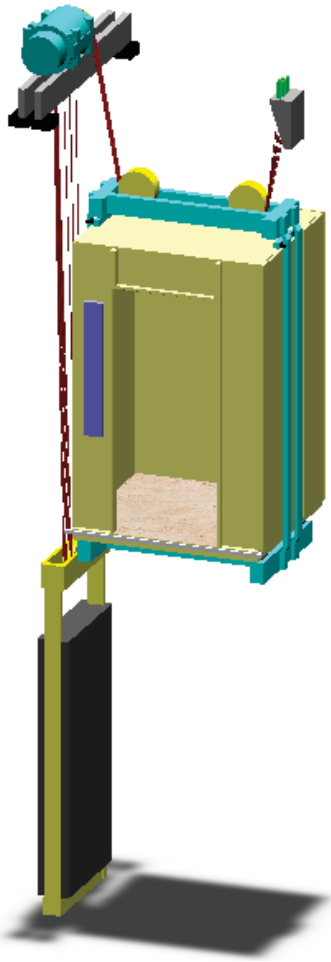
MRL Field Installation Manual



Prepared By:	Checked By:	Approved By:	
Jie Xu	Haiyan Wang	Jian Yang	

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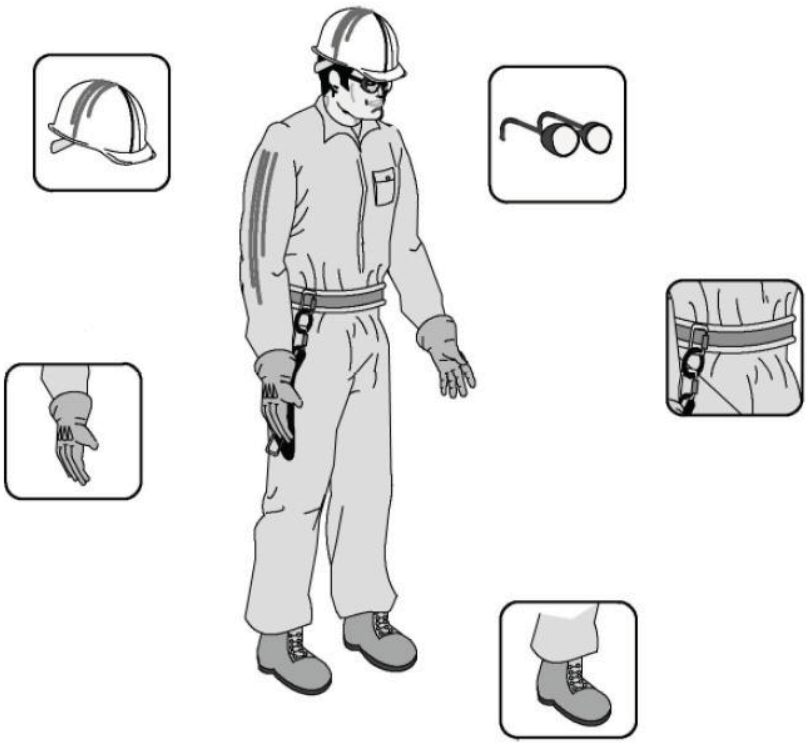
1 Safety rules

All field staff is under an obligation to keep below rules:

1) Keep work place cleanly;
2) There shall have sufficient light at work place;
3) The safety device shall be maintained regularly or replaced if necessary;
4) The lifting equipment must be examined before put in to use;
5) Carry a heavy load we must maintain the correct posture in order to avoid bodily injury;
6) Make sure the machine room door locked;
7) All field staff must wear personal protective products: helmet, goggles, safety gloves, overalls, safety belt, safety shoes;



2 Storage and transport

2.1 Storage

The packing boxes must be stacked at cleanly, dry place and with awning at jobsite. Pay attention there is no combustibles around packing boxes, oxygen cutting or any other incendive job was interdicted.

All the packing boxes shall be stacked on thick plank, make sure the water on floor can't damp the boxes.

The packing boxes shall not stack at heavy traffic area. All the packing boxes shall be covered by canvas and fastened by rope to avoid blow away. Security is necessary to insure all the material not be stole or damaged.

The packing boxes shall not be stacked too high. The heavier boxes shall be stacked below the light boxes. Anything stack on guide rail is interdicted.

The packing boxes shall be ordered stacked according the installation process. The packing boxes for same elevator shall be stacked separated and do not fixed with other elevator.

The elevator material stored at outside is not allowed anytime!

2.2 Transport

Please very carefully when transport elevator material at jobsite, make sure there is no damage on elevator material.

Use mechanical device to pull the elevator material is not allowed, especially guide rail. The appropriate device shall be used to transport cumbersome material.

Always comply with safety rules of lifting. The inexperience worker must be under guidance by specialize worker for the lifting work.

Only the lifting device with regular maintenance can be use for lifting.

3 Preparation before installation

The preparation of Project engineers and project supervisors：

Before installation, project engineers or project supervisors will carefully check and measure the installation field according to the construction drawing, which includes the check or the measuring of the landing numbers, the height of the top floor, the depth of the pit, the height of the elevators (or lifts) as well as the dimension and verticality of the rail well. They will also check whether the preformed hole of the hall doorway, the embedded part of the rail well as well as the preformed hole site in the machine room and the like are in consistency with the drawings or not. Afterwards, they will make an attentive analysis and research on the construction field so as to ensure a smooth installation of the elevators (or lifts).

Project engineers and project supervisors should have the knowledge about the power supply in actual use, the power supply for temporary use during the installation and the illumination so that they are able to work out a plan about the layout of the electrical equipment, the power supply for temporary use as well as the field illumination and afterwards timely come into contact with party A for help.

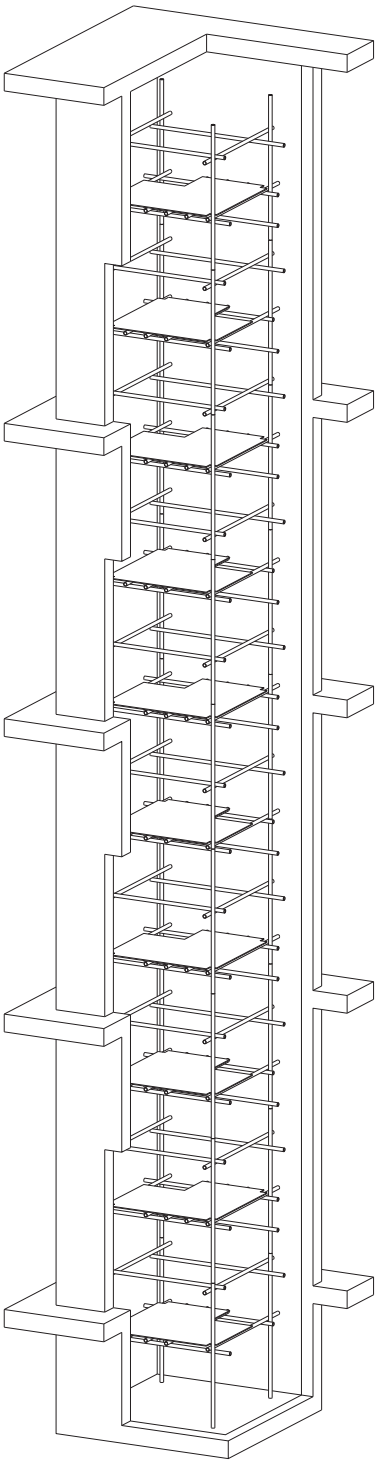
In light of the actual situation, project engineers should work out an installation plan and work assignments for all the departments engaged in the construction work.

The preparation of installation workers：

The installation personnel should be equipped with the basic knowledge about the type, specification as well as the properties of elevators (or lifts) and should also be familiar with installation diagrams, electrical diagrams and wire diagrams.

3.1 Set up scaffold

Scaffold overview:



Step	Instruction	Fig
1	Define the scaffold position in hoistway.	Figure 3-1 Figure 3-2
2	Install scaffold from bottom to top.	Figure 3-3
3	Detailed description of working platform.	Figure 3-4

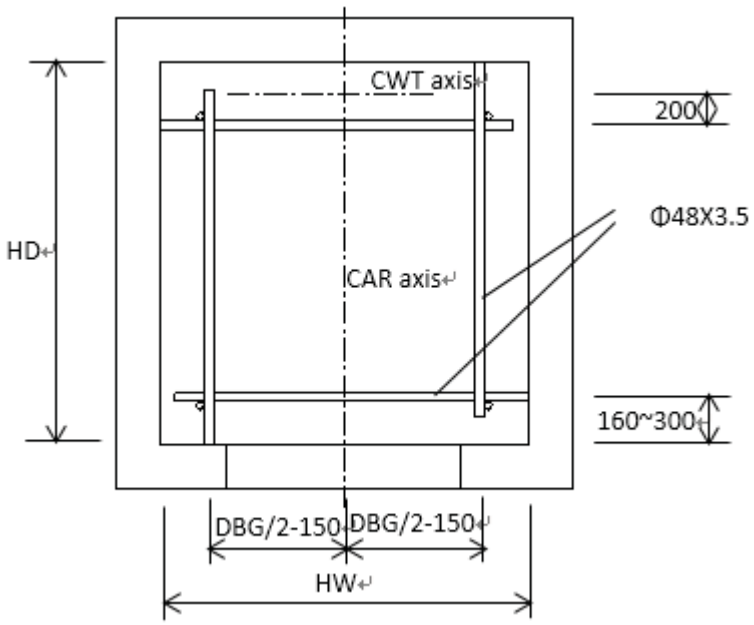


Figure 3-1 (Rear Counterweight)

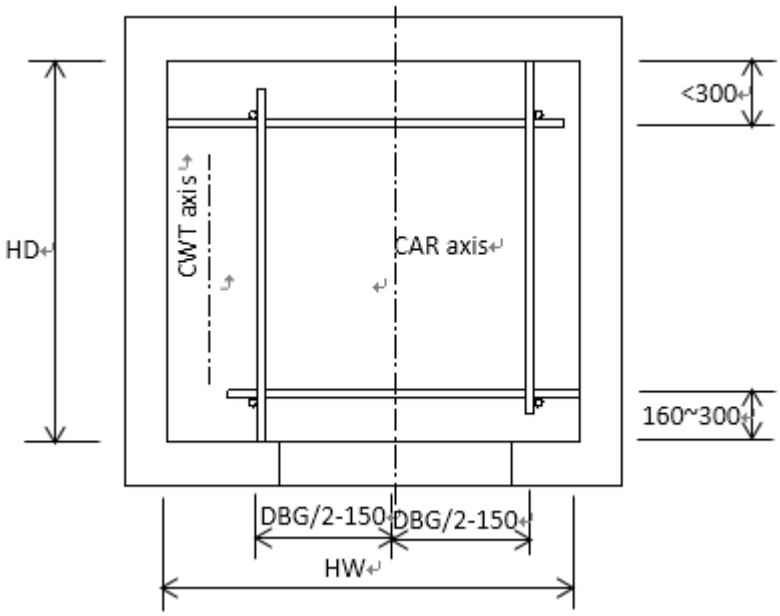


Figure 3-2 (Side Counterweight)

