MITSUBISHI ELECTRIC

Changes for the Better

Quality in Motion™

Freight Elevator Series GFM-T



Our Freight Elevators Can Improve Your Goods-Handling Ability

GFM-T

Elevator Selection

1. Rated capacity and car size

What is the maximum weight or size of goods to be transported at one time? → Is a forklift used to load and unload goods? → Select car size → Check shaft size and loading area → Set rated capacity

Driving system	Traction type
Machine room location	Directly over the hoistway
Rated capacity *1	750kg~6000kg
Rated speed *1	30m/min.~60m/min.
Maximum travel	30m
Overhead, Pit depth	Refer to pages 7 to 10
Motor capacity	

*1: Combinations between capacity and speed are shown in the table on the next page.

2. Operation system

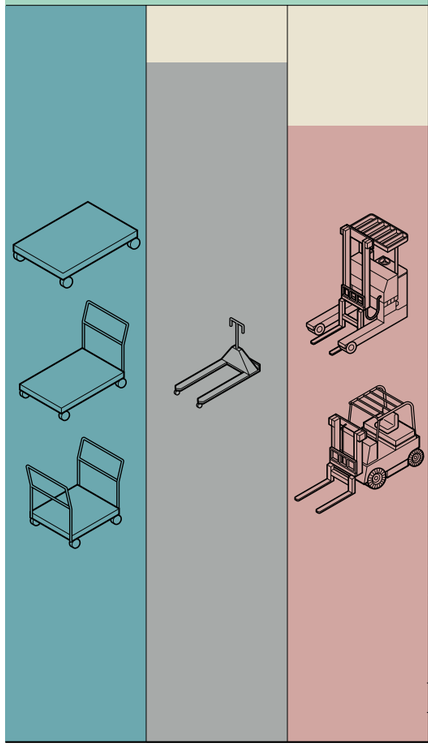
Operation system	Outline	Remarks
Single automatic for freight 1BF	Responds to individual calls. It cannot register new calls during operation.	General operation system for typical freight uses.
Selective collective 2BC	Responds in sequence to calls in the same direction. It allows both directions per call.	Applicable for handling small goods.

3. Door system

Door type		Remarks
Horizontal sliding doors	2S: 2-panel side opening 3S: 3-panel side opening 2CO: 4-panel center opening	These door types have comparatively fast operation.
Vertical sliding doors	2U: 2-panel upward opening 3U: 3-panel upward opening	These door types make it easy to align same-size entrance width and car width. *Note: Not applicable with 2BC operation.*

Basic Specifications

The following dimension is shown in Japan code.

Loading equipment and scope of application	Type	Capacity (kg)	Car interior (mm) Width (AA)	Car interior (mm) Depth (BB)	Door type	Entrance (mm) Width (JJ)	Entrance (mm) Height (HH)	Speed (m/min.)
	F-750-2S	750	1300	2300	2S	1100	2100	45/60
	F-1000-2S	1000	1700	2300	2S	1400	2100	45/60
	F-1500-2S	1500	2200	2400	2S	1700	2100	45/60
	F-2000-2S	2000	2200	2800	2S	1700	2100	45/60
	F-2500-3S	2500	2500	3000	3S	2300	2500	45/60
	F-2500-2U				2U	2500		
	F-2500-3U				3U	2500		
	F-3000-3S	3000	2500	3400	3S	2300	2500	45/60
	F-3000-2U				2U	2500		
	F-3000-3U				3U	2500		
	F-3500-3S	3500	2800	3800	3S	2400	2500	45/60
	F-3500-2U				2U	2800		
	F-3500-3U				3U	2800		
	F-4000-2CO	4000	3000	4500	2CO	2400	2500	30/45
	F-4000-2U				2U	3000		
	F-4000-3U				3U	3000		
	F-4500-2CO	4500	3200	4500	2CO	2500	2500	30/45
	F-4500-2U				2U	3200	3000	
	F-4500-3U				3U	3200		
	F-5000-2CO	5000	3200	5000	2CO	2500	2800	30/45
	F-5000-2U				2U	3200	3000	
	F-5000-3U				3U	3200		
	F-6000-2CO	6000	3500	5800	2CO	2700	2800	30
	F-6000-2U				2U	3500	3000	
	F-6000-3U				3U	3500		

Note: 1. Freight elevators of less than 2500kg capacity can only be loaded by handtrucks with casters. Goods cannot be loaded by forklift.
Please consult our sales agency if you plan to use a forklift to load and unload goods with our traction-type freight elevators of 2500kg capacity or more.
2. In cases where capacity exceeds 3000kg, please consult our sales agency for details.
3. 2U, 3U door type can not be applied for EN-81-1 or GB code.

