

HITACHI Inspire the Next Freight Elevator
Model LF-II

This information in this catalogue is subject to change without notice. The information and diagram in this catalogue reflect the technical feature and configuration of the elevator model at press time (refer to the version number). In line with the principle of continuous development of products, our company reserves the right to change the selection of product technical parameters and colour at any time. The existing image technology cannot accurately reproduce the elevator component structure and decoration colour. Therefore, this catalogue only provides general information, not as a contract document. The specific configuration parameters are subject to the formal agreement.

With the emergence of new scenarios and applications driven by a new technological revolution, the industrial design community is embracing new ways of thinking and creating. Given these trends, Hitachi Elevator is seeking to apply a diverse lineup of technologies to industrial design, with the aim of better meeting customers need.

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01 / Optimized Design

03 / Precise Control System

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Optimized Design

Empowering elevators with the improved hoistway design and roping system to make the elevator more suitable for the buildings. Various decorations and option specification based on customer's need are available to meet the particular requirements.

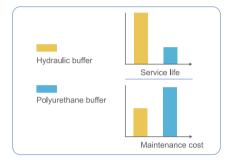
Permanent Magnet Synchronous

The new permanent magnet synchronous traction machine is compact in size, lighter in weight, with lower energy consumption and higher braking torque to meet the duty for heavy capacity.



Hydraulic Buffer

The hydraulic buffer is durable with simple maintenance features.
Furthermore, its standard metal base helps to enhance the installation efficiency.



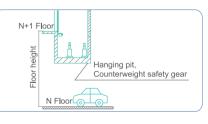
Anti-collision Protection (Option)

Anti-collision protection is an option feature, to mitigate the collision impact on the car walls.



Counterweight Safety Gear (Option)

With counterweight safety gear, hanging pit layout complying to GB standards can be achieved.

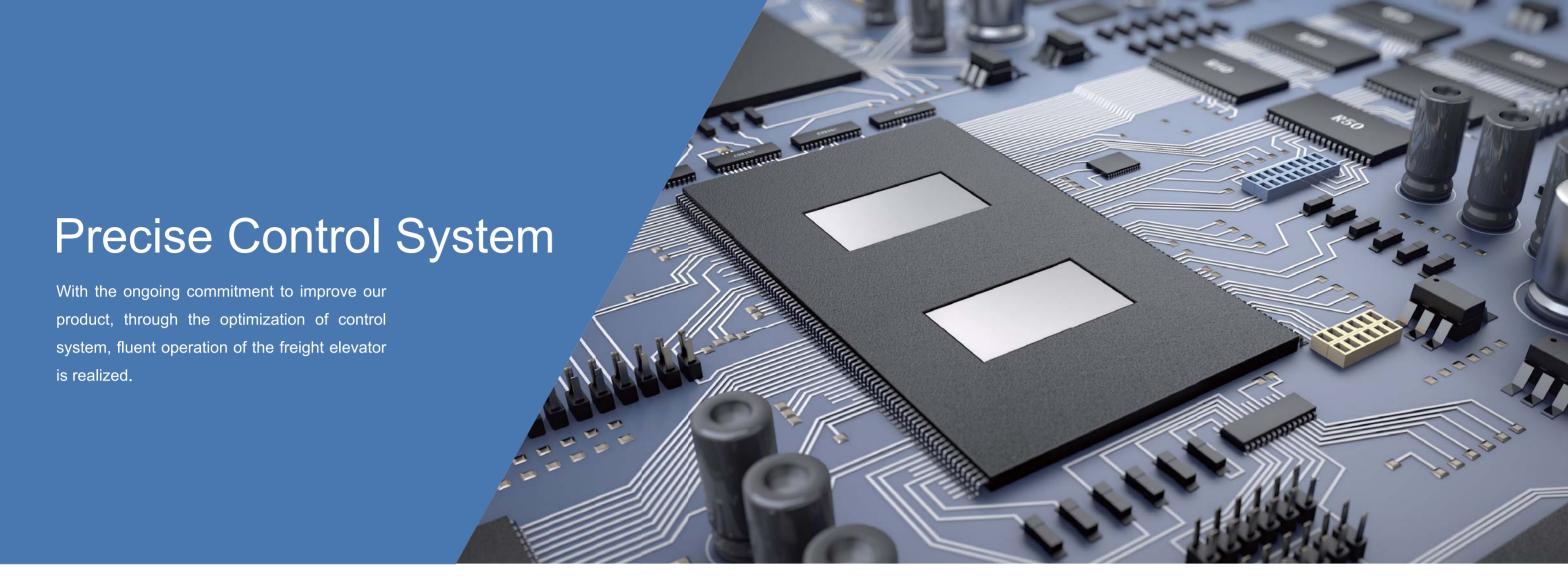


Optimized Machine Room Space

♦ Through updating the traction system and components to improve the utilization of machine room space.