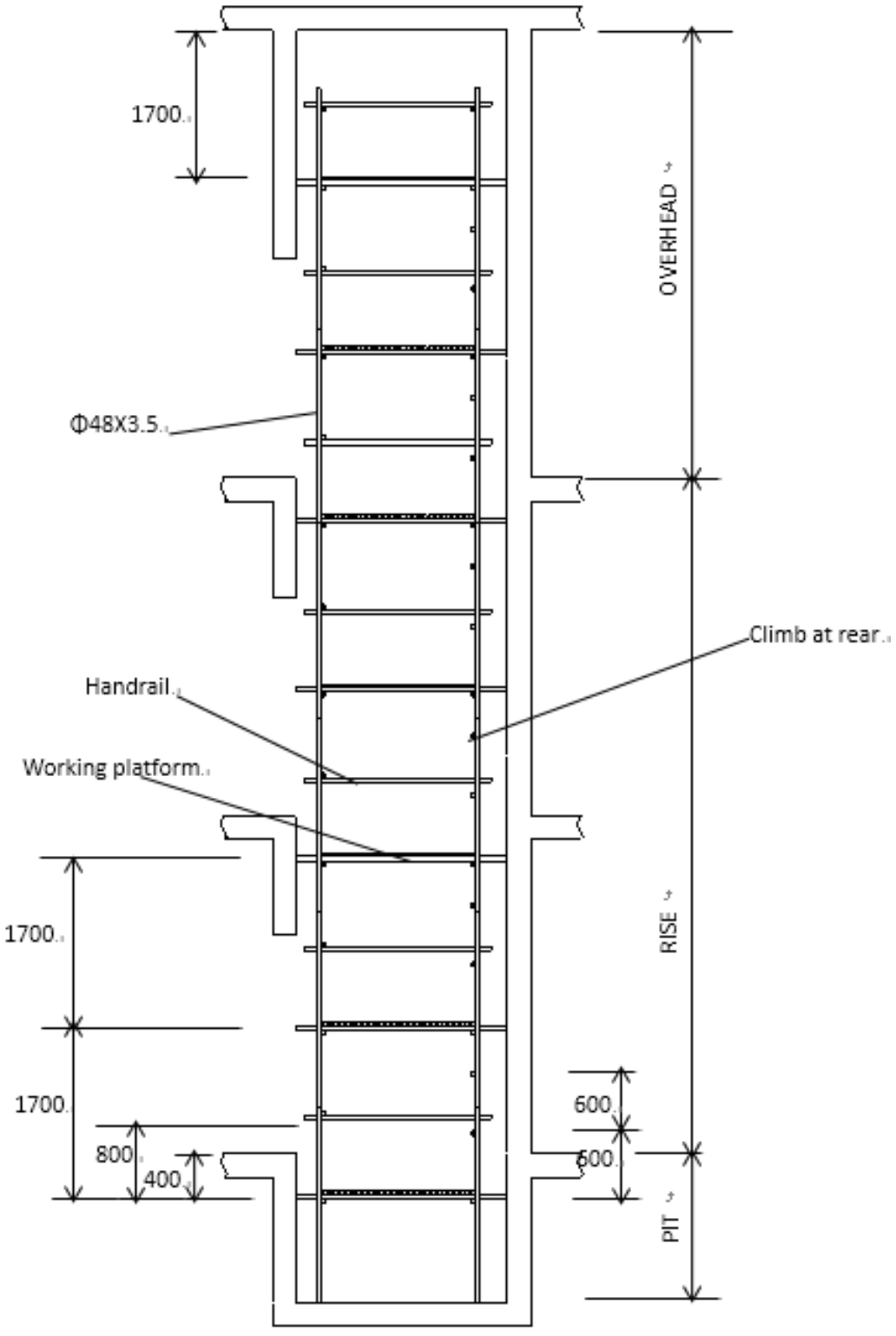

1700
OVERHEAD
Φ48X3.5
Climb at rear
Handrail
Working platform
1700
RISE
1700
600
800
400
600
PIT

Figure 3-3

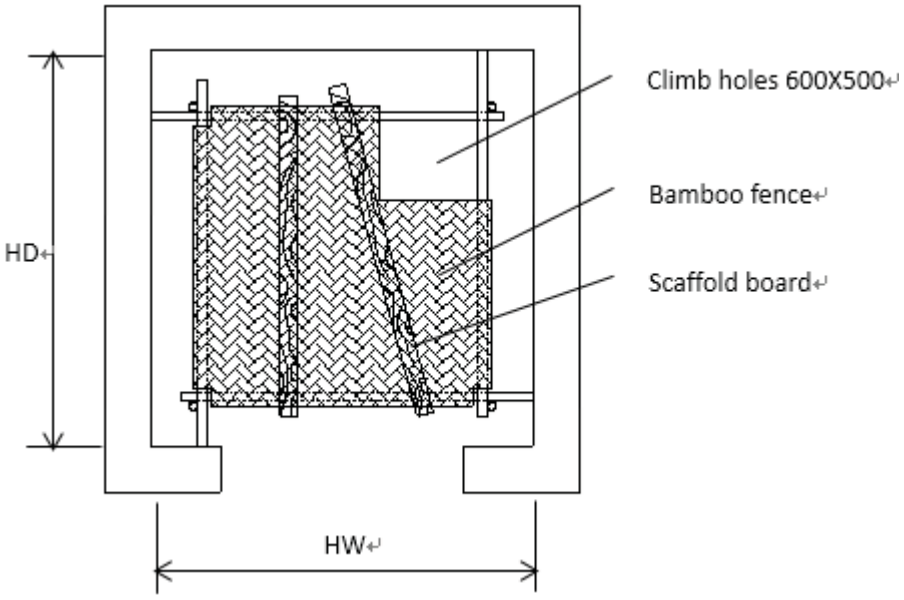


Figure 3-4

3.2 Installation of landing door protection handrail

Step	Instruction	Fig
1	Install landing door protective devices at each floor.	Figure 3-5

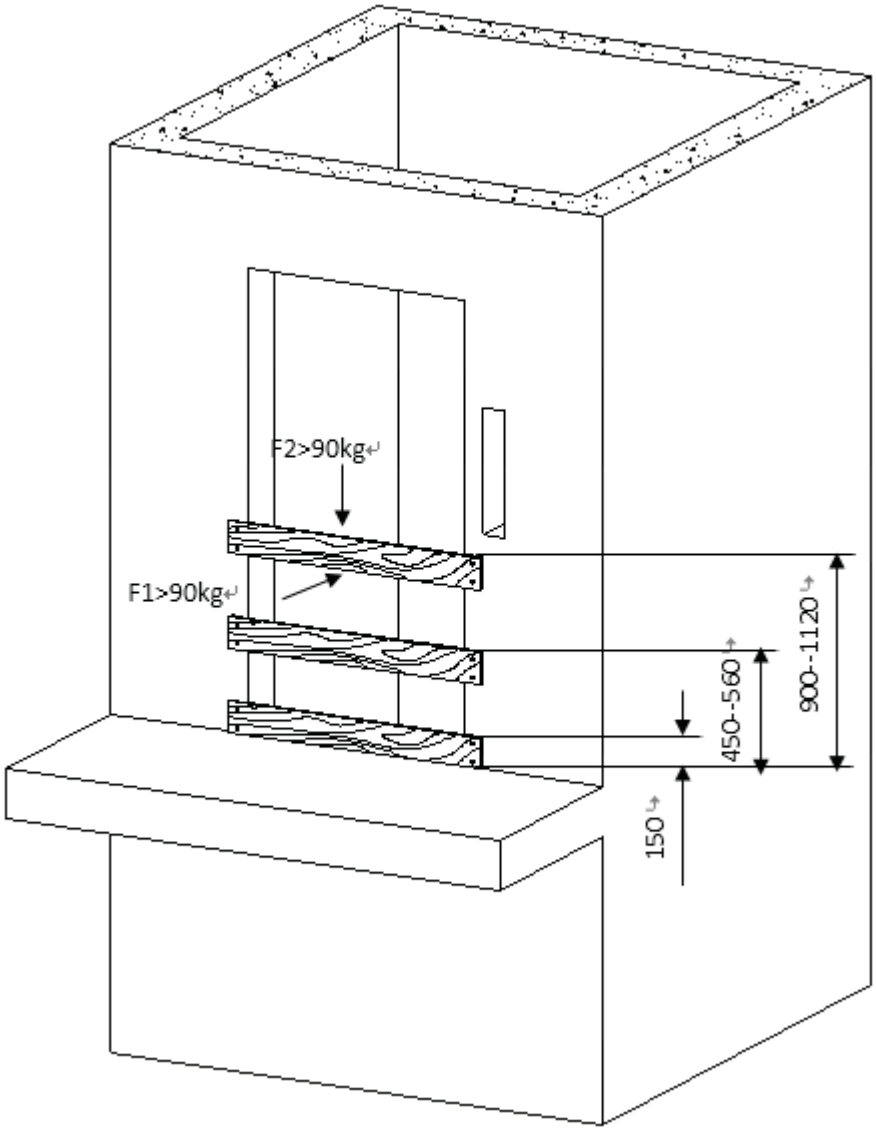


Figure 3-5

3.3 Set up sample framework

Step	Instruction	Fig
1	Find out the position of 6 plumb lines.	Figure 3-6
2	Build upper sample plate and lower sample plate.	Figure 3-7

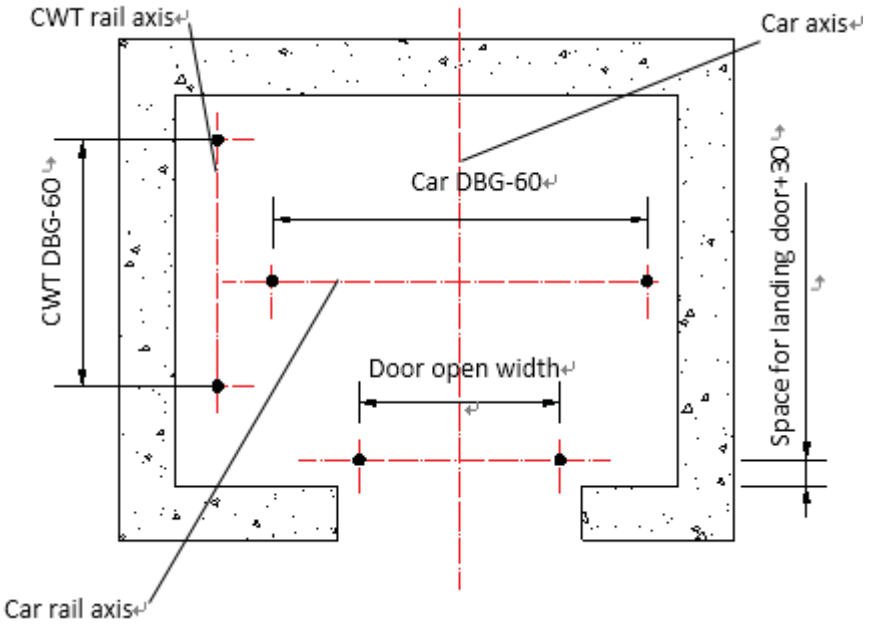


Figure 3-6

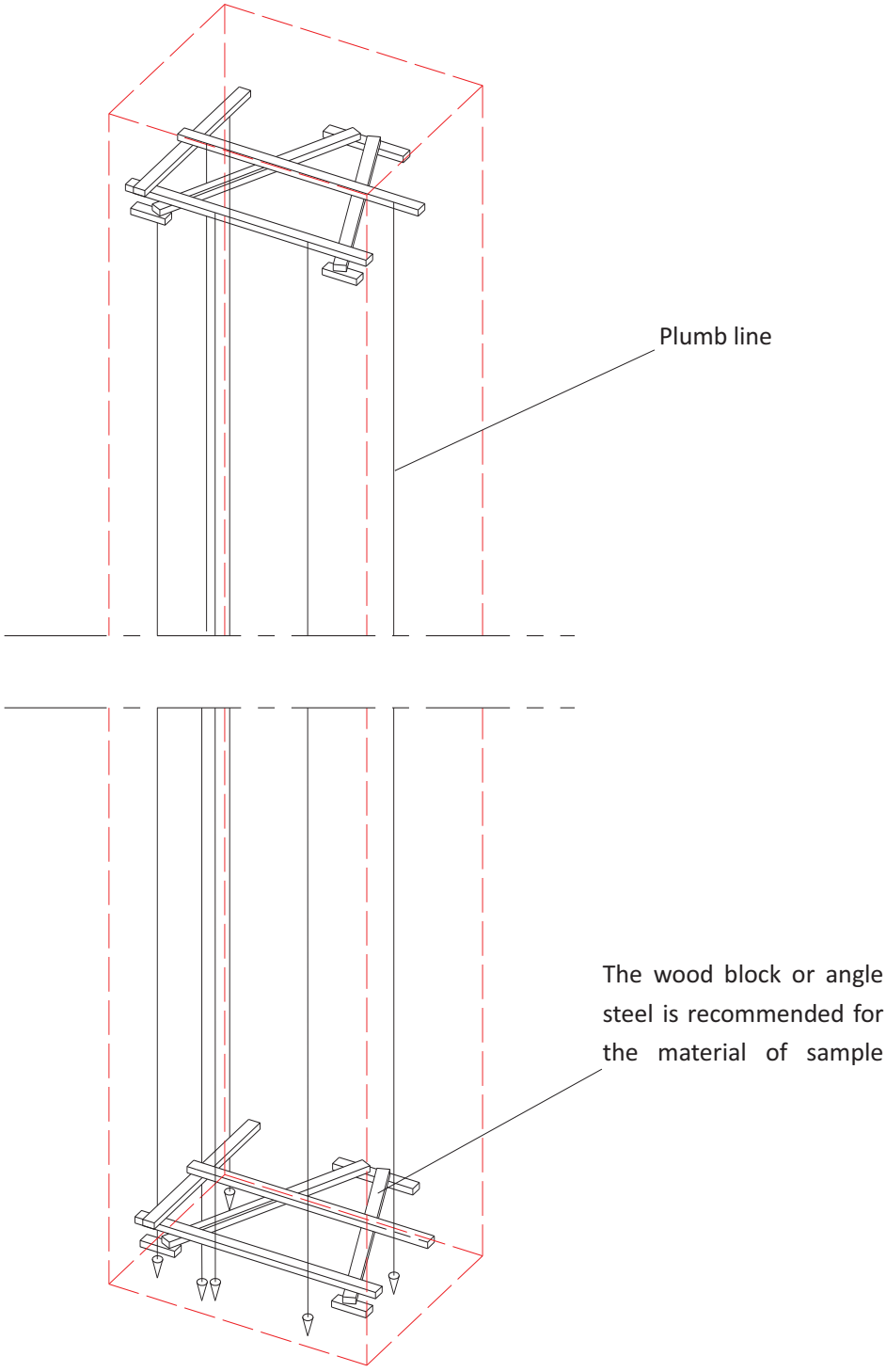
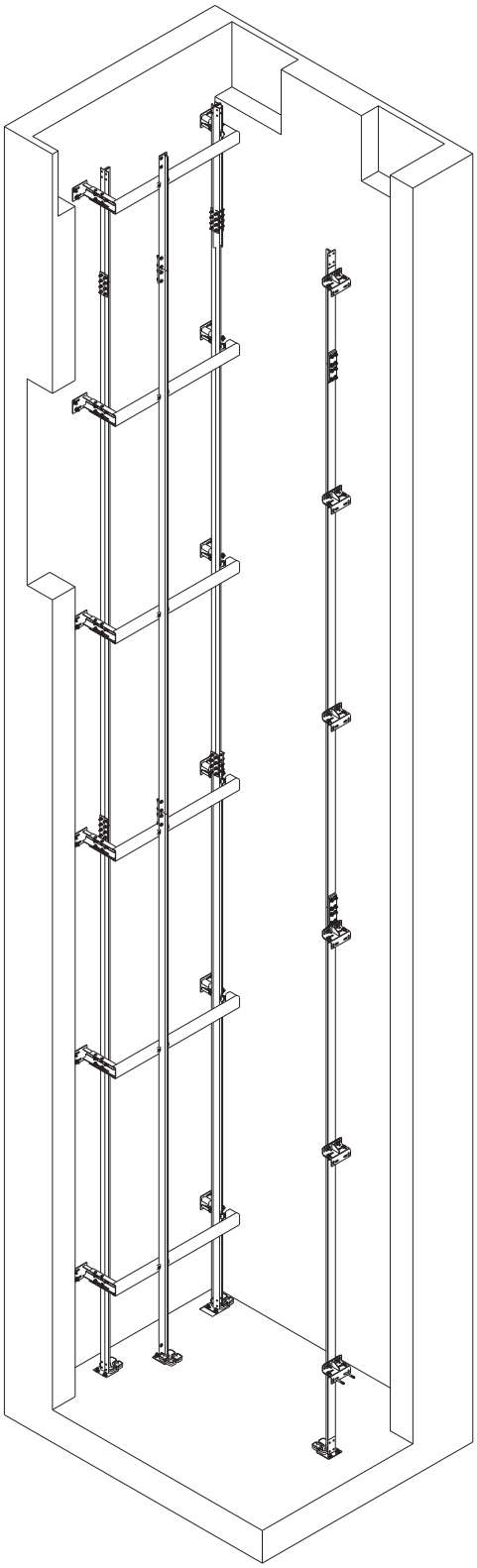