Car and Entrance Designs

Signal fixtures such as Car operating panel and Hall position indicator, etc., are shown according to operation system.
The applications vary based on the model, so please confirm when ordering.

E-102.....FC-101-2S.....Finishes and Designs 2-panel side opening





Door frame	Narrow Jamb with Painted steel sheet
Entrance Doors	Painted steel sheet
Entrance Sill	Extruded hard aluminum (Capacity of 2000kg or less) Steel plate with black paint (Over 2000kg capacity)
Hall buttons	Indicator is incorporated in Hall button unit.
Car Ceiling	Painted steel sheet
Car Walls	Painted steel sheet
Car Doors	Painted steel sheet
Flooring	Checkered steel plate with black paint
Car Sill	Same as Entrance Sill
Lighting	LEDs
Car wall protectors	Stainless steel hairline (Optional)

*Signal fixtures shown above are for Single automatic operation for freight (1BF). (Standard)

E-202.....FC-101-3S.....Finishes and Designs 3-panel side opening





Door frame	Square Jamb with Painted steel sheet (Optional)
Entrance Doors	Painted steel sheet
Entrance Sill	Extruded hard aluminum (Capacity of 2000kg or less) Steel plate with black paint (Over 2000kg capacity)
Hall buttons	Indicator is incorporated in Hall button unit.
Car Ceiling	Painted steel sheet
Car Walls	Painted steel sheet
Car Doors	Painted steel sheet
Flooring	Checkered steel plate with black paint
Car Sill	Same as Entrance Sill
Lighting	LEDs

*Signal fixtures shown above are for Selective collective operation (2BC). (Optional)
Note: Car operating panel is installed in Front return panel.

E-102.....FC-101-2U.....Finishes and Designs 2-panel upward opening





Door frame	Narrow Jamb with Painted steel sheet
Entrance Doors	Painted steel sheet
Entrance Sill	Checkered steel plate with black paint
Hall buttons	Indicator is incorporated in Hall button unit.
Car Ceiling	Painted steel sheet
Car Walls	Painted steel sheet
Car Doors	Expanded metal with painted finish
Flooring	Checkered steel plate with black paint
Lighting	LEDs

*Signal fixtures shown above are for Single automatic operation for freight (1BF). (Standard)

Operation System

Single automatic for freight (1BF) : Standard
Selective collective (2BC) : Optional

	Signal fixtures	Functions	Remarks
Hall position indicator	Direction arrow	Shows direction during operation.	
	Position indicator	Shows position of elevator.	
	IN-USE indicator	Shows elevator is in use.	Only 1BF
	Call button	Push to register call. Invalid while IN-USE indicator is illuminated.	Only 1BF
	Up call button	Push to go up.	Only 2BC
	Down call button	Push to go down.	Only 2BC
	Door close button	Close doors promptly for next user.	Only 1BF
Car operating panel	Direction arrow	Shows direction during operation.	
	Position indicator	Shows position of elevator.	
	Intercom	Enables contact with building superintendents.	
	Alarm button	Keep pushing in times of emergency to enable the elevator operator contact with outside.	
	Emergency stop switch	When pressed during an emergency, the elevator immediately stops.	
	Car button	Press for the destination floor.	
	Door open button	Press to re-open the doors when doors are closing.	
	Door close button	Keep pressing until the car starts with doors closed.	Only 2BC
	Swing door	There are switches inside for maintenance and administrative purposes.	
	Key hole	Turn the key to the left to open swing door.	

