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# FREIGHT ELEVATOR





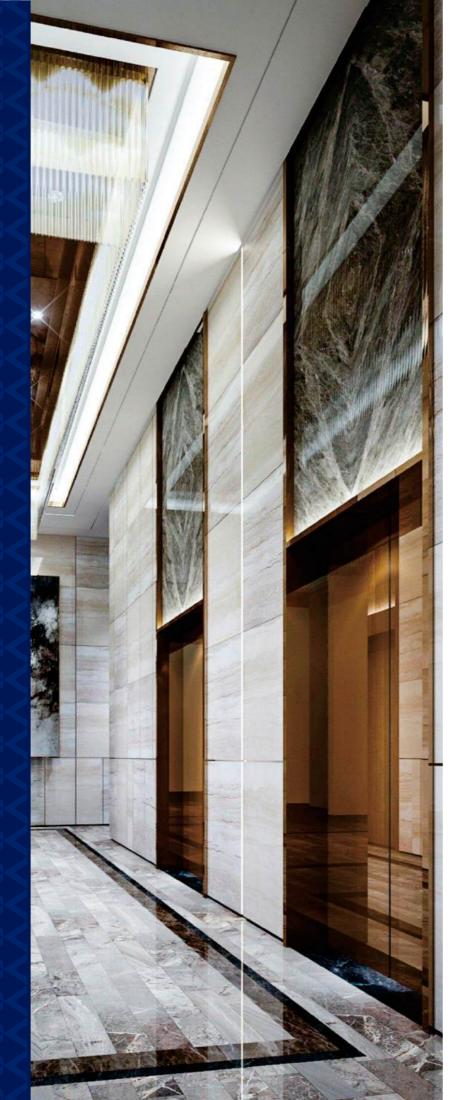
National Defence and Military



Science and Education First version, 2023

日本富士通エレベーター工業株式会社

Enhance value to benefit customers



Making management more convenient, keeping passangers more secure





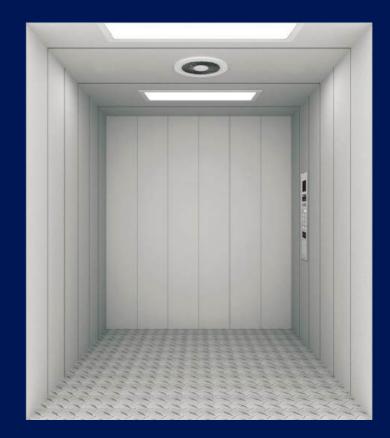


## Big power Large space

The freight and car elevators made by Fujithrough Elevator Industry Co., Ltd. of Japan are based upon the foundation of merit quality of the traditional elevators and combine perfectly the vector control pull motorwith the world advanced computer chips and the VVVF converter technique. Then the length, width and height can meet the requirements of all the fields.

Rated loading range (kg)





# Big Power Large Space

) width (CA)	depth (CB)	height (H)
1400~3500	1500~8000	H≥2200

Remark: The power capacity of the elevator ranges from 7.5kw to 25 kw, no matter the target of factories, stores, commercial halls, hotels, airport, parks or docks, the freight elevators of Fujithrough Elevator Industry Co., Ltd. of Japancan meet the requirements of varieties all-round-way.



## **Choose High Quality Steel** For A Super-Strong Structure

#### Light Curtain

Using infrared radiation as the detector reinforces the doors' anti-pinch system.



#### Chassis of Elevator Car

The use of high density thickened steel reinforcement makes the structure of the chassis of elevator car stronger and more firm.



Thickened Iron Sill

Integral formed thickened cast iron Planning and groove sills with high intensity meets the demand of delivery.





> Permanent Magnet Synchronous Traction Machine

Direct drive makes small volume and light weight; the transmission efficiency is 20%- 30% higher than worm gear traction machine; the noise is reduced by 5-10db(A); energy consumption is reduced by 45-60% compared with synchronous motor.



Choose High Quality Steel For A Super-strong Structure

#### > Smooth operation and long service life

Elevator car, car frame, traction system and guiding system, which are made of high-quality steel to build super strong structure, ensuring safety, reliability and durability, fully meeting the requirements of various delivery.