Figure 3-7

Notes: here gives one type of sample frameworks. Other appropriate method of sample frameworks can be used.

4 Installation of guide rail

Guide rail installation overview:



4.1 Guide rail transport and storage

4.1.1 Transport

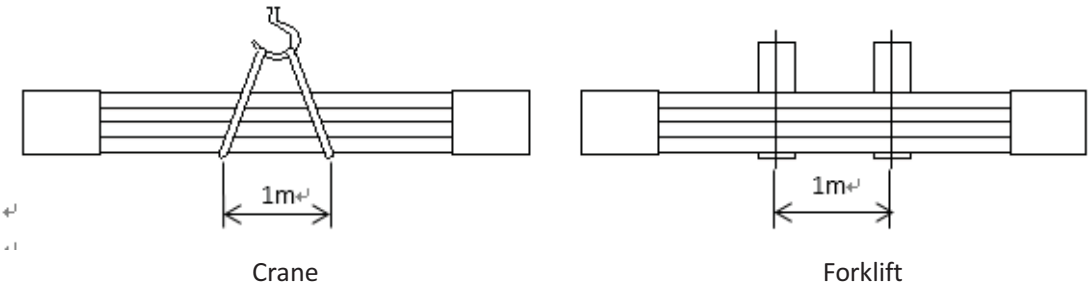


Figure 4-1

4.1.2 Storage

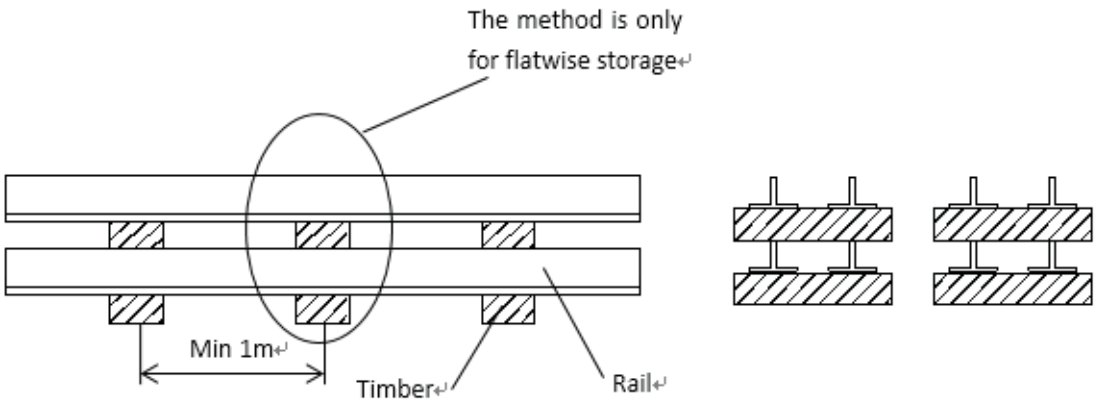


Figure 4-2

4.2 Installation of rail bracket

4.2.1 Installation car rail bracket

Step	Instruction	Fig
1	The position of rail bracket in hoistway.	Figure 4-3
2	Connect the fixed support on the well wall.	Figure 4-4
3	Connect the rail support on fixed support.	Figure 4-5

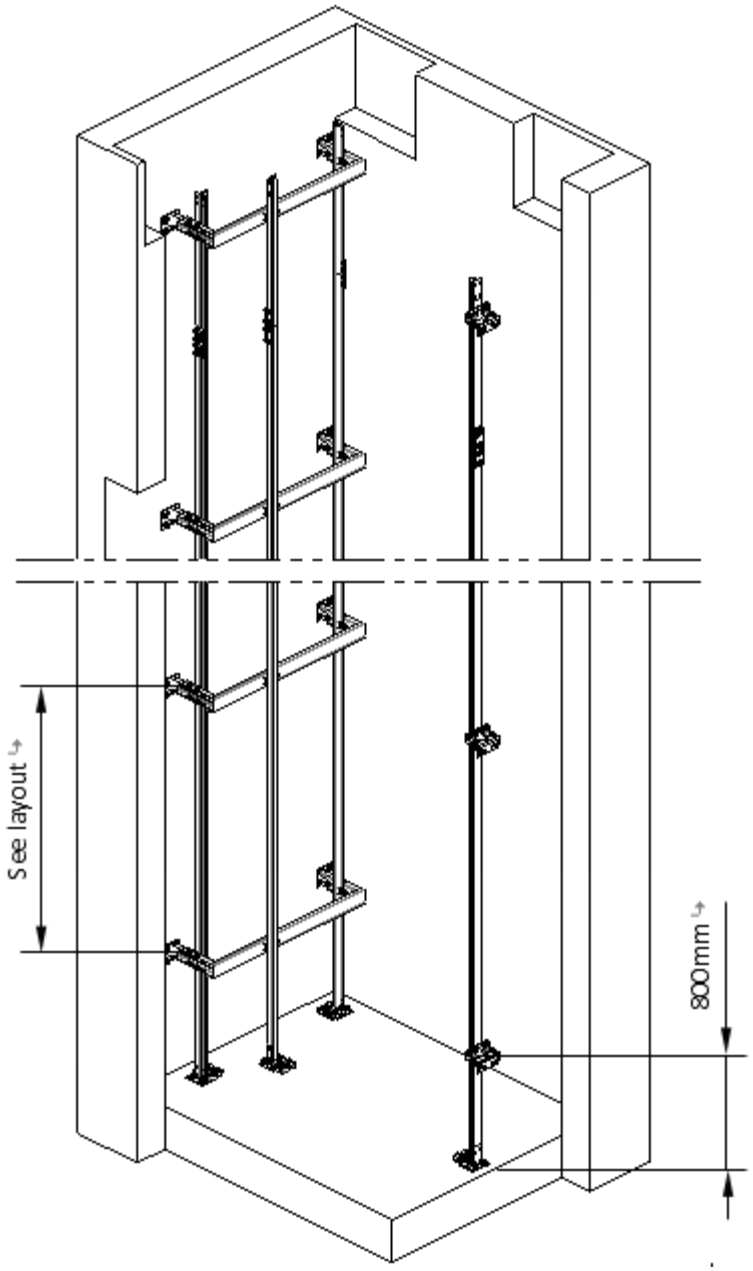


Figure 4-3

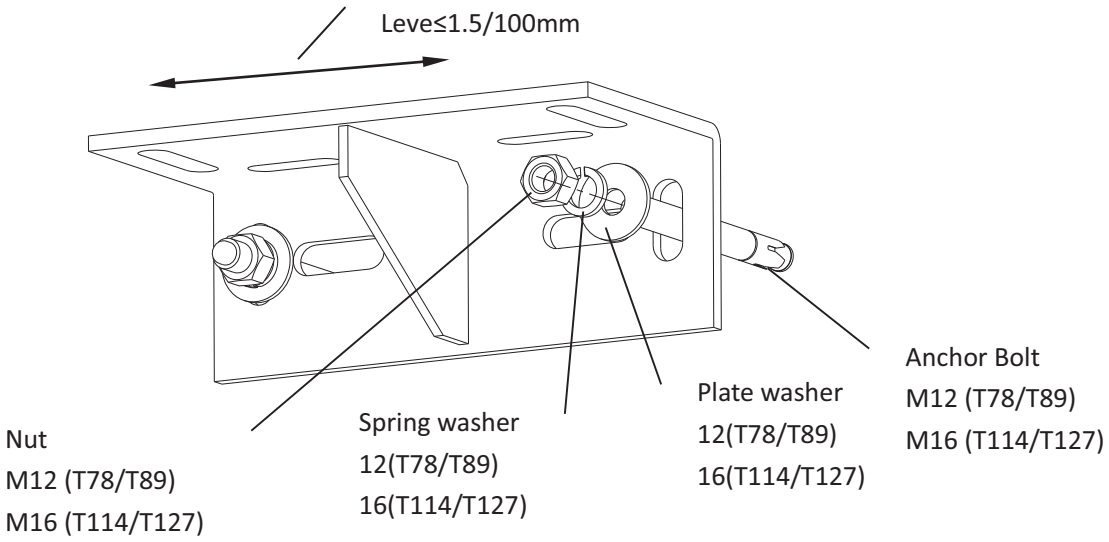


Figure 4-4

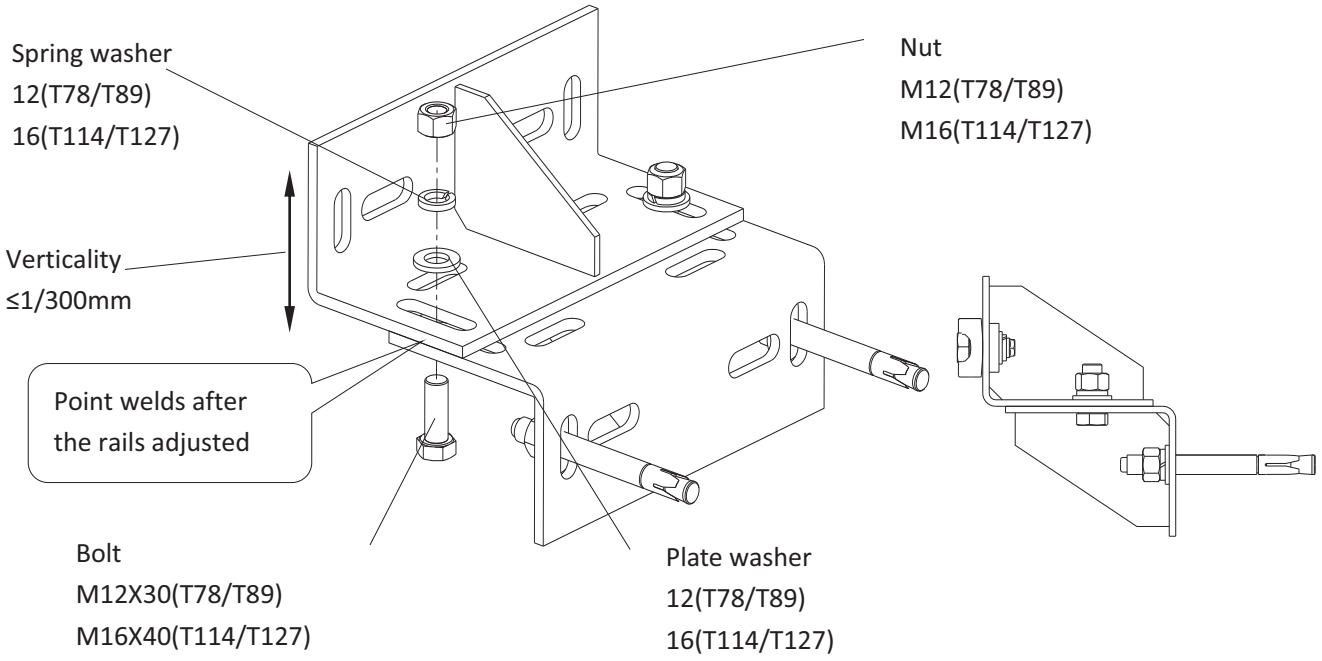


Figure 4-5

4.2.2 Installation counterweight rail bracket

Step	Instruction	Fig
1	Connect the fixed support on the well wall.	Figure 4-6
2	Connect the rail support on fixed support.	Figure 4-7