 \sim 01



High Precision Starting Torque Compensation

- Accurate rotation coder helps to achieve a smooth and comfortable start.
- Improved system and components setting to enhance stability and reduce noise.



High Performance Processor

- Compact size multi-processor system with faster calculation speed
- Advanced digital processing capability to improve efficiency and energy saving.
- High performance microcomputer that control the frequency conversion to ensure accurate and reliable control.



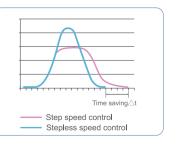
Serial Communication

The high grade serial communication offer superior anti-interference level, high calculation speed and short communication distance features to improve the accuracy and speed of signal transmission.



Stepless Speed Control

Hitachi elevator has been adopting stepless speed control for many years. With Hitachi's highly efficient control system, the precise optimum traveling speed curve can be directly calculated by the output according to the distance from the car location to the destination.





Door Opening Prolong Function

♦ In Car

With the standard door opening prolong button in car, users do not need to push the button for long period of time during loading and unloading.

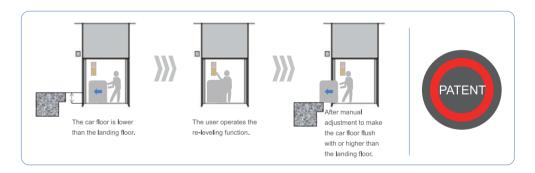
♦ In Hall

Door opening prolong button in hall is also a standard function. Users do not need to push the button for long period of time or enter the car to push the prolong button. This enhances the efficiency and safety during loading and unloading.



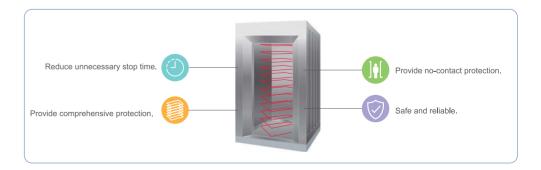
Manual Re-leveling Function (Option)

When there is difference in the level between car floor and landing floor caused by the weight of the cargo, this function allows the user to manually adjust the level so that loading and unloading of cargo can be carried out smoothly.



Multi-Beam Protection

Multi-beam protection is a standard function configured to provide contact-less protection for the users and cargo.



Car Design



(Standard)

Car ceiling: Painted steel

HP57 (Matt light brown)

Lighting: LED downlight Ventilation: Circular fan

Car wall: Painted steel

HP57 (Matt light brown)

Car door: Painted steel

HP57 (Matt light brown)

Floor: Checkered steel plate





Option

Car ceiling: Stainless steel hairline

Lighting: LED downlight

Ventilation: Circular fan

Car floor: Stainless steel hairline

Car door: Stainless steel hairline

Floor: Checkered steel plate

Anti-collision on 3 Sides:

Stainless steel hairline

(With or Without)



Option

Anti-collision on 3 Sides: Stainless steel hairline





Option

Car ceiling: Painted steel
CP30 (Light cyan)

Lighting: LED downlight

Ventilation: Circular fan

Car wall: Painted steel

CP30 (Light cyan)

Car door: Painted steel

CP30 (Light cyan)

Floor: Checkered steel plate

Anti-collision on 3 Sides:

And complete on o olde

Stainless steel hairline (With or Without)

|07|

Operating Panel and Entrance









GOP-195 Indicator:

Dot-matrix Button: GL-MOA Finishes: Stainless steel hairline



GOP-196

Indicator: Monochrome LCD Button: GL-MW Finishes: Stainless

steel hairline

Hall Operating Panel (Surface-mount Type)