Single automatic for freight (1BF)



PIM-J10

CBM-J31

Selective collective (2BC)



PIM-C110

CBM-C111

Specifications

●: Standard ○: Optional

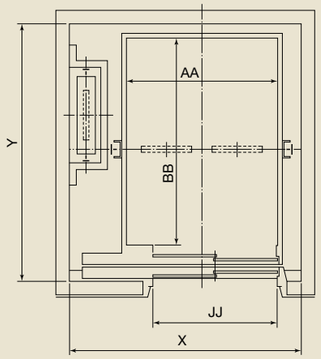
Item				Descriptions	Application
Appearance	Car	Walls and Transom Panel		Painted steel sheet	●
				Stainless steel hairline	○
		Doors	Panel Doors (Horizontal Sliding Doors)	Painted steel sheet	●
				Stainless steel hairline	○
			Steel Mesh Doors (Vertical Sliding Doors)	Expanded metal with painted finish	●
		Ceiling		Painted steel sheet	●
		Lighting		LEDs	●
		Ventilation		Diffuser fan	○
		Entrance Columns (Only Horizontal Sliding Doors)		Stainless steel hairline	●
		Car Wall Protectors		Stainless steel hairline	○
		Flooring		Checkered steel plate with black paint	●
		Sill	Capacity of 2000kg or less	Extruded hard aluminum	●
			Over 2000kg Capacity	Steel plate with black paint	●
			Vertical Sliding Doors	Same unit as car flooring	●
	Entrance	Door Frame	Narrow Jamb	Painted steel sheet	●
				Stainless steel hairline	○
			Splayed Jamb / Square Jamb	Painted steel sheet	○
				Stainless steel hairline	○
		Doors		Painted steel sheet	●
				Stainless steel hairline	○
		Sill	Capacity of 2000kg or less	Extruded hard aluminum	●
			Over 2000kg Capacity	Steel plate with black paint	●
			Vertical Sliding Doors	Checkered steel plate with black paint	●
Signals	Car Operating Panel		Faceplate	Stainless steel hairline	●
	Hall Position Indicator		Faceplate	Stainless steel hairline	●
Operational Features	Safety Door Edge (SDE)			The sensitive mechanical door edge detects the operator or goods upon contact during door closing.	●
	Safety Ray (SR)	Horizontal Sliding Doors	Car side	The infrared-light beam (one or two) covers the full width of the door as it opens or closes to detect the operator or goods.	○
		Vertical Sliding Doors	Car side		
			Entrance side	The infrared-light beam is installed in the door frame. The feature is the same as car side.	○
	Overload Holding Stops (OLH)			The elevator buzzer rings to indicate the car is overloaded.	●
	Automatic Door Closing (ADC) (Only 1BF)			The doors are automatically closed after a predetermined time (std. 1 min.) from full opening. The buzzer will continue to ring from 8 sec. before closure until the doors are fully closed.	○
	Extended Door-Open Button (DKO-TB) (Only 2BC)			This feature keeps the doors open for a predetermined period to facilitate loading and unloading of goods.	○

●: Standard ○: Optional

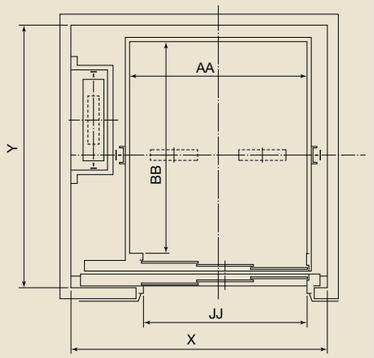
Item	Descriptions	Application
Operational Features	Inter Communication System (ITP)	A system which allows communication between passengers inside a car and the building personnel.	○
	Emergency Car Lighting (ECL-C) (Rechargeable Battery Type)	Car lighting which turns on immediately when power fails to provide a minimum level of lighting within the car.	○
	Car Fan Shut Off – Automatic (CFO-A)	If there are no calls for a specified period, the car ventilation fan will automatically be turned off to conserve energy.	○
	Car Light Shut Off – Automatic (CLO-A)	If there are no calls for a specified period, the car lighting will automatically shut off to conserve energy.	○
	Hall Out of Service Switch (HOS)	For maintenance or energy-saving measures, a car can be taken out of service temporarily with a key switch mounted in a specified hall.	○
	Wiring for BGM Speaker	Necessary wires are provided in the traveling cable. (Speaker: by owner)	○
	Mitsubishi Emergency Landing Device (MELD)	Upon power failure, a car equipped with this function automatically moves and stops at the nearest floor using a rechargeable battery, and the doors open to ensure passenger safety. (Max. allowable floor-to-floor distance is 10 meters.)	○
	Earthquake Emergency Return (EER-P / EER-S)	Upon activation of primary and/or secondary wave seismic sensors, all cars stop at the nearest floor, and park there with the doors open to facilitate safe evacuation of passengers.	○
	Fire Emergency Return (FER)	Upon activation of a key switch or a building's fire sensors, all calls are canceled, all cars immediately return to a specified evacuation floor and the doors open to ensure safe passenger evacuation.	○
	Operation by Emergency Power Source – Auto/Manual (OEPS)	Upon power failure, the car uses the building's emergency power supply to move to a specified floor, where the doors then open to facilitate the safe evacuation of passengers. After the car has arrived at the floor, normal operation will be available.	○
	Supervisory Panel (WP)	A panel installed in a building's supervisory room, etc., which monitors and controls each elevator's status and operations by remote, using indicators and switches which are provided on request.	○