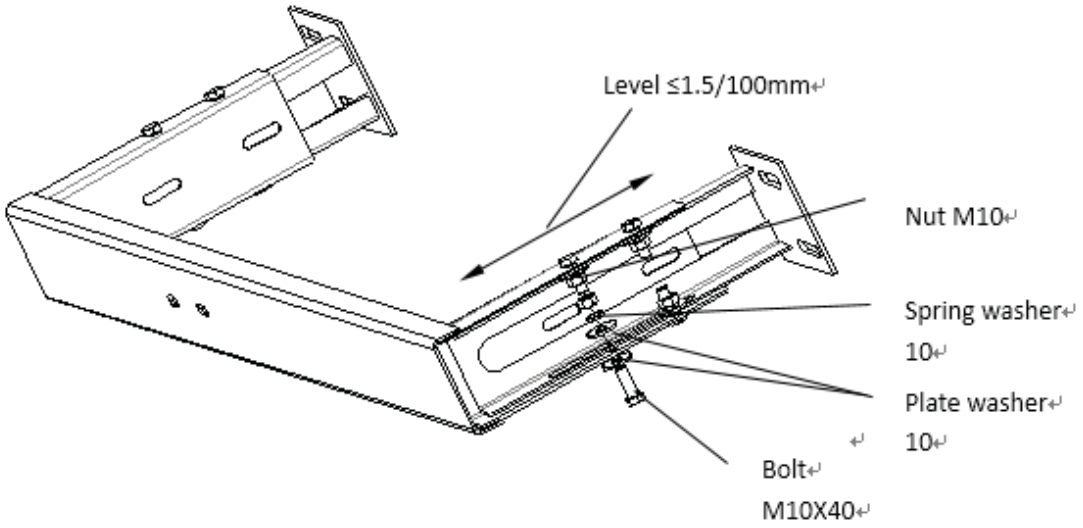


Figure 4-6

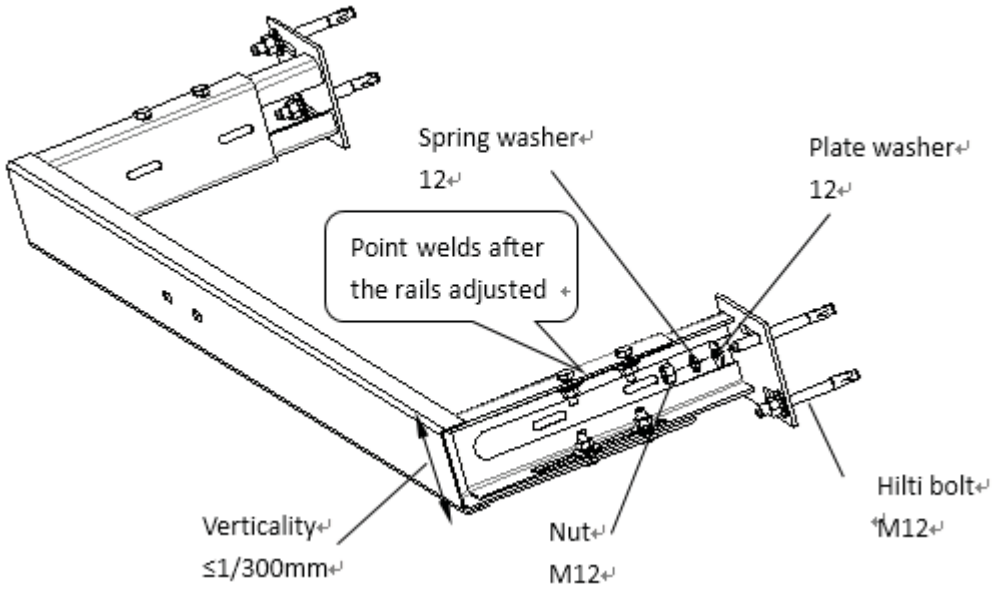


Figure 4-7

4.3 Installation of rail seat

Step	Instruction	Fig
1	Connect the rail seat on the pit floor.	Figure 4-8

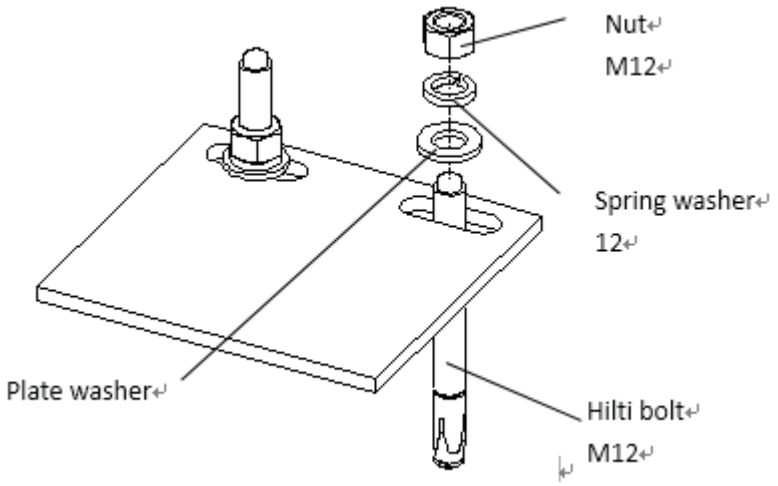


Figure 4-8

4.4 Installation of guide rail

4.4.1 Installation of car guide rail

Step	Instruction	Fig
1	Connect the rails on the rail brackets by clips.	Figure 4-9
2	Connect the top rails on the rail brackets by clips.	Figure 4-9a
3	Connected the rail to the rail by fishplate.	Figure 4-10

In order to guarantee the quality of the connection point, the machining end faces and fishplates must be thoroughly clean.

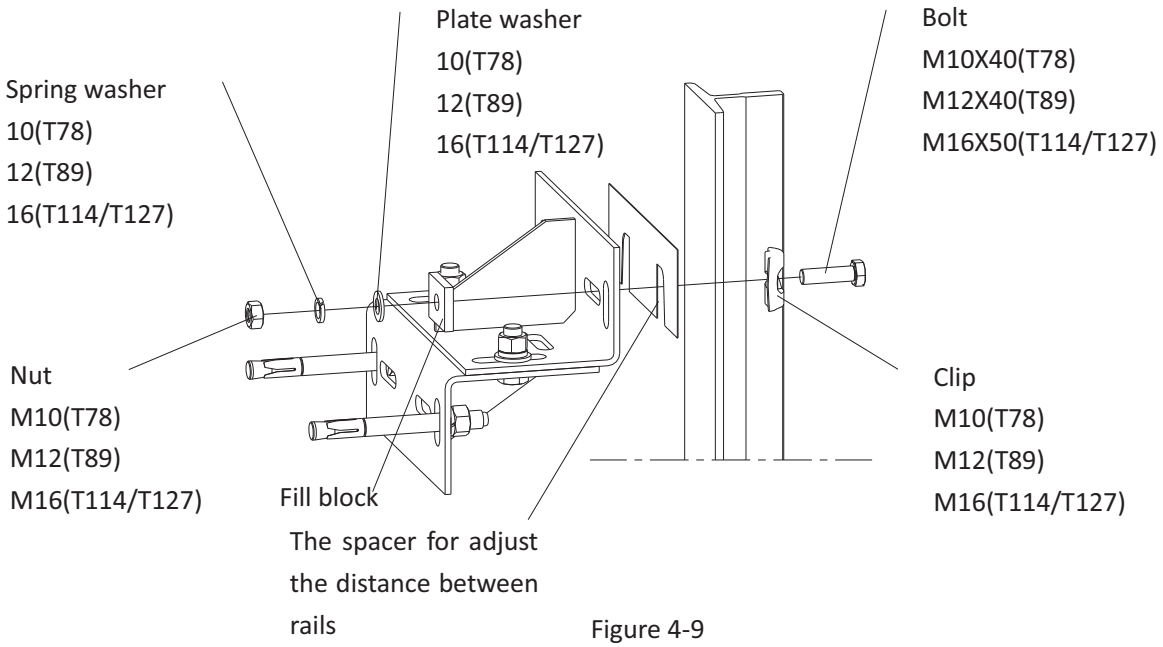


Figure 4-9

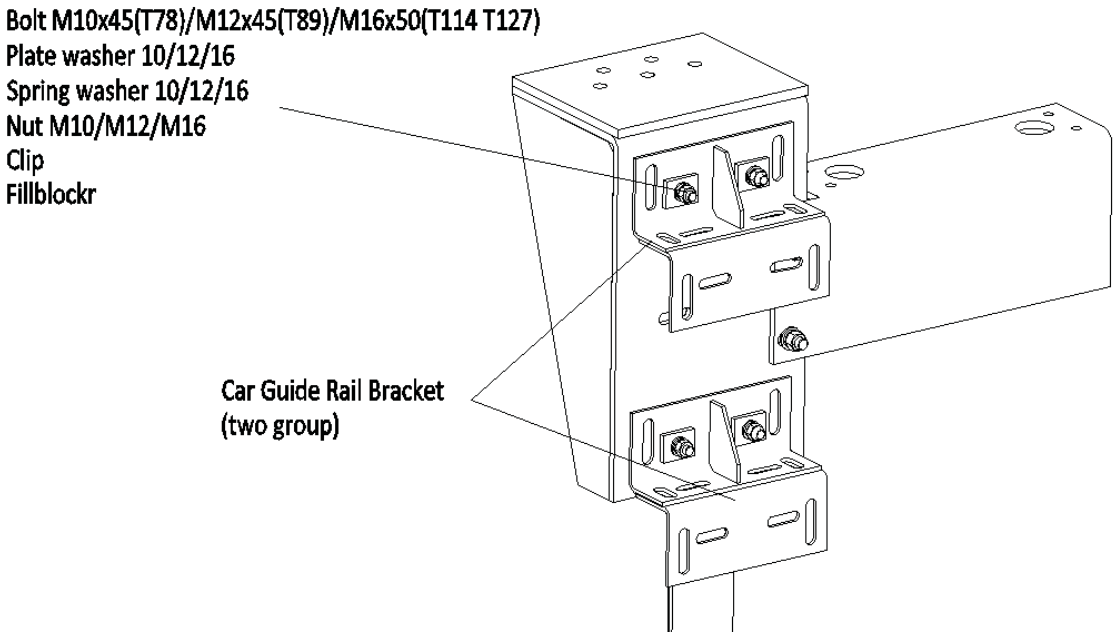


Figure 4-9a

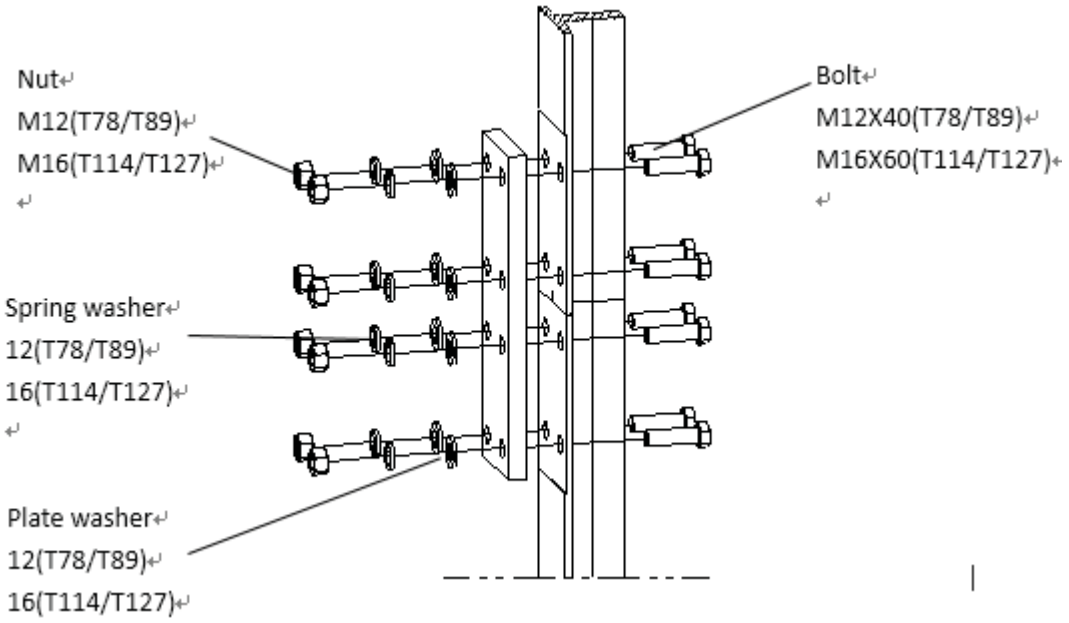

Nut
M12(T78/T89)
M16(T114/T127)
Bolt
M12X40(T78/T89)
M16X60(T114/T127)
Spring washer
12(T78/T89)
16(T114/T127)
Plate washer
12(T78/T89)
16(T114/T127)