## Freight elevator series

Car Model >

CAR10 (Standard deployed)



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#### Technical Parameters

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Car height:	2200mm
> Ceiling:	Painted steel plate(Agate ash: RAL7047)
> Operating panel:	COB10
Call box:	CAB10
Push button:	PUB10
Car wall:	Painted steel plate(Agate ash: RAL7047)
Car front wall:	Painted steel plate(Agate ash: RAL7047)
Cardoor:	Painted steel plate(Agate ash: RAL7047)
Landing doors:	Painted steel plate(Agate ash: RAL7047)
> Floor:	Flowered steel plate

#### Technical specification table of 2:1 machine room freight elevator

Model	Rated Load	Speed	Power	Car Size	Door Opening	Door Opening Width	Hois	tway size	
Туре	Capacity	Speed	Ρ	$CA \times CB \times HH$	Opening Moded	IJ	WAXWB	DH	KH
	Kg	m/s	KW	mm		mm	mm	mm	mm
FHA	1000	0.5	7.5	1400 × 1600 × 2200	Side opening double folded bi-pass	1200 × 2100	2350 × 2200	4300	1500

Note:

1. The above hoistway dimension is the minimum dimension; interior clear dimension 2. DH & KH is the minimum dimension.

## Technical specification table of 4:1 machine room freight elevator

Rated Load Speed Power Car Size Model 1600x2000x2200 FHA 1500 0.5/1.0 5.4/10.8 1600x2000x2200 1800 × 2200 × 2200 1800x2200x2200 FHA 2000 0.5/1.0 6.7/13.4 1800x2100x2200 1900x2100x2200 2000 × 2800 × 2200  $2000 \times 2800 \times 2200$ 0.5/1.0 10.1/20.4 FHA 3000 2000 × 2700 × 2200 2000 × 2600 × 2200 2500x3500x2200 2500x3500x2200 0.5/1.0 15.9/31.7 5000 FHA 2500x3400x2200 2500x3400x2200

Note:

1. The above hoistway dimension is the minimum dimension; interior clear dimension 2. DH & KH is the minimum dimension.

Door Opening	Door Opening Width	Hois	tway size	
Side opening double folded bi-pass	1300x2100	2600x2600	4300	1500
Side opening double folded(bi-pass)	1300x2100	2850x2600	4300	1500
Medium separated double folded	1500 × 2100	2800x2800	4300	1500
Medium separated double folded	1600x2100	2900x2800	4300	1500
Medium separated double folded(bi-pass)	1600x2100	3050x2800	4300	1500
Medium separated double folded	1600x2100	2900x2800	4300	1500
Medium separated double folded	2000 × 2100	3500 × 3300	4300	1600
Medium separated double folded(bi-pass)	2000 × 2100	3500 × 3350	4300	1600
Medium separated double folded	1800 × 2100	3350x3300	4300	1600
Medium separated double folded(bi-pass)	1800 × 2100	3350x3300	4300	1600
Medium separated double folded	2500x2100	4200x4000	4300	1700
Medium separated double folded(bi-pass)	2500x2100	4200x4050	4300	1700
Medium separated double folded	2400x2100	4200x4000	4300	1700
Medium separated double folded(bi-pass)	2400x2100	4200x4100	4300	1700

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# Technical specification table of 6:1 machine room freight elevator

Model	Rated Load	Speed	Power	Car Size	Door Opening	Door Opening Width	Hois	tway size	
				3000x4400x2200	Medium separated double folded	2800x2100	4900x5000	4300	1800
FHA	8000	0.5	31.7	3000x4300x2200	Medium separated double folded(bi-pass)	2800x2100	4900x5000	4300	1800
FNA	8000	0.5	51.7	3000x4500x2200	Medium separated double folded	3000x2100	5000×5000	4300	1800
				3000x4400x2200	Medium separated double folded(bi-pass)	3000x2100	5000x5000	4300	1800
				3000x5500x2200	Medium separated double folded	2800x2100	4900x6100	4300	1800
FHA	10000	0.5	31.7	3000x5400x2200	Medium separated double folded(bi-pass)	2800x2100	4900x6100	4300	1800
ШA	10000	0.5	51.7	3000x5600x2200	Medium separated double folded	3000x2100	5000x6100	4300	1800
				3000x5500x2200	Medium separated double folded(bi-pass)	3000x2100	5000x6100	4300	1800

Note:

1. The above hoistway dimension is the minimum dimension; interior clear dimension

2. DH & KH is the minimum dimension.

#### Technical specification table of 4:1 machine roomless freight elevator

Model	Rated Load	Speed	Power	Car Size	Door Opening	Door Opening Width	Hois	stway size	
FHW	1500	0.5/1.0	5.4/10.8	1600x2000x2200	Side opening double folded bi-pass	1300x2100	2900x2600	5000	1500
11100	1500	0.5/1.0	5.4/10.0	1600x1900x2200	Side opening double folded(bi-pass)	1300x2100	2900x2600	5000	1500
				1800 × 2200 × 2200	Side opening double folded bi-pass	1600x2100	3100x2800	5000	1500
FHW	2000	0.5/1.0	6.7/13.4	1800 × 2100 × 2200	Side opening double folded(bi-pass)	1600 × 2100	3100 × 2800	5000	1500
				1900 × 2100 × 2200	Side opening double folded bi-pass	1600 × 2100	3200 × 2800	5000	1500
				2000 × 2800 × 2200	Medium separated double folded	2000 × 2100	3500 × 3300	5000	1600
<b>E11)</b> 4/	3000	00 0.5/1.0	10.1/20.4	2000 × 2800 × 2200	Medium separated double folded(bi-pass)	2000 × 2100	3500 × 3350	5000	1600
FHW				2000 × 2700 × 2200	Medium separated double folded	1800 × 2100	3350x3300	5000	1600
				2000 × 2600 × 2200	Medium separated double folded(bi-pass)	1800 × 2100	3350x3300	5000	1600

Note:

1. The above hoistway dimension is the minimum dimension; interior clear dimension

2. DH & KH is the minimum dimension.





## Large Tonnage Freight Elevator

## Features of elevators

The large tonnage freight elevator fully applied the Japanese manufacturing technology which has developed for many years. The development of highly mature frequency conversion, transformer, speed control technology avoids noise and car jitter, so that the goods can be delivered more safely and reliably. The application of the new data network system makes each floor of the freight elevator and the car controlled by the chip and connected by the serial transmission line, reducing the connection between the components greatly, so that the system is controlled more accurately and efficiently.

### Four characteristics

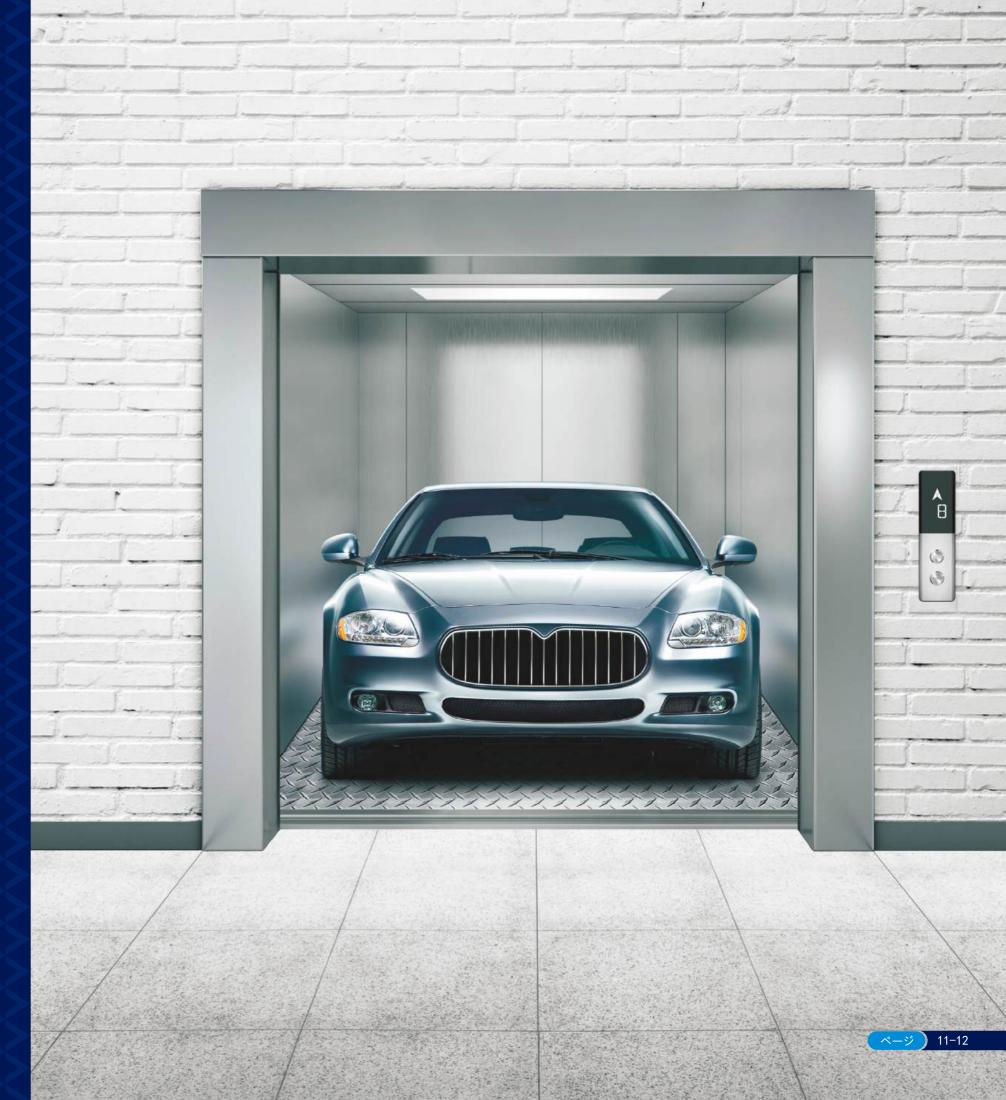
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The door opening width conforms with the car size, which makes the goods delivered more easily.