Standard



VIB-658 VIB-658W Indicator: Dot-matrix

Button: GL-MOA Finishes: Stainless steel hairline

Option



VIB-668 VIB-668W

Indicator: Monochrome LCD Button: GL-MW Finishes: Stainless steel hairline

Button

Standard



GL-MOA



GL-MW

Entrance



Standard

AS-1X

Opening type: 2S-2P Jamb frame: Painted steel HP57 (Matt light brown) Door panel: Painted steel HP57 (Matt light brown) Door sill: Extruded hard aluminum



Standard

AS-1X

Opening type: 4P-CO Jamb frame: Painted steel HP57 (Matt light brown) Door panel: Painted steel HP57 (Matt light brown) Door sill: Extruded hard aluminum



Option

AS-1X

Opening type: 2S-2P Jamb frame: Stainless steel hairline Door panel: Stainless steel hairline

Door sill: Extruded hard aluminum



Option

AS-1X

Opening type: 4P-CO

Jamb frame: Stainless steel hairline Door panel: Stainless steel hairline

Door sill: Extruded hard aluminum



Option

AS-1X

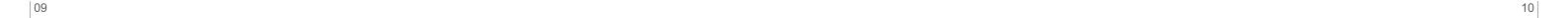
Opening type: 2S-2P Jamb frame: Painted steel CP30 (Light cyan) Door panel: Painted steel CP30 (Light cyan) Door sill: Extruded hard aluminum



Option

AS-1X

Opening type: 4P-CO Jamb frame: Painted steel CP30 (Light cyan) Door panel: Painted steel CP30 (Light cyan) Door sill: Extruded hard aluminum



Decoration & Entrance

Car Decoration

Item	Specification	Standard Option
	Painted steel HP57 (Matt Light Brown)	•
Ceiling	Painted steel WN01 (Ivory White) / CP30 (Light Cyan)	0
	Stainless steel hairline	0
Car Door/Transom/	Painted steel HP57 (Matt Light Brown)	•
Front Return Wall	Painted steel WN01 (Ivory White) / CP30 (Light Cyan)	0
Tront Neturn Wall	Stainless steel hairline	0
	Painted steel HP57 (Matt Light Brown)	•
3 Side Walls	Painted steel WN01 (Ivory White) / CP30 (Light Cyan)	0
	Stainless steel hairline	0
Anti-collision Protection	Stainless steel hairline	0
Car Sill	Extruded hard aluminum [One-time loading: ≤500kg]	•
Cai Sili	Mild steel [One-time loading: ≤1200kg (Load 1600~2000kg), ≤1800kg(Load 3000kg)]	0
Car Floor	Checkered steel plate	•
Car Operating Panel	GOP-195	•
Car Operating Paner	GOP-196	0

Entrance

Item	Specification	Standard Option
	AS-1X, Jamb width=100mm	•
Jamb Type	RS-1, Jamb width=100mm	0
Jamb Type	SS-1X, Jamb width≤300mm	0
	TS-1X, Jamb width≤300mm	0
	Painted steel HP57 (Matt Light Brown)	•
Jamb Finish	Painted steel WN01 (Ivory White) / CP30 (Light Cyan)	0
	Stainless steel hairline	0
	Painted steel HP57 (Matt Light Brown)	•
Landing Door	Painted steel WN01 (Ivory White) / CP30 (Light Cyan)	0
	Stainless steel hairline	0
Landing Sill	Extruded hard aluminum [One-time loading: ≤500kg]	•
Landing Sill	Mild steel [One-time loading: ≤1200kg (Load 1600~2000kg), ≤1800kg (Load 3000kg)]	0
Hall Operating Panel	Surface-mount type: VIB-658 / VIB-658W	•
riali Operating Panel	Surface-mount type: VIB-668 / VIB-668W	0 ,