Figure 4-10

4.4.2 Installation of counterweight guide rail

Step	Instruction	Fig
1	Connect the rails on the rail brackets by clips.	Figure 4-11
2	Connected the rail to the rail by fishplate.	Figure 4-12

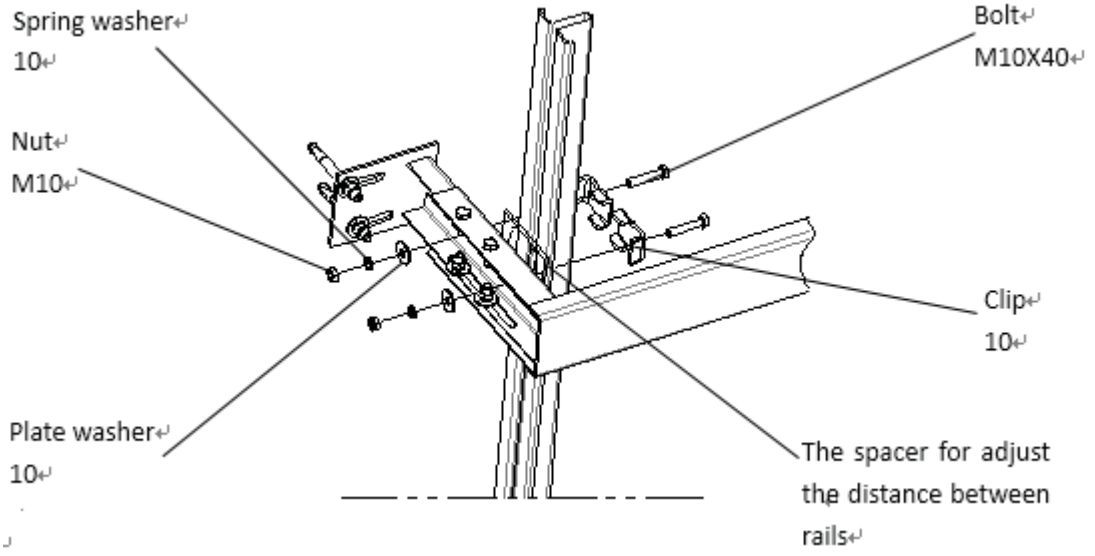


Figure 4-11

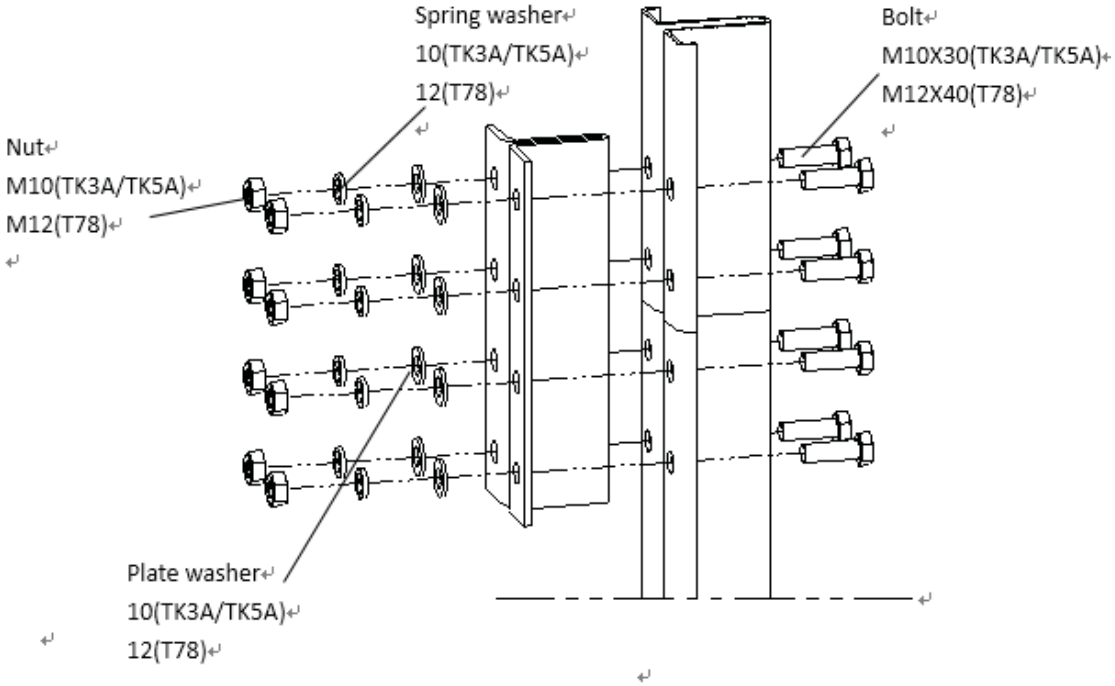


Figure 4-12

4.5 Correction of guide rail

Step	Instruction	Fig
1	Measure distance between the plumb line and the top surface of guide rails with a steel ruler and estimate whether the distance is of too much deviation from 30mm or not. If this is the case, add or remove some shims, or adjust rail brackets when necessary.	Figure 4-13
2	Measure plumb between the plumb line and the surface of guide rails with guide rail calipers. Calibrate guide rails with a hammer when the deviation is too large.	Figure 4-14
3	The deviation for guide relative to standard baseline.	Figure 4-15
4	Calibrate distortion of guide rail sides with a guiding rule.	Figure 4-16
5	Trimming of guide rails at the location of rail joints.	Figure 4-17
6	The deviation of the distance between the top faces of two guide rails.	Figure 4-18