Layout Drawings and Dimensions for One Gate (1D1G)
For JIS Code

Hoistway Plan for 2-panel side opening door (2S)

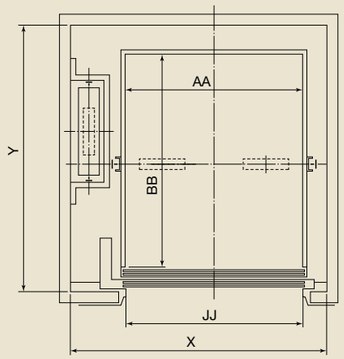


Hoistway Plan for 3-panel side opening door (3S)

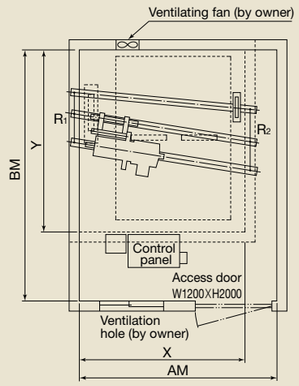


Hoistway Plan for 2-panel upward opening door (2U)

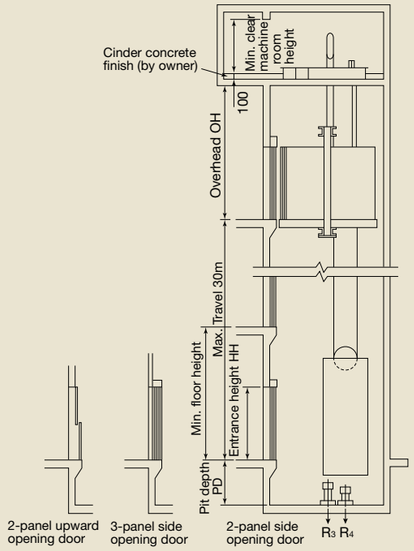
It can not be applied for EN-81-1 or GB code.



Machine Room Plan



Hoistway Section



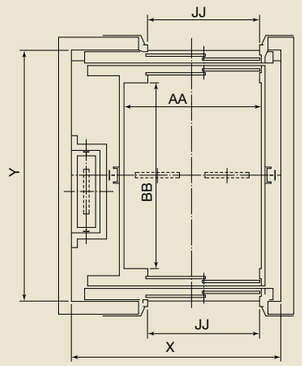
The following dimension is shown in Japan code.

Type	Capacity (kg)	Speed (m/min.)	Motor (kW)*1	Machine room (mm) AM×BM	Pit depth PD (mm)	Door type	Hoistway (mm) X×Y	Min. floor height (mm)	Overhead OH (mm)	Reaction loads (kN)*2 Machine room R1	Machine room R2	Pit R3	Pit R4
F-750-2S	750	45	7.5	2600 × 3950	1250	2S	2200 × 2900	2800	4450	44.6	36.7	70.6	55.4
		60	9.5		1550				4650			71.6	55.4
F-1000-2S	1000	45	7.5	3150 × 3950	1250	2S	2600 × 2900	2800	4450	74.6	43.1	80.4	66.2
		60	9.5		1550				4650			84.8	73.1
F-1500-2S	1500	45	9.5	3600 × 4050	1250	2S	3150 × 3000	2800	4450	101	53.9	119.6	82.4
		60	13		1550				4650			129.4	88.3
F-2000-2S	2000	45	13	3600 × 4250	1250	2S	3150 × 3400	2800	4450	121.6	63.7	139.2	103
		60	18.5		1550				4650			150	109.8
F-2500-3S	2500	45	18.5	4000 × 4400	1250	3S	3600 × 3700	3300	4850	148.1	81.4	192.2	144.2
		60	22		1550				5050			206	154
F-2500-2U*4		45	18.5	4000 × 4400	1250	2U	3600 × 3700	4500	4850	155.9	80.4	192.2	144.2
		60	22		1550				5050			206	154
F-2500-3U*4		45	18.5	4000 × 4400	1250	3U	3600 × 3700	3950	4850	155.9	80.4	192.2	144.2
		60	22		1550				5050			206	154
F-3000-3S	3000	45	18.5	4100 × 4800	1250	3S	3750 × 4100	3300	4850	166.7	92.2	208	154
		60	26		1800				5050			223	165
F-3000-2U*4		45	18.5	4100 × 4800	1250	2U	3750 × 4100	4500	4850	174.5	92.2	208	154
		60	26		1800				5050			223	165
F-3000-3U*4		45	18.5	4100 × 4800	1250	3U	3750 X 4100	3950	4850	174.5	92.2	208	154
		60	26		1800				5050			223	165