Buttons

Item	Specification	Standard Option
Button	GL-MOA	•
Bulloff	GL-MW	0

Elevator Function

Standard Function

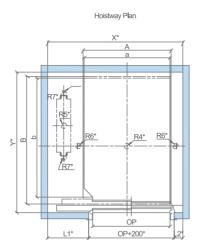
Contr	rol System				
SA1	Simplex	SA2	Floor Height Self Measurement	SA3	On-Cage (Car Top) Maintenance Operation
SA4	In-Cage Maintenance Operation	SA5	Overspeed Electrical Protection	SA6	Overspeed Mechanical Protection
SA7	Rope Slipping Running Protection	SA8	Motor Thermal Protection	SA9	Nearest Landing Operation
SA10	Automatic Fault Detection	SA11	Automatic Fault Recording	SA12	Standby Regular Auto-Check
SA13	Overload Detection System	SA14	Overload Alarm	SA15	Lift-Position Abnormity Auto-Correction Function
SA16	Double Brake-Safety Check Operation	SA17	Synchronous Motor Magnetic Pole Static Test	SA18	Machine Room Debugging Operation Function
Safe	Communication and Riding				
SB1	Interphone System (5 ways)	SB2	Out of Door-Open Zone Alarm	SB3	Alarm System
SB4	Full Load Bypass Operation	SB5	Door Opening / Closing Time Abnormity Protection	SB6	Next Drive (Door Open Abnormity)
SB7	Automatic Door Dwell Time Adjustment	SB8	Automatic Door Dwell Time Control	SB9	Number of runs Indicator
Emer	gency Solution				
SC1	Car Emergency Lighting	SC2	Fire Emergency Operation (Automatic)		
Desig	n for Comfort				
SD1	Parking Operation	SD2	Automatic Return Function	SD3	Start Torque Auto-Adjustment
SD4	Door-Stop Function (Maintenance)	SD5	Micro Levelling (Travel≥20m)	SD6	Independent Operation
SD7	Car Light Auto Turn-Off	SD8	Car Fan Auto Turn-off	SD9	Opposite Direction Car Call Cancellation
SD10	Door-Opening Prolong Function in Car	SD11	Door-Opening Prolong Function in Hall	SD12	Maintenance Display Function
SD13	Stepless Speed Control	SD14	Multi-beam Protection	SD15	Overload Indicator (In Car)

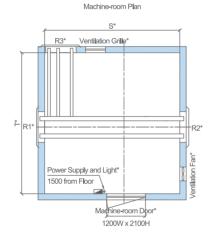
Optional Function

Cont	rol System							
OA1	Simplex Down Collective Control	OA2	Duplex Collective Control	OA3	Duplex Down Collective Control			
Safe Communication and Riding								
OB1	Contact at Control Panel (RS485)	OB2	Contact at Control Panel (Dry Contact)	OB3	Elevator Monitoring System (Computer Type)			
OB4	Supervisory Panel (Dry Contact Type)	OB5	Twisted Pair Cable (1 pair) for CCTV	OB6	Card Reader Interfacing (In Car) (RS485) (Not applicable when OD2 is selected)			
ОВ7	Twisted Pair Cable (1 pair) for BGM	OB8	Camera Device Inside the Car					
Eme	rgency Solution							
OC1	Automatic Rescue Device (Maximum travel distance ≤ 30m)	OC2	Earthquake Emergency Operation	OC3	EM. Operation for Power Failure (Manual)			
OC4	EM. Operation for Power Failure (Auto)	OC5	Pit Flood Operation					
Desi	gn for Comfort							
OD1	Attendant Operation	OD2	Floor Lock Out Operation (Not applicable when OB6 is selected)	OD3	Hall Call Registration in Car Operating panel (Applicable when OD1 is selected)			
OD4	Inspection Indication in Hall Indicator	OD5	Voice Synthesizer	OD6	Arrival Chime (Car Top & Bottom)			
OD7	Multi-Beam + Safety Edge Protection	OD8	Car Indicator Signal Lamp	OD9	Double Opening Function			
DD10	Car Call Deselect Function	OD11	Advance Door Opening	OD12	Manual Re-Leveling Function			
DD13	Micro Levelling (Travel<20m)							

Hoistway and Machine Room

Hoistway Section Top Rail Support Beam* Reinforced concrete beams with strength not less than C25 or whole hoistway with reinforced concrete wall* Support Beam*





Vote:

- $\ensuremath{\mathfrak{1}}$ 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)		Machine Room Clear Height (mm)	Number of Suspension Hooks (Per lift)	Suspension Hook Capacity (Tons)
1600	30/60	2500	3	3
2000	30/60	2500	3	4
3000	30/60	2500	3	5