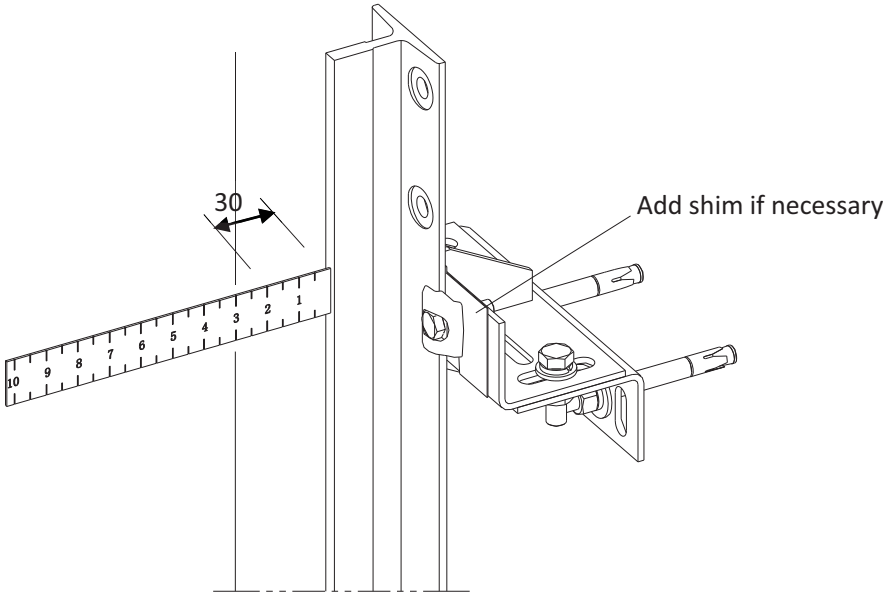


Figure 4-13

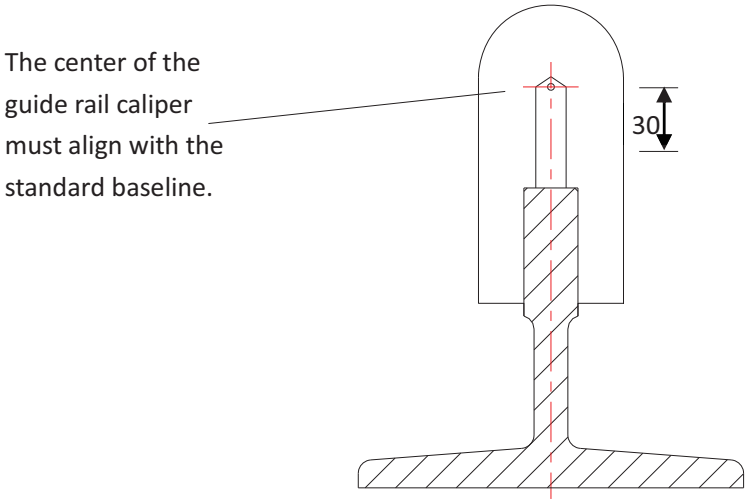


Figure 4-14

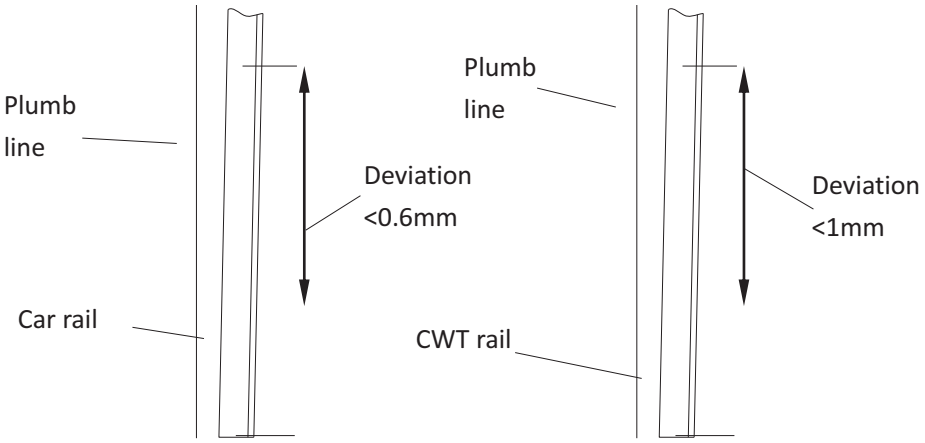


Figure 4-15

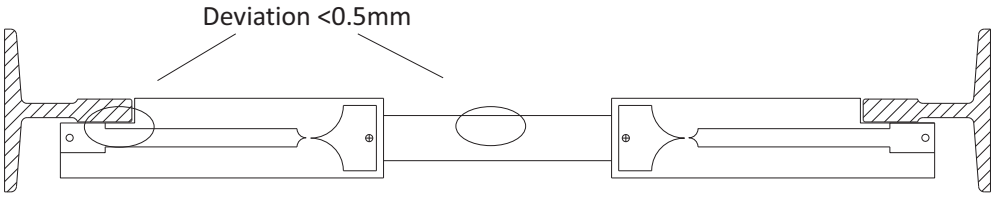


Figure 4-16

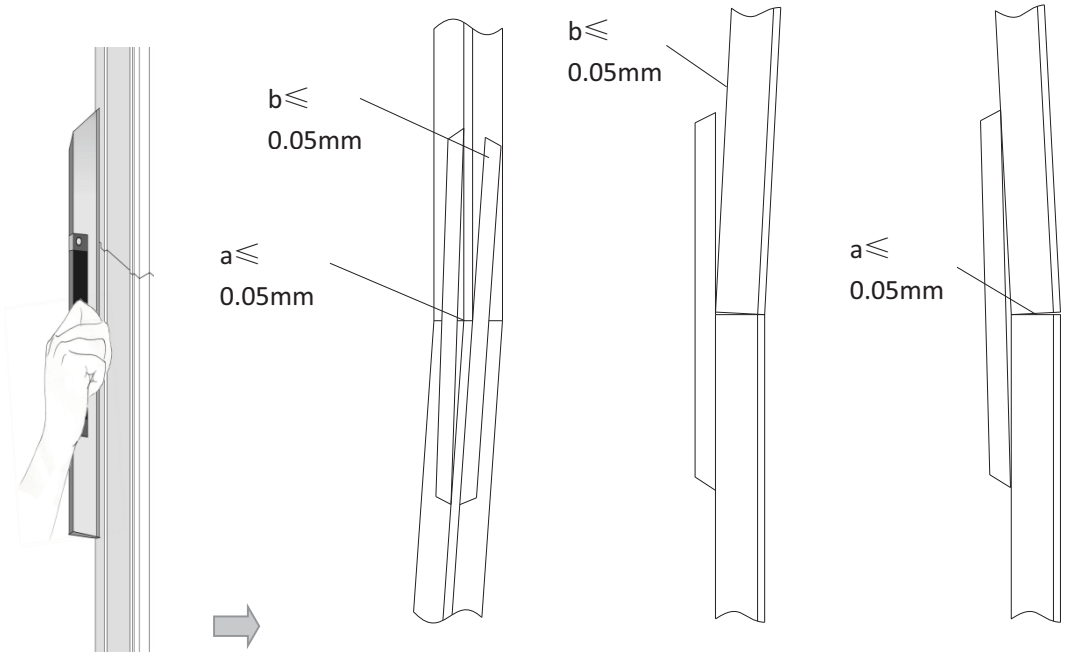


Figure 4-17

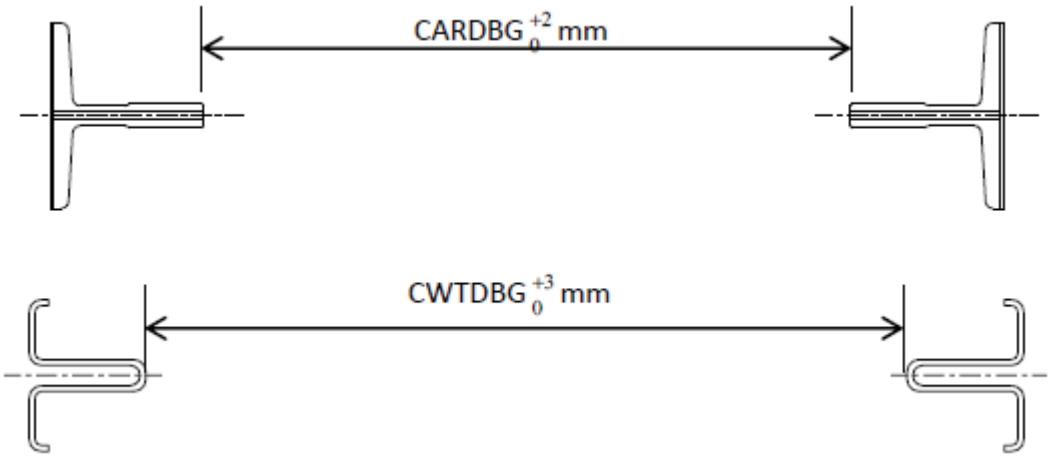


Figure 4-18

4.6 Installation of oil catcher

Step	Instruction	Fig
1	Fix the slot of the oil catcher to the guide rail of the elevator, and the width of the slot shall be fit with that of the guide rail.	Figure 4-19

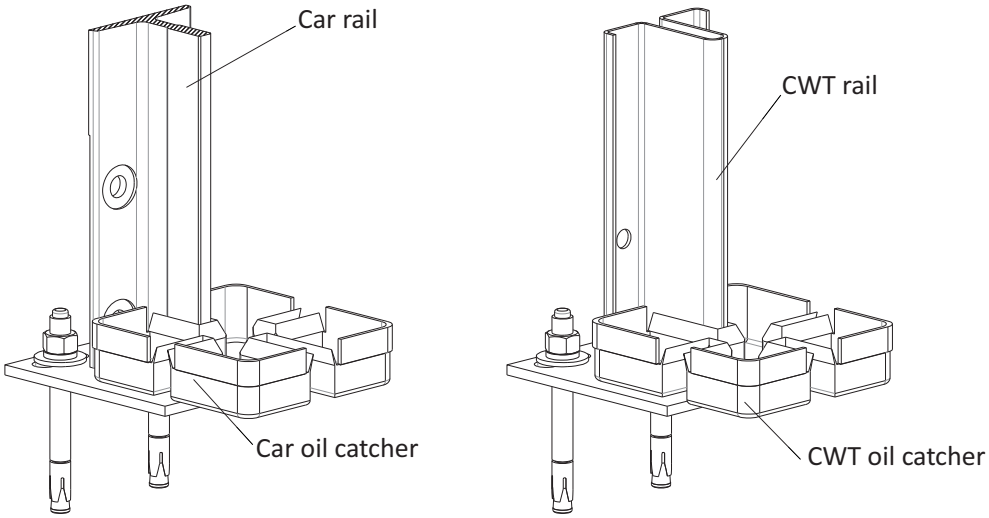
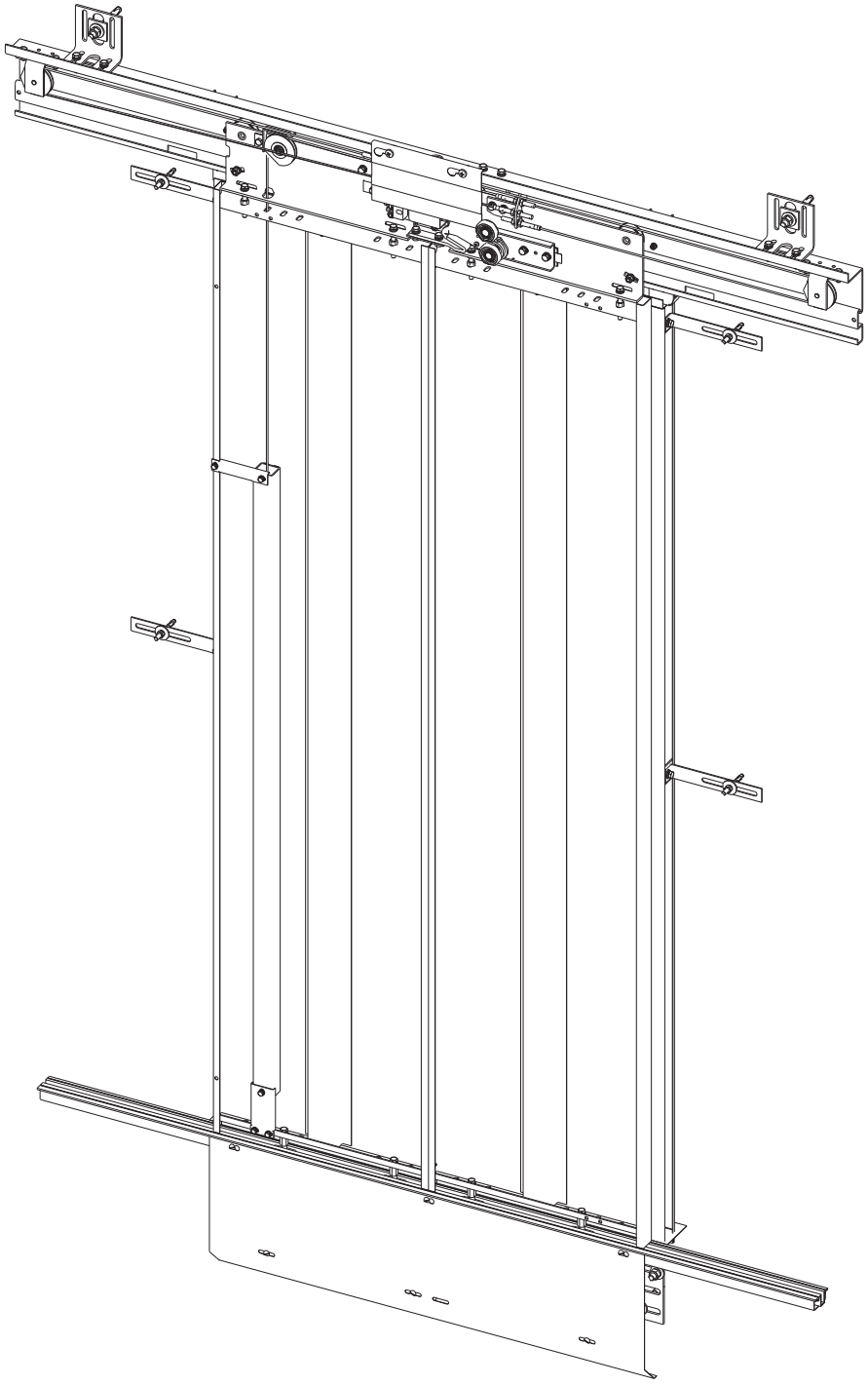


Figure 4-19

5 Installation of landing door

Landing door installation overall picture:



5.1 Installation of landing door sill

Step	Instruction	Fig
1	Mark door open center line and open width lines on the sill.	Figure 5-1
2	Assemble brackets and landing door sills	Figure 5-2
3	Position the landing door sill assembly in hoistway and make open width line on sill aligned with plumb line.	Figure 5-3
4	Fix sill assembly via hilti bolts on the wall, and adjust the sill so that aligning the clean opening door width lines with two plumbs for landing door.	Figure 5-4, 5-5, 5-6
5	Connect guard plate to the sill with fasteners	Figure 5-7