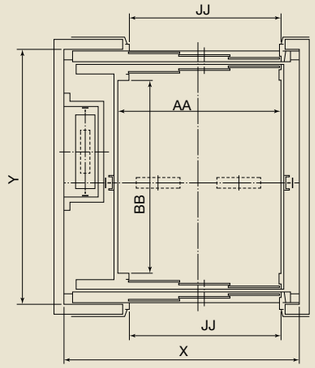
*1: Since required motor power varies according to the specifications, such as elevator cage weight, etc., please consult our sales agency for details.
*2: Since reaction load varies according to the specifications, please consult our sales agency for details.
*3: In cases where capacity exceeds 3000kg, please consult our sales agency for details.
*4: 2U, 3U door type can not be applied for EN-81-1 or GB code.

Layout Drawings and Dimensions for Two Gates (1D2G & 2D2G)
For JIS Code

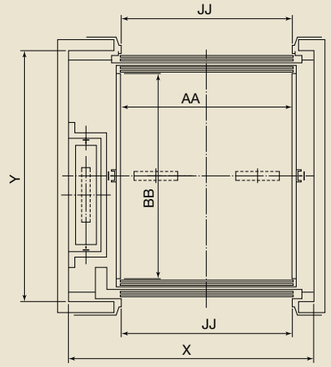
Hoistway Plan for 2-panel side opening door (2S)



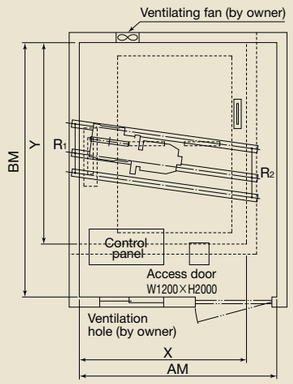
Hoistway Plan for 3-panel side opening door (3S)



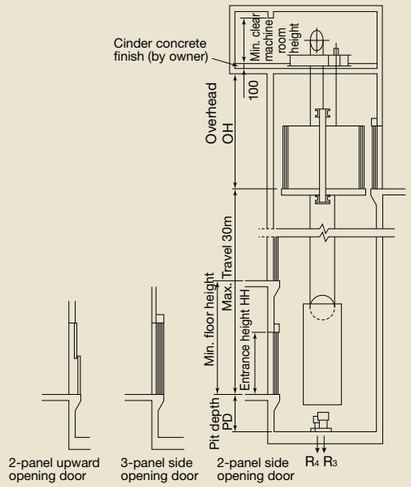
Hoistway Plan for 2-panel upward opening door (2U)



Machine Room Plan



Hoistway Section



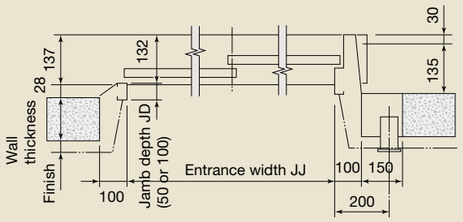
The following dimension is shown in Japan code.