Special circuit control and display system are operated conveniently not only in the car but also out of the car while waiting.

The floor of the car is equipped with a safety guide device to ensure the safety of the elevator and goods.

High intensity car frame is built by improved 4:1 winding method, making traction center move safely, stably and smoothly.



## Freight Elevator

#### Menu

Number	Routine operation function	Standard function description
01	Full-integrated selected operation function	Auto operational or driving condition, when the elevator is on operation, it can echo the flash call simultaneously the call of upstairs. Any passenger can call the elevator by registration on any floor.
02	Door opening time setting	The system can confirm the order of door opening time of call opening, instruction opening, protective opening and prolonged opening automatically by setting time
03	Door keeping-opening function	In automatic operation condition, press the keep-opening button in the elevator car, the door will be prolonged closed, meeting the requirement of freight transportation.
04	Setting of door service floors	The system can select accordingly to the needs of various selected floors.
05	Close the door ahead of time by pressing the close button	In auto operation and when the door is opened, one can press the close button to close the door to rise the efficiency
06	Setting of floors displaying	The system allows random setting display with digits or letter to each floor, to meet the need of special usage.
07	Isolated control function to the front and rear doors	When the door remains closing for a time, if the lock is not working, the elevator will open automatically and then closes repeatedly.
08	Repeated door closing function	When setting the main and auxiliary main panel, the switches can be controlled independently according to the instructions in auto operation.
09	Instruction independent function	When setting the main and auxiliary main panel, the switches can be controlled independently according to the instructions in auto operation.
10	Car stop in accelerating condition	The system allows stop in acceleration condition, reacting the instruction from service floor automatically.
11	Lower-integrated control operation functions	In auto or driving condition, when the elevator in process of operation, at the same time to echo the internal order, the elevator only echoes the downstairs call of outside hall
12	Base return function in spare time	In auto operation condition, in case that there is no internal and floor call order available in set time, the elevator will return to the set station to wait for the passenger.
13	Changeable stop function	When the elevator door opening passes the opening protective timing, the door opening signal remains effective, it will shift automatically to closing door condition and it will be registered to operate to the next stop after the door is closed,reminding E55 accident.
14	Enforced door closing function	When turning on the function of enforced door closing, when the door cannot be closed since the light screen or safety touch plate's function, the elevator will enter the condition of enforced door closing, close the door in lower speed and produce a reminding sound.
15	Function of deleting the mistaken order	A passenger can delete his mistaken order by pressing twice the order button.
16	Setting the service floor	The system can select close or activate one or more service floors by selecting the relevant button.
17	Floor selecting function	The system can select service time phrases or corresponding served floors flexibly, or select the served floor through service floor shifting.
18	Isolated operation	The elevator does not replies the outside call with manual closing door. It will operate isolated when departing from the group-control in group control condition.
19	Driver operation	When enter the condition of diver operation, the elevator will be operated by the driving of the driver
20	Low-speed self-rescue function	When the elevator is in non-maintenance condition, as well stop at the ground floor. It will operate in lower speed to the ground floor and opens the door in case of meeting the safety requirement.
21	Selecting function of the door control	The system can set flexibly the modes whether to go on outputting orders of door positioned, door closing positioned according to the different categories of door machines.