Hoistway and Machine Room

Load	Speed	Car : (m	Size im)	Door O (m	pening m)	Front Wall Arrangement (mm)		Arrangement		Arrangement		Arrangement		Arrangement		Arrangement		Arrangement		Hoistway (mm)	Machine Room (mm)	Reaction Loading (KN)						
(kg)	(m/min)	Internal (a×b)	External (A×B)	Туре	Width (OP)	L1	L2	X×Y	S×T		hine R				Pit													
		(a^b)	(A^B)		(01)					R1	R2	R3	R4	R5	R6	R7												
1600 (Single	30	1600×2100	1650×2300	2S-2P	1500	800	200	2700×2600	2700×2600	90	70	20	170	140	55	5												
Opening)	60	1000*2100	1650×2300	25-27	1500	800	200	2100^2000	2700**2000	90	70	20	170	140	55	5												
2000	30	1600×2500					200																					
(Single Opening)	60		1600×2500	1650×2700	2S-2P	1500	800	200	2700×3000	2700×3000	100	80	20	190	150	55	5											
3000 (Single Opening)	30	0000.0770	0050,0070	00.00	4000	050	000	0450,0070	0450,0070	450	400	00	000	000	0.5	_												
	60	2000×2770	2050×2970	2S-2P	1800	950	200	3150×3270	3150×3270	150	120	30	300	220	85	5												

Load (kg)	Speed (m/min)	Overhead Height (mm)	Pit Depth (mm)
1600	30	4000	1350
1000	60	4050	1350
2000	30	4000	1350
2000	60	4050	1350
3000	30	4000	1350
3000	60	4050	1350

Load (kg)	Speed (m/min)	Maximum Number of Stops	um Number of Stops Maximum Travel (m)				ne l			
1600/2000/3000	30	8	40	2800						
1000/2000/5000	60	16	70	2800						

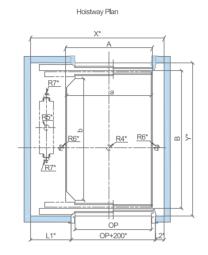
Note:

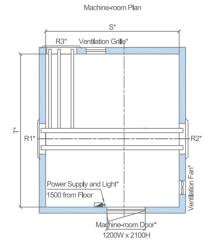
- ① The information and dimensions above are based on GB standards.
- 2 Configuration is without counterweight safety gear and with decoration weight provision up to 300kg.
- ③ The overhead height above is based on bare ceiling height of 2200mm.
- 4 The pit depth above is based on standard checkered steel plate finish without floor recess.

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Hoistway and Machine Room

Hoistway Section Top Rail Support Beam* Reinforced concrete beams with strength not less than C25 or whole hoistway with reinforced concrete wall*





Vote:

- 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)		Machine Room Clear Height (mm)	Number of Suspension Hooks (Per lift)	Suspension Hook Capacity (Tons)
1600	30/60	2500	3	3
2000	30/60	2500	3	4
3000	30/60	2500	3	5

Hoistway and Machine Room

Load	Speed	Car Size (mm)				Front Wall Arrangement (mm)		Hoistway (mm)	Machine Room (mm)			Reac	tion Lo (KN)	oading		
(kg)	(m/min)	Internal	External	Туре	Width	L1	L2	X×Y	S×T	Mac	hine R	loom		Р	it	
		(a×b)	(A×B)	.,,,,	(OP)					R1	R2	R3	R4	R5	R6	R7
1600 (Double	30	1600~2200	1650×2520	2S-2P	1500	800	200	2700×2940	2700×2940	90	70	20	170	140	55	5
Opening)		1000*2200	1030*2320	25-21	1500	500 600	200	2700^2940	2700^2940	90	70	20	170	140	55	3
2000 (Double	30	4000,0000	4050,,0000	00.00	4500	000	000	07000040	0700,0040	400	00	00	400	450		_
Opening)	60	1600×2600	1650×2920	2S-2P	1500	800	200	2700×3340	2700×3340	100	80	20	190	150	55	5
3000 (Double	30	2000×2870	2050×3190	2S-2P	1800	950	200	3150×3610	3150×3610	150	120	30	300	220	85	5
Opening)	60	2000*2870	2050*3190	23-27	1600	900	200	3130*3610	3130*3610	100	120	30	300	220	05	٥

Load (kg)	Speed (m/min)	Overhead Height (mm)	Pit Depth ⑤ (mm)
1600	30	4000	1350/1720
1600	60	4050	1350/1720
2000	30	4000	1350/1720
2000	60	4050	1350/1720
2000	30	4000	1350/1720
3000	60	4050	1350/1720

Load (kg)	Speed (m/min)	Maximum Number of Stops	Maximum Travel (m)	Minimum Floor Height (mm)
1600/2000/3000	30	8	40	2800
1600/2000/3000	60	16	70	2800