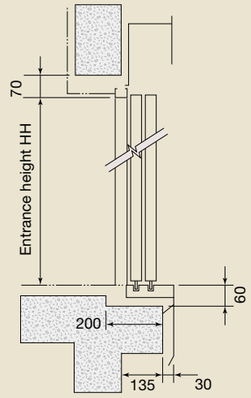
Type	Capacity (kg)	Speed (m/min.)	Motor (kW)*1	Machine room (mm) AM×BM	Pit depth PD (mm)	Door type	Hoistway (mm) X×Y	Min. floor height (mm)	Overhead OH (mm)	Reaction loads (kN)*2 Machine room R1	Machine room R2	Pit R3	Pit R4
F-750-2S	750	45	7.5	2600 × 3950	1250	2S	2200 × 3110	2800	4450	50.5	41.5	77.4	64.7
		60	9.5		1550				4650			78.5	69.6
F-1000-2S	1000	45	7.5	3150 × 3950	1250	2S	2600 × 3110	2800	4450	83.4	48	96.1	75.5
		60	9.5		1550				4650			104	80.4
F-1500-2S	1500	45	9.5	3600 × 4050	1250	2S	3150 × 3210	2800	4450	112.8	59.8	127.4	98
		60	13		1550				4650			137.2	106.8
F-2000-2S	2000	45	13	3600 × 4250	1250	2S	3150 × 3610	2800	4450	135.3	69.6	151	116.7
		60	18.5		1550				4650			162.8	125.5
F-2500-3S	2500	45	18.5	4000 × 4400	1250	3S	3600 × 3970	3300	4850	163.8	84.3	205	157
		60	22		1550				5050			219	168
F-2500-2U*4		45	18.5	4000 × 4400	1250	2U	3600 × 3680	4500	4850	166.7	89.3	205	157
		60	22		1550				5050			219	168
F-2500-3U*4		45	18.5	4000 × 4400	1250	3U	3600 × 4000	3950	4850	166.7	89.3	205	157
		60	22		1550				5050			219	168
F-3000-3S	3000	45	18.5	4100 × 4800	1250	3S	3750 × 4370	3300	4850	201	106.9	217.8	182.4
		60	26		1800				5050			233	195
F-3000-2U*4		45	18.5	4100 × 4800	1250	2U	3750 × 4080	4500	4850	206.9	110.8	217.8	162.8
		60	26		1800				5050			233	174
F-3000-3U*4		45	18.5	4100 × 4800	1250	3U	3750 X 4400	3950	4850	206.9	110.8	217.8	162.8
		60	26		1800				5050			233	174

*1: Since required motor power varies according to the specifications, such as elevator cage weight, etc., please consult our sales agency for details.
*2: Since reaction load varies according to the specifications, please consult our sales agency for details.
*3: In cases where capacity exceeds 3000kg, please consult our sales agency for details.
*4: 2U, 3U door type can not be applied for EN-81-1 or GB code.

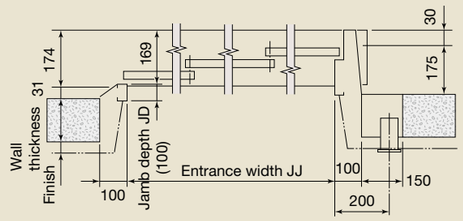
Entrance Layouts

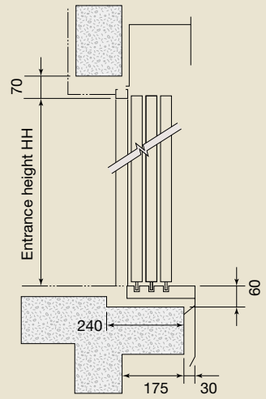
2-panel side opening door (2S)



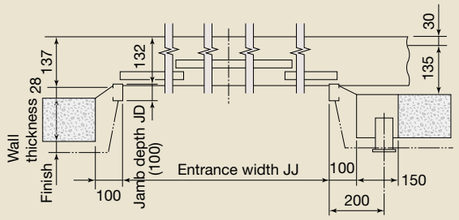


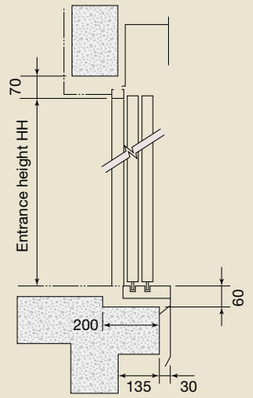
3-panel side opening door (3S)





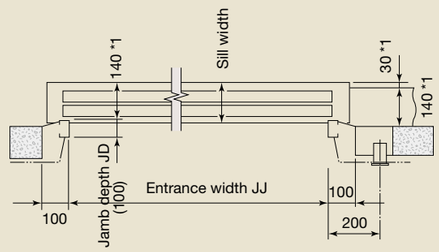
4-panel center opening door (2CO)