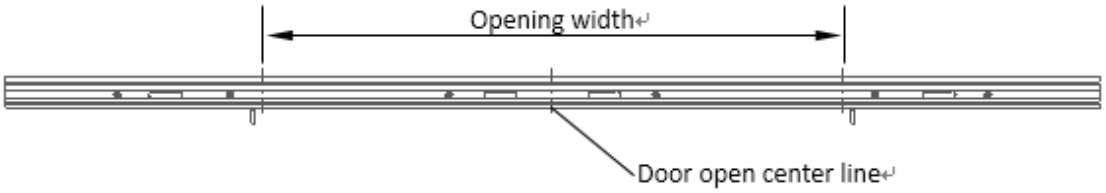


Figure 5-1

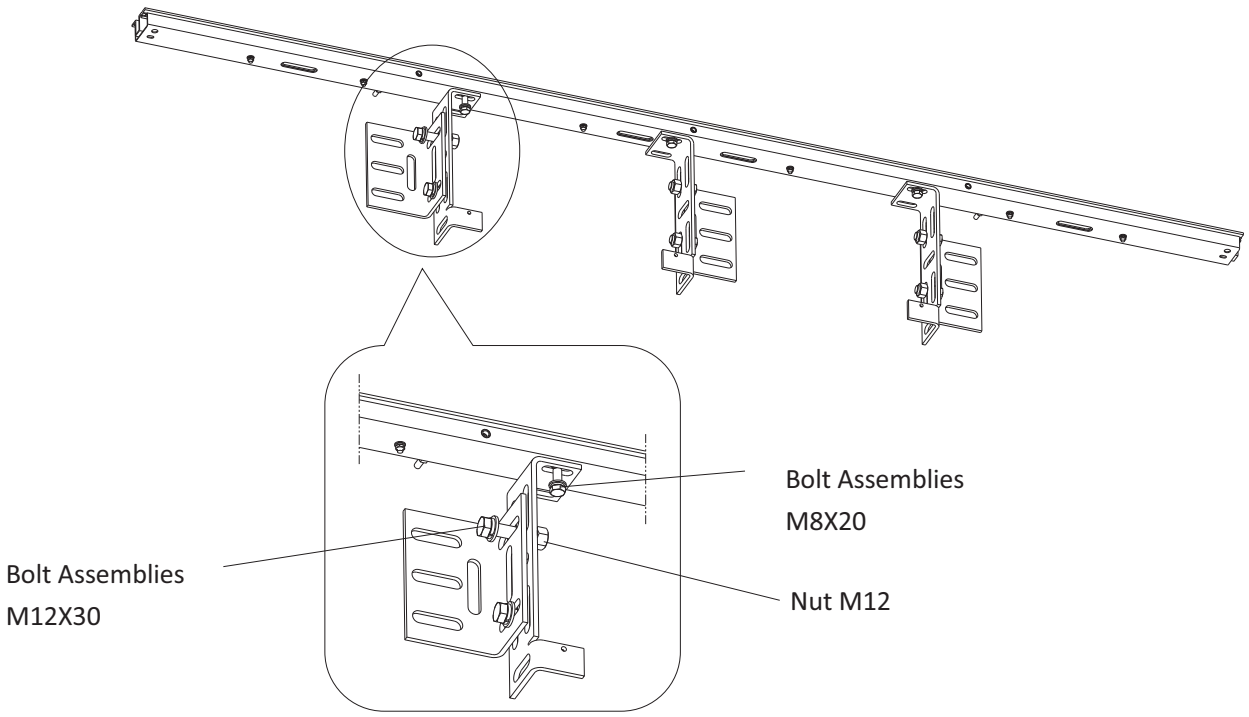


Figure 5-2

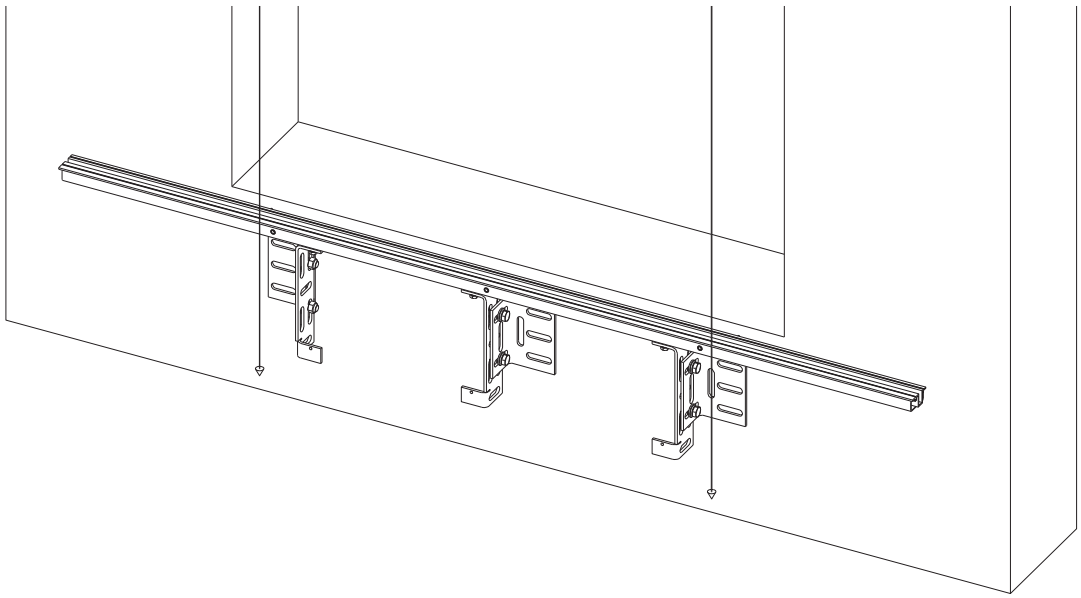


Figure 5-3

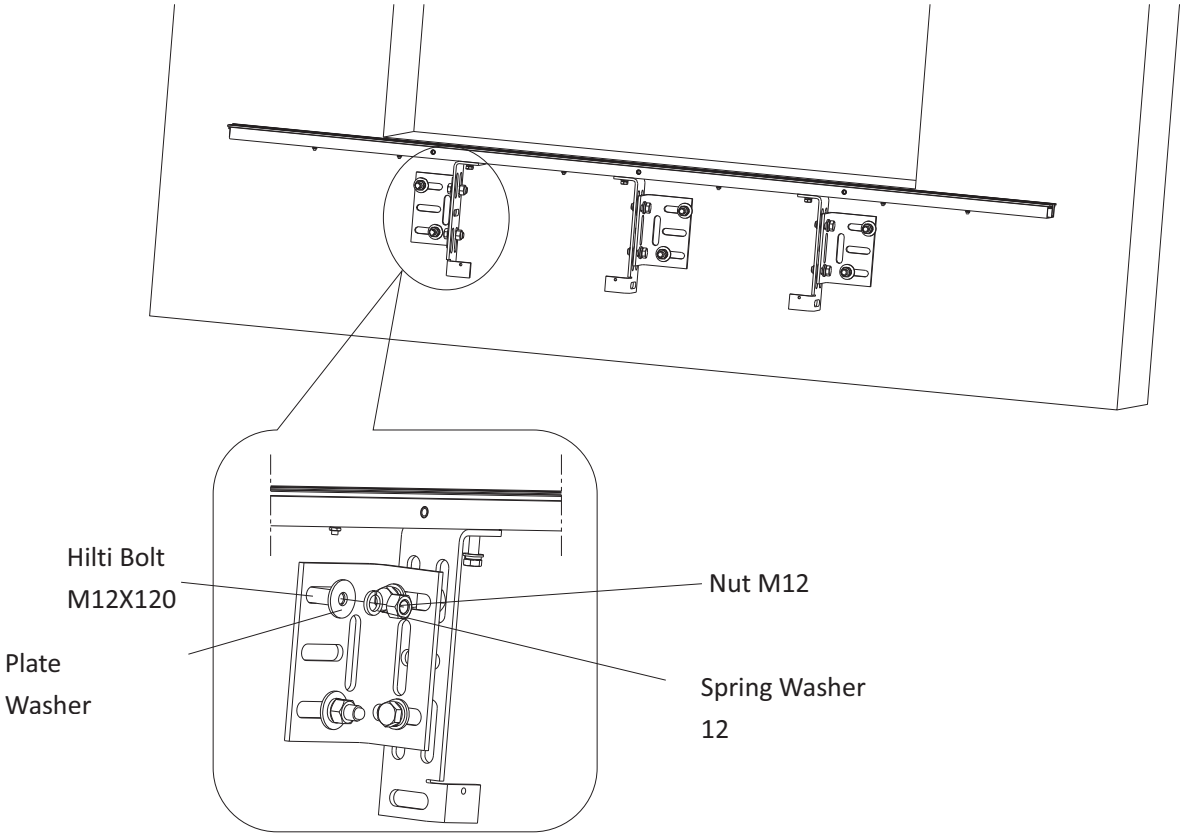


Figure 5-4

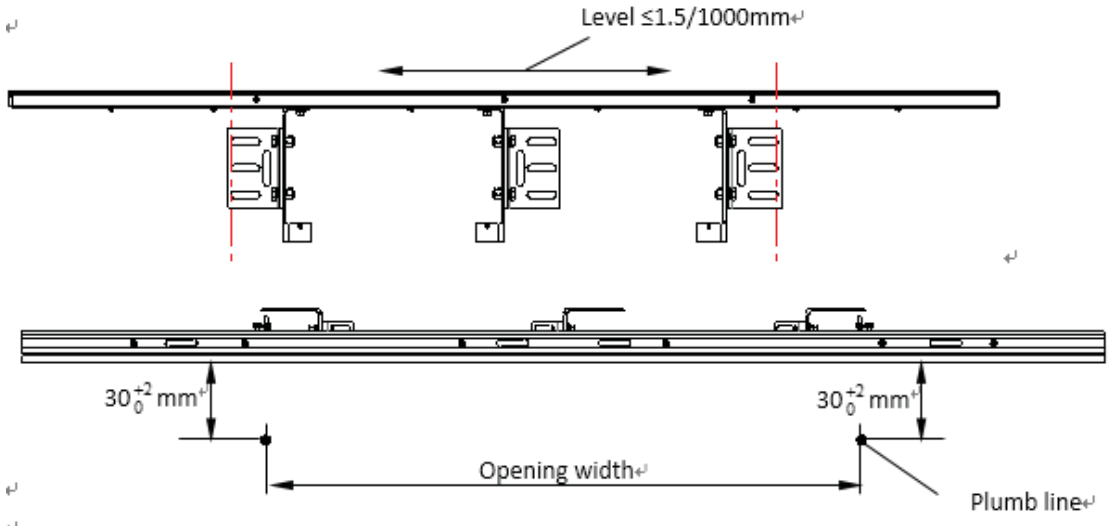


Figure 5-5

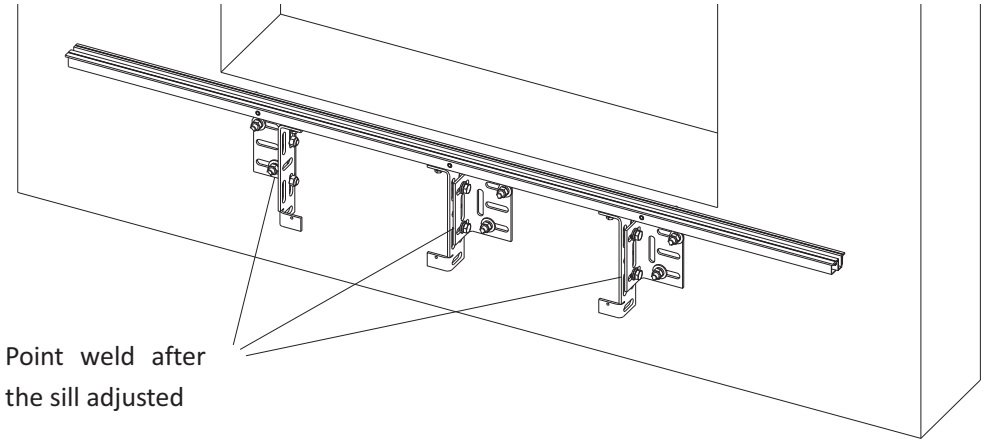


Figure 5-6

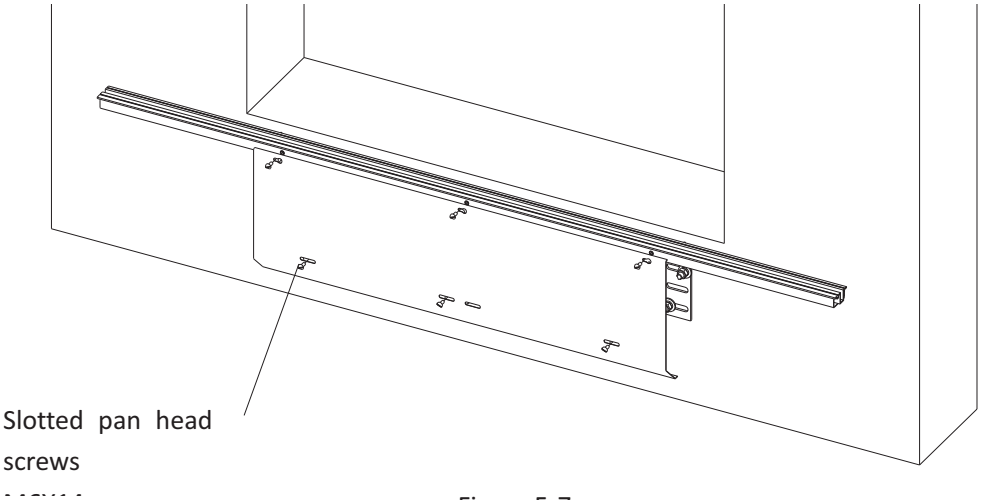


Figure 5-7

5.2 Installation of landing door jamb

Step	Instruction	Fig
1	Assembly landing door jamb at landing.	Figure 5-8
2	Connect the jamb to the sill.	Figure 5-9
3	Connect the jamb on the well wall.	Figure 5-10