Note:

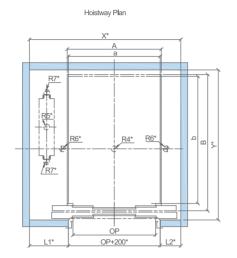
- 1) The information and dimensions above are based on GB standards.
- 2 Configuration is without counterweight safety gear and with decoration weight provision up to 300kg.
- 3 The overhead height above is based on bare ceiling height of 2200mm.
- 4 The pit depth above is based on standard checkered steel plate finish without floor recess.
- (§) When the front/rear entrance open on the lowest floor and there is no openings on the same side at other floors, pit depth shall be 1720mm.

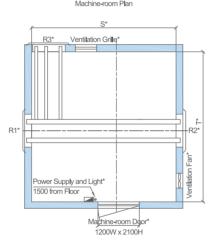
 Otherwise, pit depth shall be 1350mm.

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Hoistway and Machine Room

Hoistway Section R2* R1* Top Rail Support Beam* with strength not less than C25 or whole hoistway with reinforced concrete wall* Bottom Rail





Jote.

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- 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.

		Machine Room Clear Height (mm)	Number of Suspension Hooks (Per lift)	Suspension Hook Capacity (Tons)
1600	30/60	2500	3	3
2000	30/60	2500	3	4
3000	30/60	2500	3	5

Hoistway and Machine Room

Load	Speed		Car Size (mm)		pening m)	Front Arrang (m	ement	Hoistway (mm)	Machine Room (mm)		Reaction Loading (KN)					
(kg)	(m/min)	Internal	External	Туре	Width	L1	L2	X×Y	S×T		hine R				it	
		(a×b)	(A×B)		(OP)					R1	R2	R3	R4	R5	R6	R7
1600 (Single	30	1600×2100	1650×2300	4P-CO	1500	650	450	2800×2600	2800×2600	90	70	20	170	140	55	5
Opening)	60	1600*2100	1650*2300	4P-00	1500	000	450	2800*2600	2800*2600	90	70	20	170	140	55	5
2000 (Single	30	4000 0500	4050 0700	45.00	4500	050	450	0000 0000	0000 0000	400			400	450		_
Opening)	60	1600×2500	1650×2700	4P-CO	1500	650	450	2800×3000	2800×3000	100	80	20	190	150	55	5
3000 (Single	30	2000×2770	2050×2070	4D.CO	1900	950	450	2200~2270	2200+2270	150	120	20	200	220	0.5	E
Opening)	60	2000×2770	2050×2970	4P-CO	1800	850	450	3300×3270	3300×3270	150	120	30	300	220	85	5

Load (kg)	Speed (m/min)	Overhead Height (mm)	Pit Depth (mm)
1600	30	4000	1350
1600	60	4050	1350
2000	30	4000	1350
2000	60	4050	1350
3000	30	4000	1350
3000	60	4050	1350

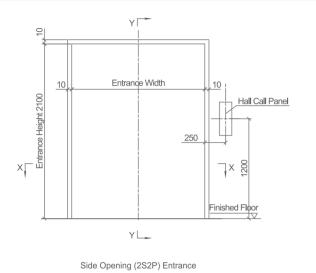
Load (kg)	Speed (m/min)	Maximum Number of Stops	Maximum Travel (m)	Minimum Floor Height (mm)
1600/2000/3000	30	8	40	2800
1600/2000/3000	60	16	70	2800

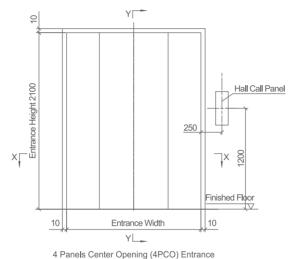
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- 4 The pit depth above is based on standard checkered steel plate finish without floor recess.

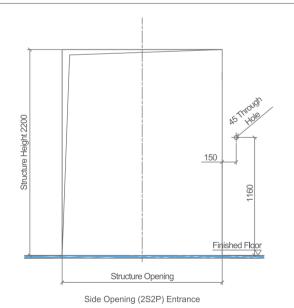
Entrance Design

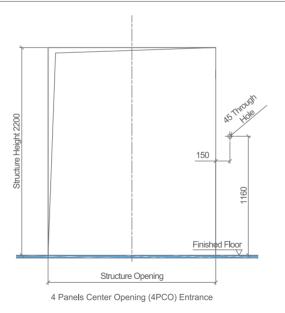
Elevation of Entrance with Narrow Jamb (AS-1X)





Structure Opening of Entrance with Narrow Jamb (AS-1X)





Note:

- ① Structural opening of entrance shall be furnished by building contractor.
- ② Unit of dimension shall be in mm unless otherwise stated.