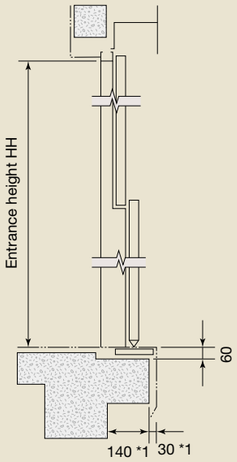




2-panel upward opening door (2U)

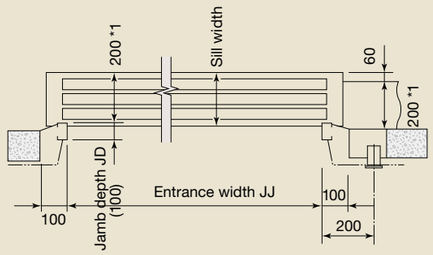
It can not be applied for EN-81-1 or GB code.

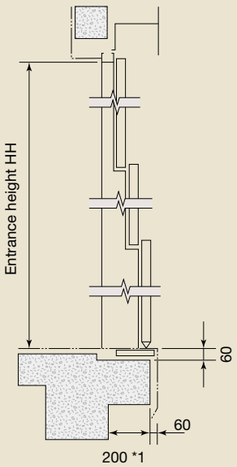




3-panel upward opening door (3U)

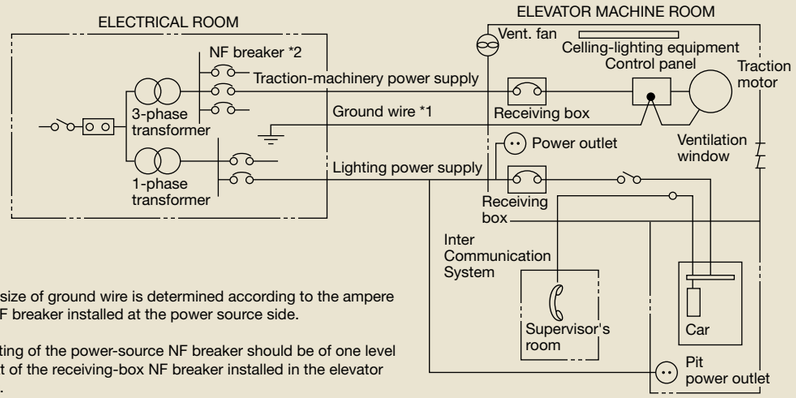
It can not be applied for EN-81-1 or GB code.





*1: Since dimensions for vertical sliding doors vary according to the entrance width, entrance height and floor height, please consult our sales agency for details.

Electrical Equipment Required for Elevator Operation



*1: The minimum size of ground wire is determined according to the ampere rating of the NF breaker installed at the power source side.

*2: The current rating of the power-source NF breaker should be of one level larger than that of the receiving-box NF breaker installed in the elevator machine room.

Traction-Machinery Power Supply

It is necessary to install power-supply equipment of sufficient capacity to ensure the elevators accelerating smoothly and landing accurately. The power supply should be kept within a voltage- fluctuation range of +5 ~ -10%, and a voltage-imbalance factor of 5%. When selecting protective breakers on the power-supply side, be guided by voltage ratings of the no-fuse breakers supplied with the elevators.

Power Supply for Lighting

Lighting for the elevator cars and indicators should, where possible, be supplied via a separate circuit that will not be affected by power failures elsewhere.

Ventilation Equipment

A machine-room ventilating fan of a capacity to keep the room below 40℃ is required. A ventilation window should also be installed opposite the ventilation fan.

Inter Communication System (where necessary)

This is essential for establishing communication between elevator operator or passengers and outside in case of emergency. The master station transceiver is usually in a location readily accessible to the supervisor, in the central supervisor's room or elevator lobby. The wiring work between the master station and the elevator machine room is not included in the elevator contract. To facilitate piping and wiring, it is desirable to decide on the position of the master station at the earliest stage of building design.

Lighting Equipment

The machine room should be fitted with good lighting for maintenance work. The light switch should be positioned close to the machine-room entrance.

Inspection Power Outlets

These should be installed in the machine room and pit for use during inspections and maintenance.