#### Menu

Number	Routine operation function	
22	Button adhesion checkup	The system can reco automatically remov outside call button
23	Start auto-compensation to torque	When the elevator is car load to reach a sr
24	Direct stop	Taking the distance a curve, and stops at t
25	Auto-formed to the best curve	Taking the distance a machine principle, w
26	Temporary no-service output function	When the elevator ca
27	Operation number record	The elevator can rec
28	Operation time record	The elevator can rec
29	Auto door opening in case of mistaken door lock	In the process of doo automatically and re
30	VIP service function	Run directly to the fl
31	Merit availability to special need	When the elevator h arrangement of mer
32	Over-load protective function	An alarm signal will l available.
33	Accidence datum record	The system can reco
34	Tune to motor parameters	The system can com simple setting to the
35	Intelligent correction to the floor position	When the elevator ru information accordi forced braking syste
36	Two-phases speed maintenance function	In order to coordina long operation time large scale the opera
37	Test operation	Test operation inclue forbidden echo, doo overload signal and

_	Number	Maintenance related functions	
1			
	38	Simple maintenance keyboard	The maintenance pers keyboards on the con
	39	Debug in the controlling room	The debuggers can co and improve the debu
	40	Self-study function by parallel track	Before the first operat When the elevator rur the signals of the posi
	41	User's checkup setting	The user can find out function
	42	Checkup and maintenance to operation	When the system ente door operation, press maintenance speed.

#### Standard function description

ognize the adhesion condition of the buttons in the outside hall, and ove the call of the adhesion to avoid the non-operable condition due to the

is operating, it will automatically start the compensation according to the elevator smooth start condition, rising a comfortable sense of taking.

e as the principle, it will produce a auto calculation in forming an operational the ground floor without lift.

e as the principle, the elevator can calculate a speed curve best fitting the human, without limit to the number and the short floors.

cannot echo to the outside hall call, the outlet can display a no service signal.

cord automatically to the times of operation of it in auto operation condition.

cord automatically to the times of operation of it in auto operation condition.

oor opening, when it finds the door lock mistake, it will open and close the door remind a accidence signal after the execution of door opening and closing

floor of VIP in advance, serve the special guest with VIP service.

has a call special from a special floor, which will be set to be special stop, and an erit availability will be set.

I be produced in case of overload to the elevator and no more operation is

ord the accidence automatically in detail, rising the efficiency of maintenance.

nplete the learning to control parameters to the motor under load or unload by ne parameters

runs to the terminal, the system will inspect and correct the car position ding to the first class forced braking switch at the same time cooperates with the tem to destroy the medium ceiling and bottom knocking.

ate with the inaccurate control and high speed in countenance and low speed and e, the system realizes two-phase speed curve function in maintenance, rising in rational efficiency in maintenance.

udes operational direction of fatigue test operation, inner call floor test, out call or opening and closing forbidden, shielding end station limit switch, shielding d so on.

#### Standard function description

erson can realize the operation floors, door opening etc. by operating three small ontrol panel.

connect the system in the car through the handheld operator, debug the elevator, bugging efficiency.

ration of the system, it is necessary to study the parallel connection parameters. un in maintenance speed from the ground floor to the top floor, it will record all ositions automatically in operation.

at the different parameters differed from the out-factory parameters by using this

nters a maintenance condition, it will automatically delete the auto-operation and essing the up and down buttons can start the elevator in mode of point move in I.

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#### Menu

Number	Fire control and safety functions	Standard function description
43	Fire-fighting emergency landing function	After receiving a signal of fire alarm, the elevator will not echo to the call signal and return to the fire- fighting station and wait there for start order.
44	Firefighter operation	When entering a fire-fighter condition, no auto door operation is available, Only by pressing the button to operate the elevator in point-move (optional) or door opening and closing. The elevator only echoes the order from the cabinet and registers only one order.
45	Safety guard floor function	When the safe guard function is started, it is available from 10:00bp.m. to 6:00 a.m. next morning. The elevator will operate to the safe guard floor and stops, opening the door and then run to the aimed floor, rising the safety level.
46	Elevator locking function	In auto-operation condition, when the elevator locking moves or locking time is up, the elevator will delete all the call signals and return to the locking station, stops the operation and turns off the light and fan in the elevator car.
47	Classified dealing to accidents	The system will classify the grades of accidents by their influence, it has different dealing to the different accidents, rising the operation efficiency level.
48	Flying cabinet proof function	The elevator will monitoring the operation speed. If the overspeed phenomenon occurs, stop running immediately and brake the elevator.
49	Auto-recognition to power-off	The system can recognize power-off condition and output a shift rescue replay to realize the emergency rescue to the power-off.
50	Auto-shift to power-off operation	When the syncro motors are working and the power supply is off, the system can auto shift between auto slide and driver operation , realizing a smooth and swift self-rescue.
51	Recognition to power-off operation direction	When the power is off, the system can recognize the load of the elevator car automatically.
52	Checkup of the stations	When the system finds the abnormal of the position of the elevator, it will run to the various floors with checkup and confirmation, to ensure the safety of the system.
53	Passenger release in merit function	The integrated control system can classify the accident to grades automatically to meet the requirement of safety, release the passengers in merit when returning to the ground floor.
54	Interference appreciation function	Appreciate the communication signals interference, reflecting the degree of the current interference
55	Earthquake function	When the earthquake inspection device acts, the signal will input into the system, the .stop nearby and recovers to normal operation after the earthquake signal disappears by a manual recovery.
56	Electric current slope delete	In the applying site of permanent magnetic syncro motor, when the elevator lower its speed and stops, the remain current of the motors is deleted by means of a slope current, avoiding the abnormal turmoil of the motor in the process.
57	Function of the independent working power supply	NICE 3000 NEW integrated control system not only support the 3 phase power supply, it also supports the 220Vac power supply, with which it the different power supply issuance (e.g. 220V UPS emergency rescue)
58	Current auto recognition	By checking the volume of the mother cable voltage, the system adjusts the elevator speed automatically to adapt the issuance of uneven power supply(such as UPS emergency supply operation)

