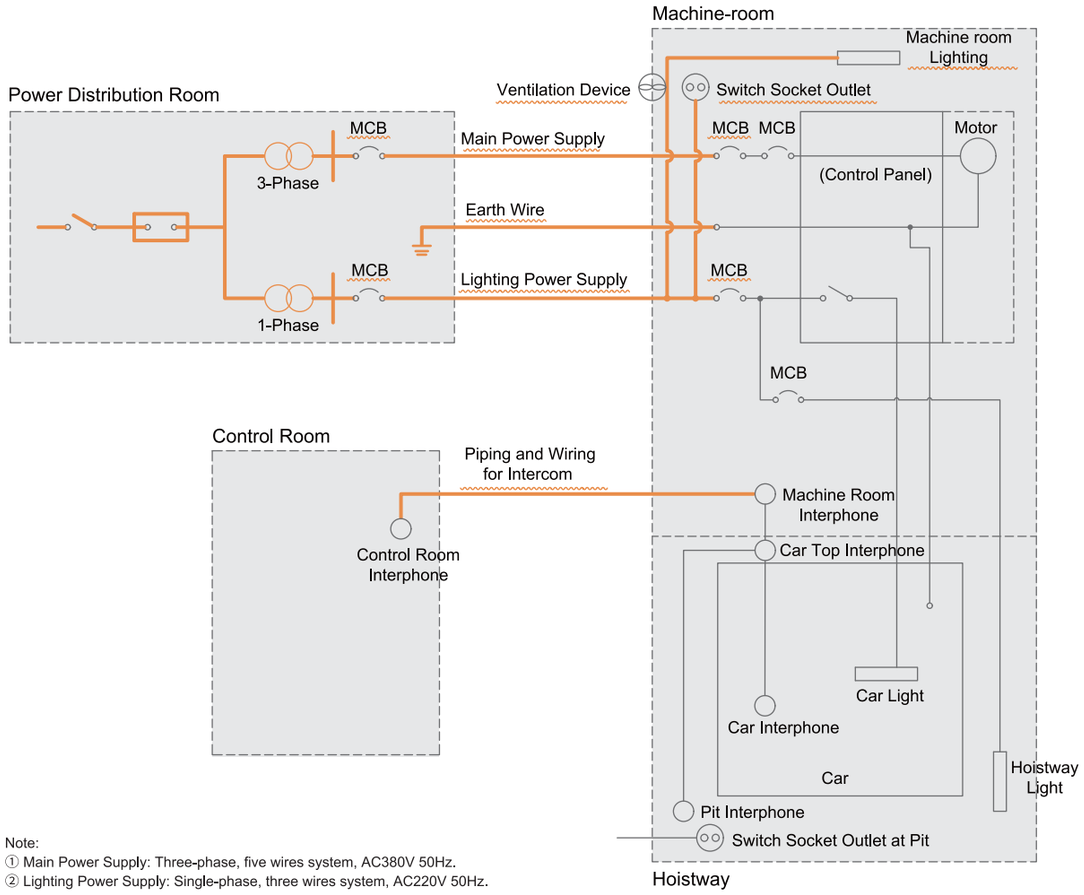
Fan Size (Ø mm)	Ventilation Rate (m³/h)
200	540
250	930
300	1740
350	2460
400	3720

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 machine room. 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 machine room to ensure that the temperature in the machine room 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.

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 and machine-room

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 and machine room walls, floors and roofs should be able to absorb a large number of elevator operation noise.
6. Hoistway and machine room 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 and ventilated machine room of adequate size 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 hook in the machine room with required loading as shown in this catalogue.

Note

Note