Entrance Design

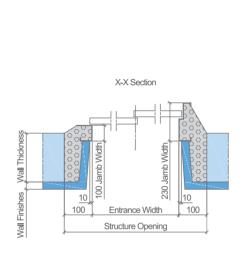
The followings shall be furnished by building contractors:

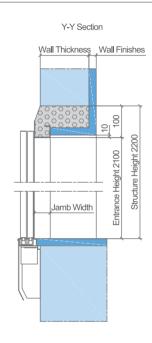
Building Structure

Wall and Floor Finishes

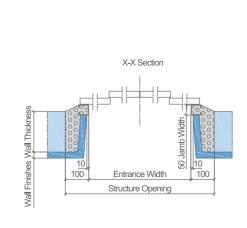
Grouting Work

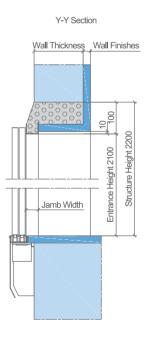
Side Opening (2S2P) with Narrow Jamb (AS-1X)





4 Panels Center Opening (4PCO) with Narrow Jamb (AS-1X)



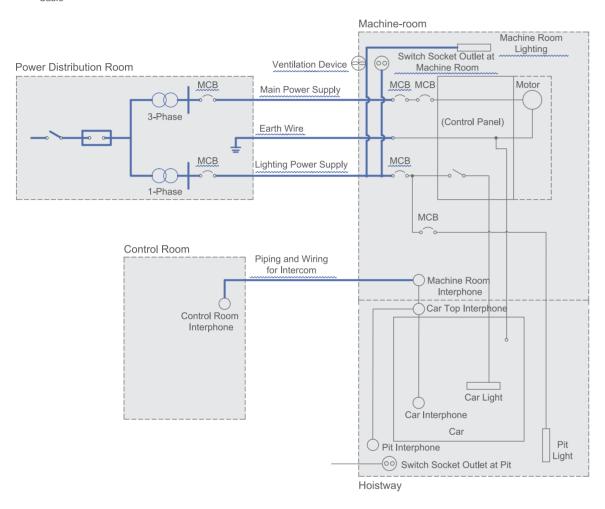


Electrical Information

The followings shall be furnished by building contractors:

---- Electrical Equipment

— Cable



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.

Electrical Data

	Load (kg) -	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		Breaker city (A)		former ty (kVA)		Power ze (mm²)	Earth Wire Size (mm²)		Machine Room Ventilation (For One Elevator)		
No.	Speed (m/min)	Voltage	1 unit	2 unit	1 unit	2 unit	1 unit	2 unit	1 unit	2 unit	Heat Calorific (J.10 ⁶ /h)	Amount of Air to be Ventilated (m³/h)	Ventilation Fan Size Dia (Фmm)
1	1600-30		20	30	8	13	8	10	8	10	5.03	581.33	250
'	1600-60		40	50	13	20	16	25	16	16	10.06	1152.76	300
2	2000-30	3φ380V	30	40	8	16	8	16	8	16	6.29	724.19	250
2	2000-60	1φ220V 50Hz	50	60	16	25	16	30	16	16	12.57	1438.47	300
	3000-30		40	50	13	20	10	25	10	16	9.43	1081.33	300
3	3000-60		60	100	25	40	25	35	16	16	18.85	2152.76	350

- $\ensuremath{\mathfrak{I}}$ The above main power wire size is based on length less than 150m.
- ② For wire length more than 150m, please calculate the wire size using the formula below: Wire Size (mm²) = [Actual wire length / 150]×[Wire size in above tabulation]

Civil Works Matters

Working environment of the elevator shall be as follow:

- 1. Ambient temperature shall be between 5°C to 40°C.
- 2. Maximum relative humidity is 90%, and the monthly mean minimum temperature should be below 25°C.
- 3. Supply voltage fluctuation shall be within ±7°C.
- 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