Number	Energy saving function	Standard function description
59	Energy-saving function of the elevator car	When passing the set time without having a new call, the system will cut off power supply of the light and fan in the elevator car.
60	Energy-saving operation with the standby power source	When the normal power source is off and the elevator is shifted to an emergency power supply, when this function is selected, the system will reduce the operating speed upon a basis of smooth operation. Curve,
61	Energy-saving to the spare door machine	The elevator system will produce continuously instruction to close the door, reducing the power consumption of the door machine.

#### Menu

Number	Parallel operation function	
62	Scattered elevator waiting	In parallel connection, the
63	Departure from parallel connection	In group control system, whe group control timing, it will o operation of the group contr
64	Auto retreat to the parallel connection	In the parallel connection the group control and ope control.
65	Turbulence proof	The system will arbiter aut there are numerous regist all the orders, the order w
66	Reminding function to stop at the non-door position	The system will remind the
67	Full load reminding	The out call will display fu
68	Copy the parameters	Upload and download car

Optional configuration

Number	Optional configuration	
69	Ground floor minor motion function	When the elevator stops at door threshold will bring ine run in condition of opening
70	Auxiliary function of site adjustment	NICE series elevators are elevators, matching NEN
71	District monitoring function	We can connect the con Check the the elevator fl software and accessorie
72	Remote monitoring function	We can connect the cont operation direction and a
73	IC card function	The passenger must hole for the passengers.
74	Operation restoration function	With the LED operation of the last set
75	Station report function	The elevator has functio
76	Parallel connection operation	Parallel connection open the various needs of the
77	Group control dispatching and operation	Numerous elevators can mode to echo the outsid
78	I/O expanding function outside hall	In condition of shortage with HCB-B.
79	I/O expanding function in the elevator car	In condition of shortage B
80	Disables service function	When the elevator is wai opening time will be lon door will open for a long
81	Forecast light to the outside hall arrival	When the elevator will a MCTC-HCB-B)
82	Outside hall arrival bell	When the elevator arrive B) (attach MCTC-HCB-B)
83	Function of operating the cabinet	At the same time of havi panel has the same func

#### Standard function description

he various elevators will wait at various floors for service.

rhen an elevator retreats the group control system and no effective signal is available or in Il operate in isolated mode when retreating the group control, which will not affect the ntrol.

on, when an elevator cannot echo the call timely by some reason, it will depart from perate in isolated mode , which will not affect the normal operation of the group

utomatically the number of the passengers in the car as well the registrations. If istrations, the system will arbiter it as "turbulence making" condition and will delete will need new registration.

he non-door area condition when it stops at the position automatically.

full-load state when in full-load condition and will run directly to the in call floor.

an be done by holding a manual LED operator to the integrated controller.

#### Standard function description

at some floor the change of load will make minor motion of semi flooring, the unevenness of the incontinence to either the passengers or unloading the goods. By this time, the system allows ng the door in speed of ground floor to the ground floor position, attaching MCTC-SCB.

re adjustable with NEMS software, realizing all the operation and monitoring to the EMS tuning software.

ntrol system with the terminal fixed in the control room. With the NEMS software floor position, operation direction, accident condition etc..matching the NEMS

ntrol system with the terminal fixed in the control room, check the floor position, d accident condition with NEMS software, attaching MCIC-MIB.

old an IC card to arrive at the authorized floor through the elevator. Arrange IC card

n controller, we can set the parameters to restore the function of the elevator, that is tting of operation. Arrange LED controller for the personnel.

on to report the operation direction and arriving floor to the passengers.

eration to two elevators is available. Numerous adjust algorithm is available to meet e passenger.