Power Feeder Data

Capacity (kg)	Speed (m/min.)	Motor (kW)	Power Feeder Data							
			Power supply (200V)			Power supply (400V)			Power supply capacity (kVA)	Heat emission (W)
			Current		Receiving box NF-breaker (A)	Current		Receiving box NF-breaker (A)		
			FLU (A)	FLAcc (A)		FLU (A)	FLAcc (A)			
750	45	7.5	30	69	50	15	35	30	7	1000
	60	9.5	38	89	60	19	45	30	8	1350
1000	45	7.5	32	64	50	16	32	30	7	1350
	60	9.5	41	84	75	21	42	40	9	1750
1500	45	9.5	45	87	75	23	44	40	10	2000
	60	13	57	114	100	29	57	50	12	2650
2000	45	13	57	110	100	29	55	50	12	2650
	60	18.5	73	143	125	37	72	60	15	3500
2500	45	18.5	73	147	125	37	74	60	15	3300
	60	22	93	191	150	47	96	75	19	4400
3000	45	18.5	77	157	125	39	79	60	17	3950
	60	26	98	205	150	49	103	75	22	5250

Work Not Included in Elevator Contract

The following items are excluded from our elevator installation work, and are therefore the responsibility of the building owner or general contractor:

- Construction of the elevator machine room with proper beams and slabs, equipped with a lock, complete with illumination, ventilation and waterproofing.
- Access to the elevator machine room sufficient to allow passage of the control panel and traction machine.
- Architectural finishing of the machine room floor, and the walls and floors in the vicinity of the entrance hall after installation has been completed.
- Construction of an illuminated, ventilated and waterproofed elevator hoistway.
- A ladder to the elevator pit.
- The provision of cutting the necessary openings and joists.
- Separate beams, when the hoistway dimensions markedly exceed the specifications, and intermediate beams when two or more elevators are installed.
- All other work related to building construction.
- The machine room power-receiving panel and the electrical wiring for illumination, plus the electrical wiring from the electrical room to the power-receiving panel.
- The laying of conduits and wiring between the elevator pit and the terminating point for the devices installed outside the hoistway,such as the emergency bell, intercom, monitoring and security devices, etc.
- The power consumed in installation work and test operations.
- All the necessary building materials for grouting in of brackets, bolts, etc.
- The test provision and subsequent alteration as required, and eventual removal of the scaffolding as required by the elevator contractor, and any other protection of the work as may be required during the process.
- The provision of a suitable, locked space for the storage of elevator equipment and tools during elevator installation.
- The security system, such as a card reader, connected to our elevator controller, when supplied by the building owner or general contractor.

* Work responsibilities in installation and construction shall be determined according to local laws. Please consult our local agents for details.

Elevator Site Requirements

- The temperature of the machine room and elevator hoistway shall be below 40°C.
- The following conditions are required for maintaining elevator performance.
  a. The relative humidity shall be below 90% on a monthly average and below 95% on a daily average.
  b. The machine room and the elevator hoistway shall be finished with mortar or other materials so as to prevent concrete dust.
- Voltage fluctuation shall be within a range of +5% to −10%.

Ordering Information

Please include the following information when ordering or requesting estimates:

- The desired number of units, speed and loading capacity.
- The number of stops or number of floors to be served.
- The total elevator travel and each floor-to-floor height.
- Operation system.
- Selected design and size of car.
- Entrance design.
- Signal equipment.
- A sketch of the part of the building where the elevators are to be installed.
- The voltage, number of phases, and frequency of the power source for the motor and lighting.



State-of-the-Art Factories…
For the Environment. For Product Quality.

Our elevators and escalators are currently operating in approximately 90 countries around the globe. Built placing priority on safety, our elevators, escalators and building system products are renowned for their excellent efficiency, energy savings and comfort.
The technologies and skills cultivated at the Inazawa Building Systems Works in Japan and 12 global manufacturing factories are utilized in a worldwide network that provides sales, installation and maintenance in support of maintaining and improving product quality.
As a means of contributing to the realization of a sustainable society, we consciously consider the environment in business operations, proactively work to realize a low-carbon, recycling-based society, and promote the preservation of biodiversity.

ISO9001/14001 certification

Mitsubishi Electric Building Solutions Corporation Inazawa Building Systems Works has acquired ISO 9001 certification from the International Organization for Standardization based on a review of quality management. The plant has also acquired environmental management system standard ISO 14001 certification.

ISO 9001
BUREAU VERITAS
Certification

ISO 14001
JACO
EC98J2017
UKAS MANAGEMENT SYSTEMS
0051

MITSUBISHI ELECTRIC BUILDING SOLUTIONS CORPORATION
HEAD OFFICE : TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
www.MitsubishiElectric.com/elevator

⚠ **Safety Tips:** Be sure to read the instruction manual fully before using this product.

MS

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