In have datum communication and calculate the most effective and swift operation ide hall calls (attach MCTC-GCB-A)

ge of outlets and inlets to the outside halls, function expanding can be done

ge of outlets and inlets to the elevator car, function expanding can be done with HCB-

vaiting at the ground floor, if there is a registration order by disables, the door onger, at the same time when the door opens and if there is an order by disables, the nger time.

arrive at the aimed floor, an arrival signal will be output to outside hall (attach

ves at the aimed floor, an arrival bell outside hall will be output.(attach MCTC-HCB-B)

ving the man control panel, an auxiliary control panel can be selected. The auxiliary ction to the main control panel.

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# Machine Roomless Freight Elevator

## Save space

The main engine only needs to be placed above the well between the car and the counterweight to maximize the use of the well space, save building materials and reduce construction costs.

## Smooth running

The overall structure and the sedan frame is firm. Excellent 4:1-bottom support winding method is used to ensure traction center move safely, stably and smoothly.





## Save energy and protect environment

Thanks to the efficient frequency conversion drive technology and permanent magnet synchronous host, the operation energy consumption can be saved by up to 30% compared with the traditional technology.

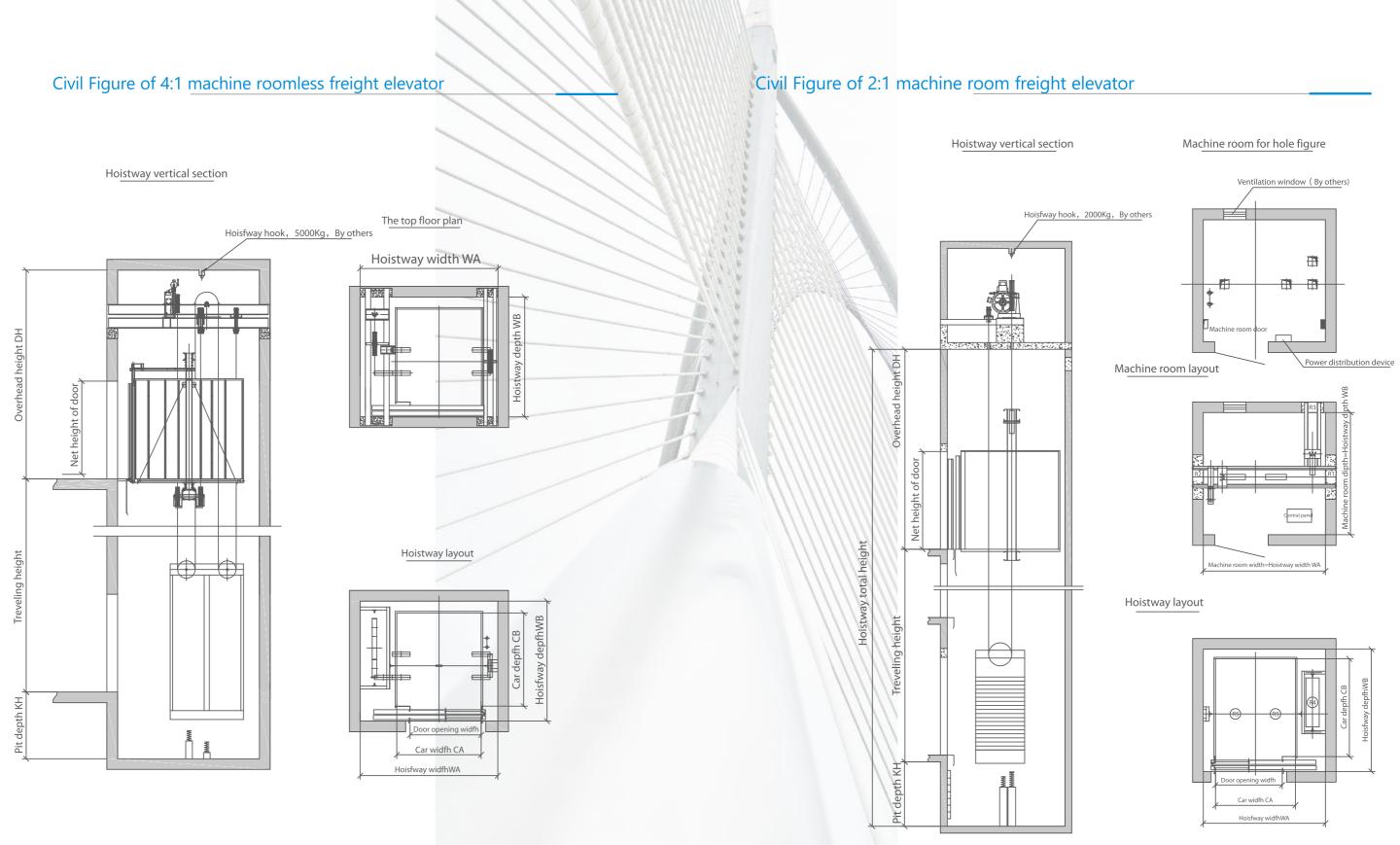
General freight elevator machine room

Machine roomless elevator





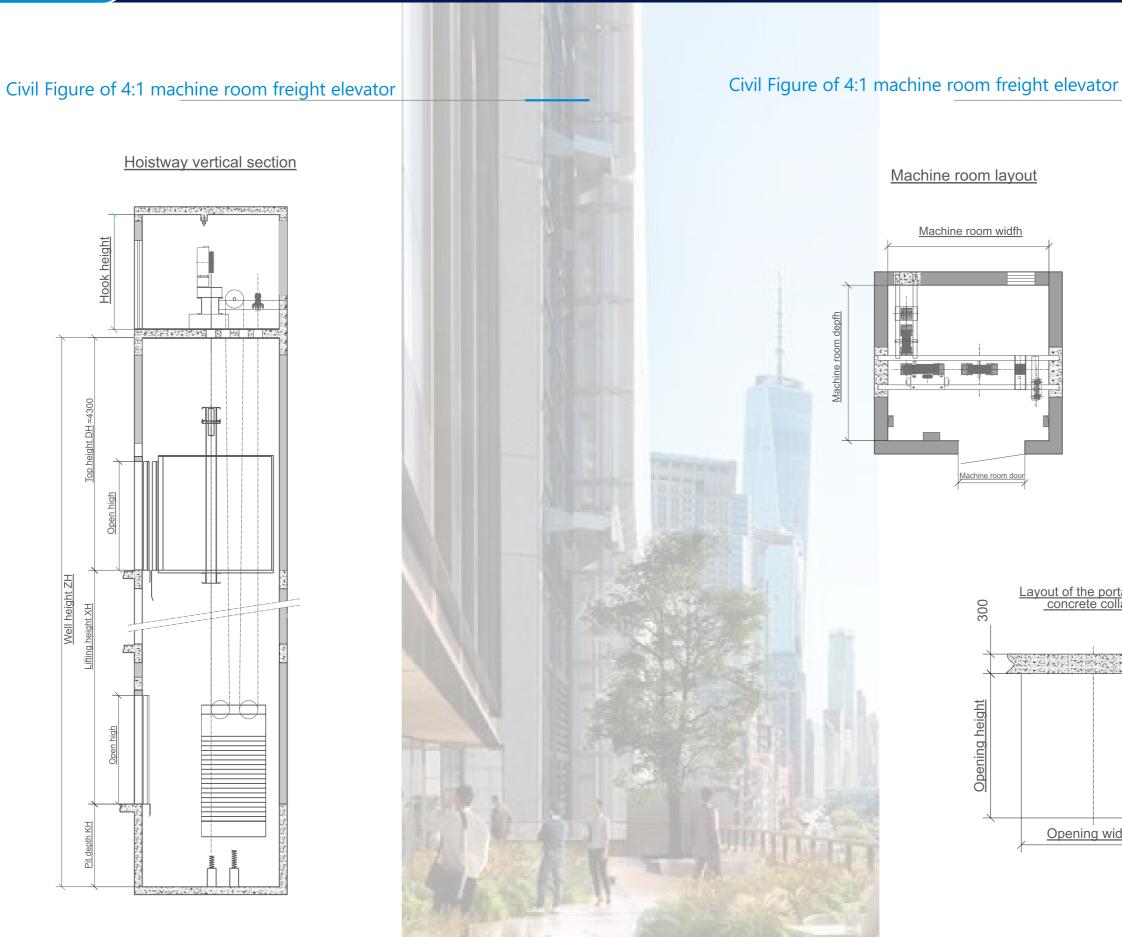
## Freight Elevator



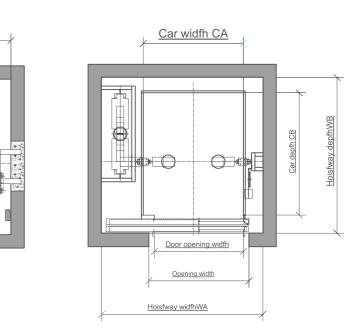
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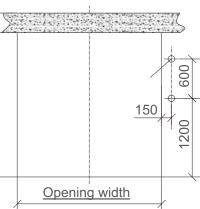
## Freight Elevator



#### Hoistway layout



## Layout of the portal hole concrete collar



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