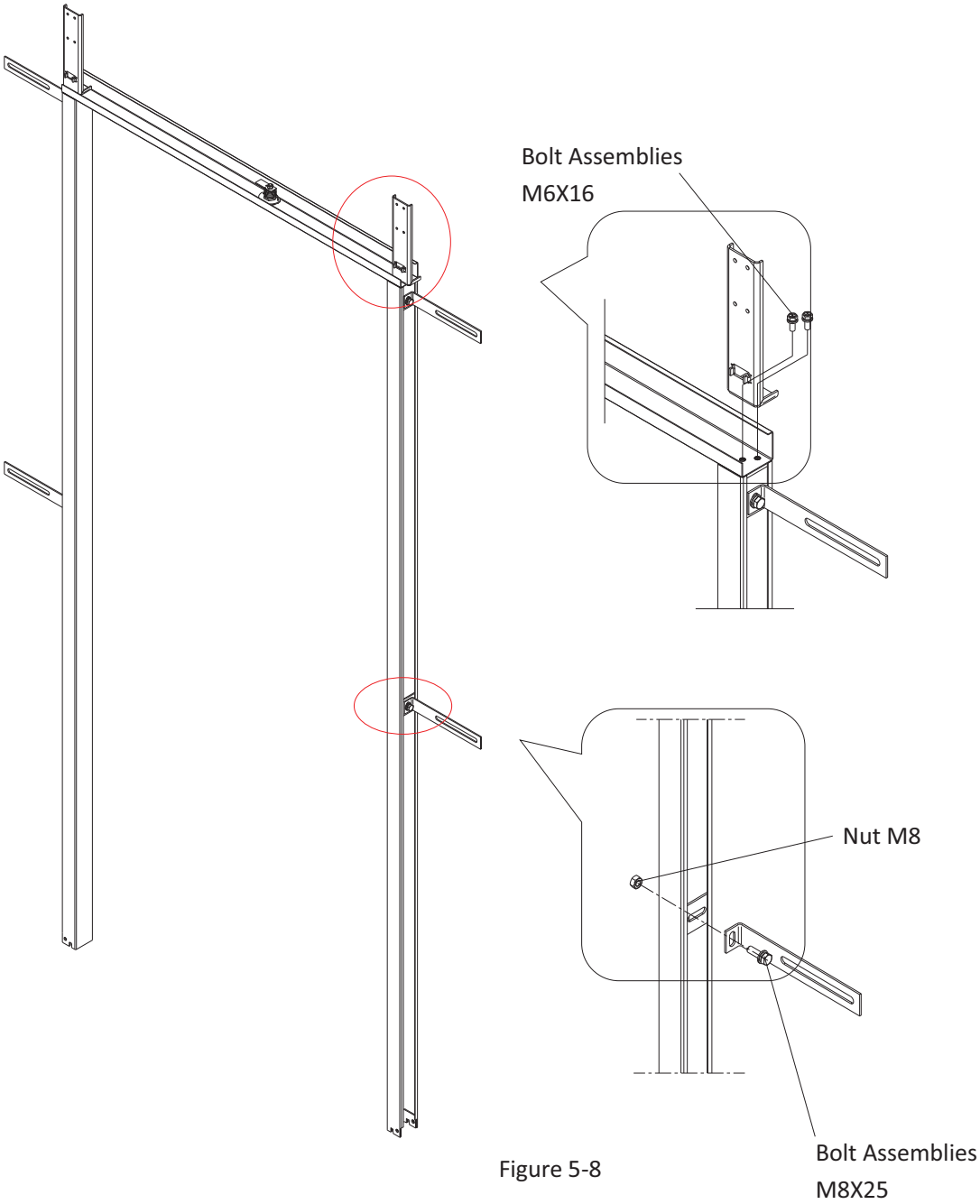


Figure 5-8

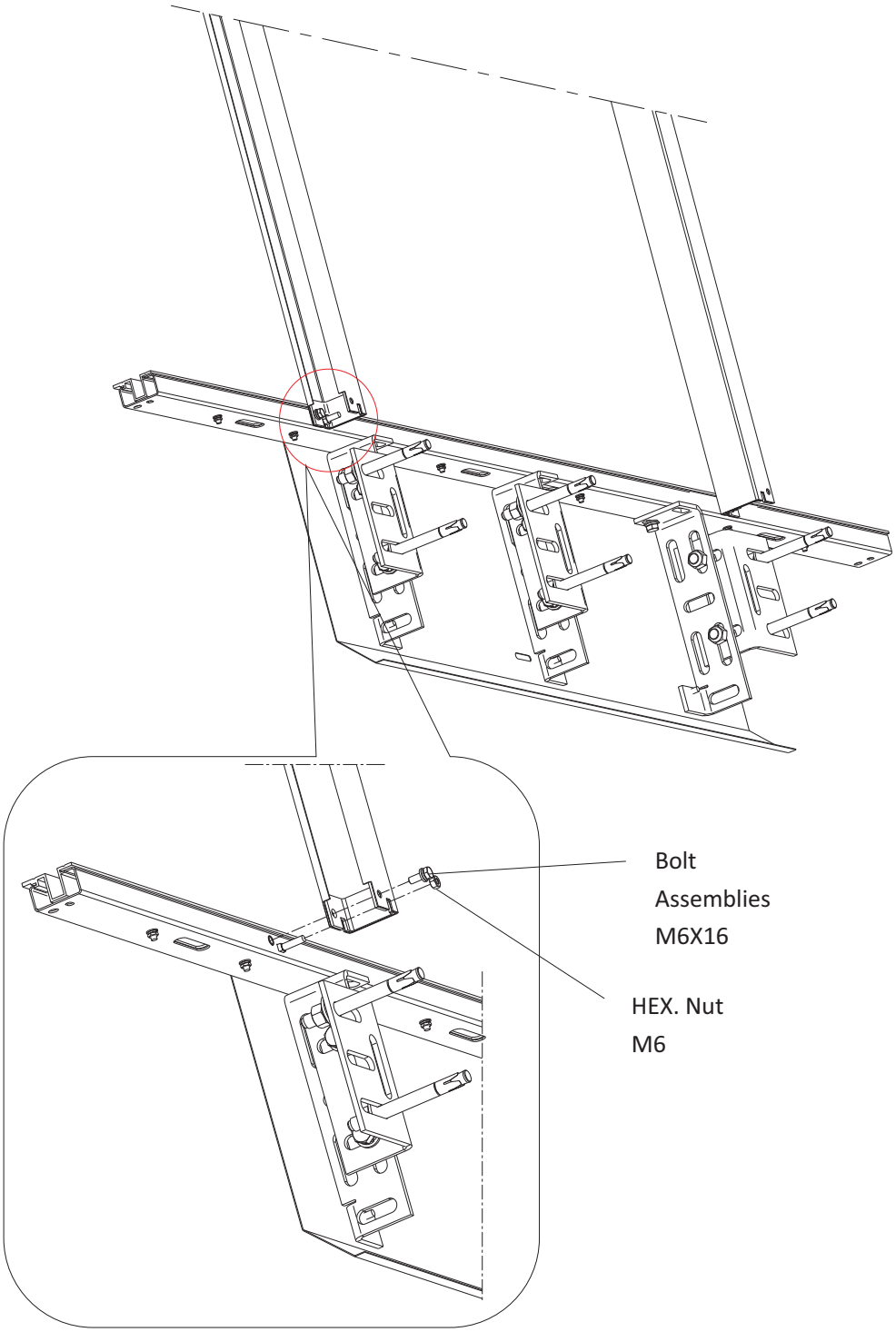


Figure 5-9

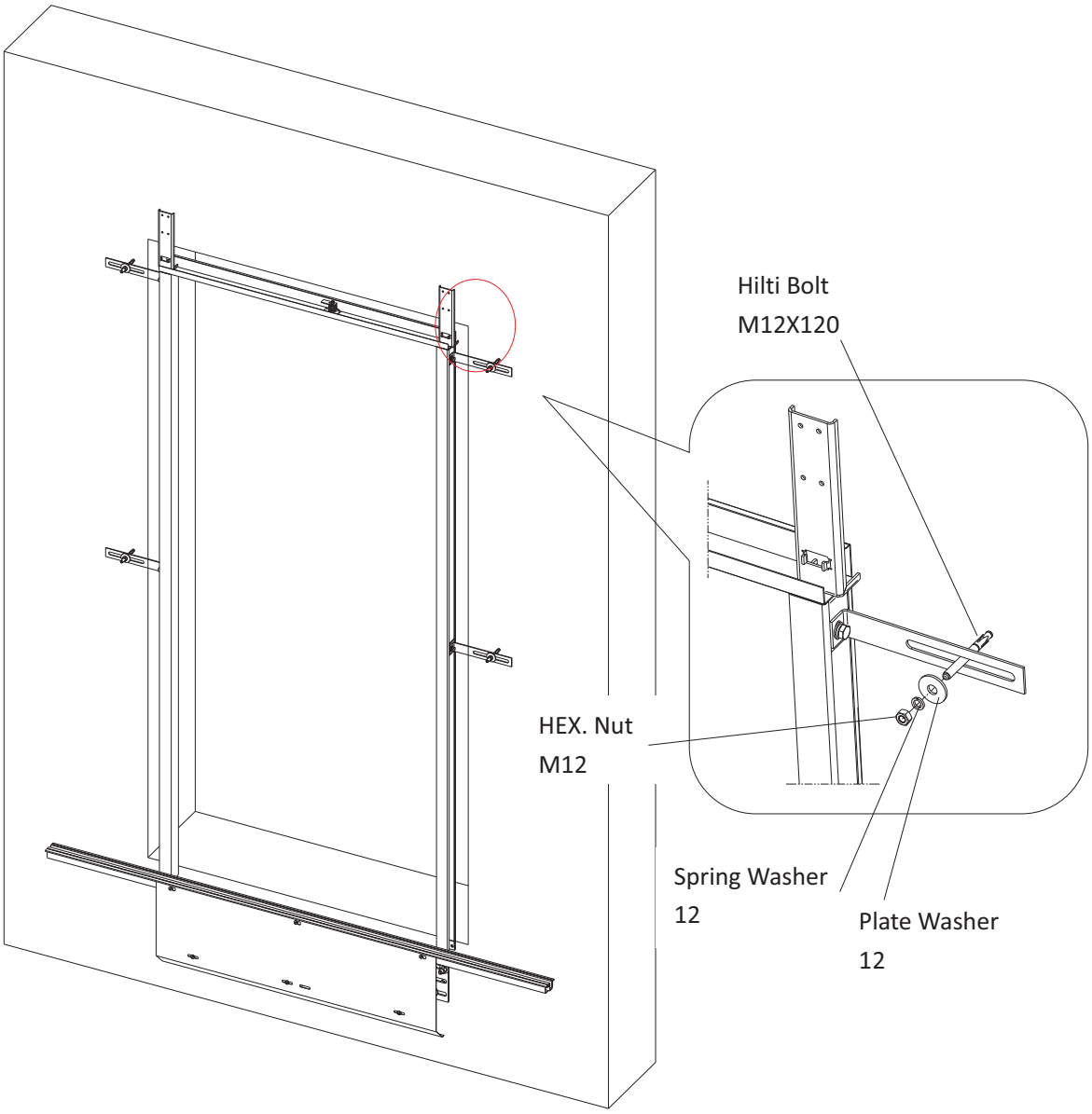

Hilti Bolt
M12X120
HEX. Nut
M12
Spring Washer
12
Plate Washer
12

Figure 5-10

5.3 Installation of landing door header

Step	Instruction	Fig
1	Assemble the brackets to the landing door header.	Figure 5-11
1	Connect the landing door header to the door jamb.	Figure 5-12
2	Connect the landing door header on the well wall.	Figure 5-13
3	Adjust the landing door header.	Figure 5-14, 5-15

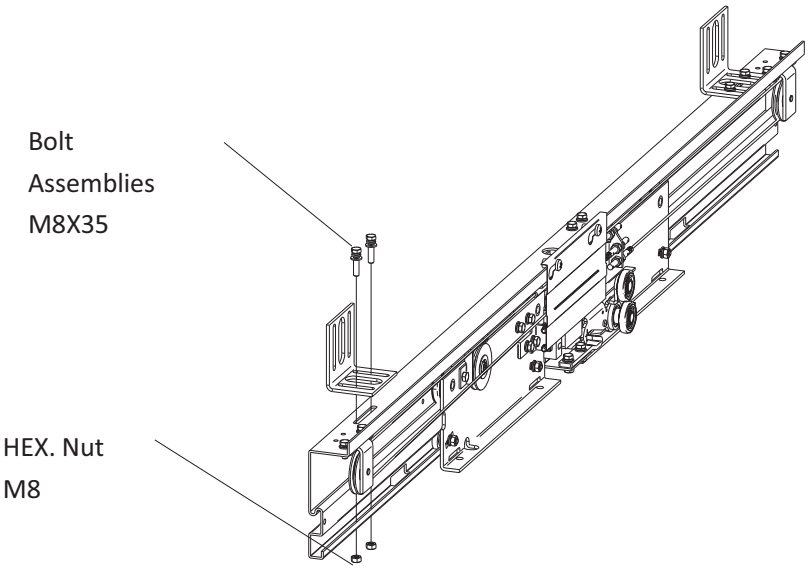


Figure 5-11

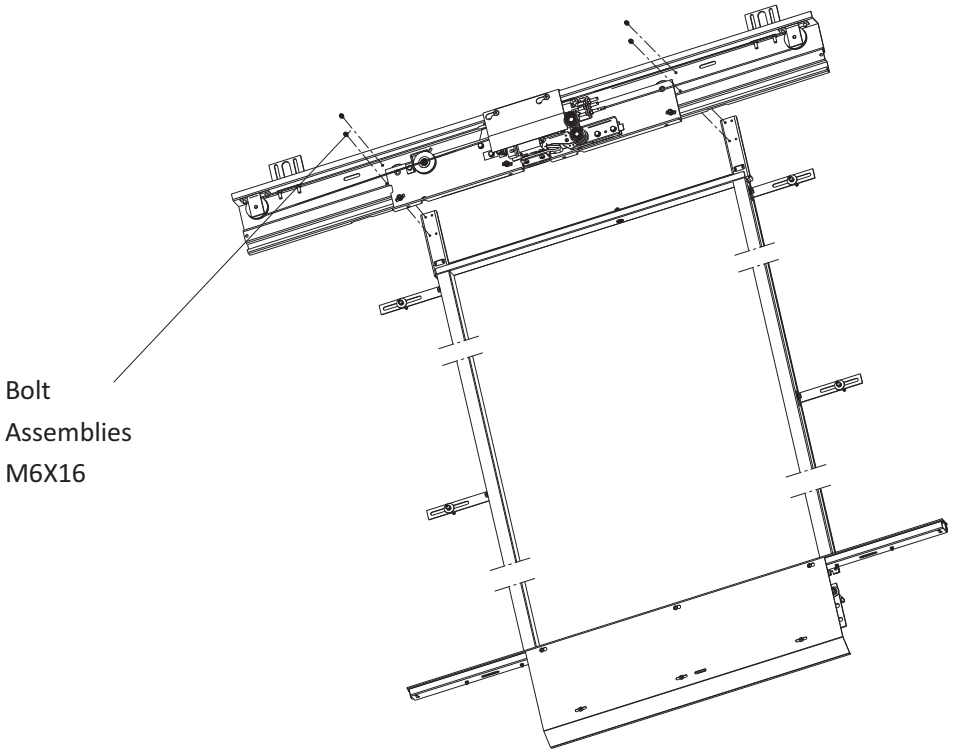


Figure 5-12

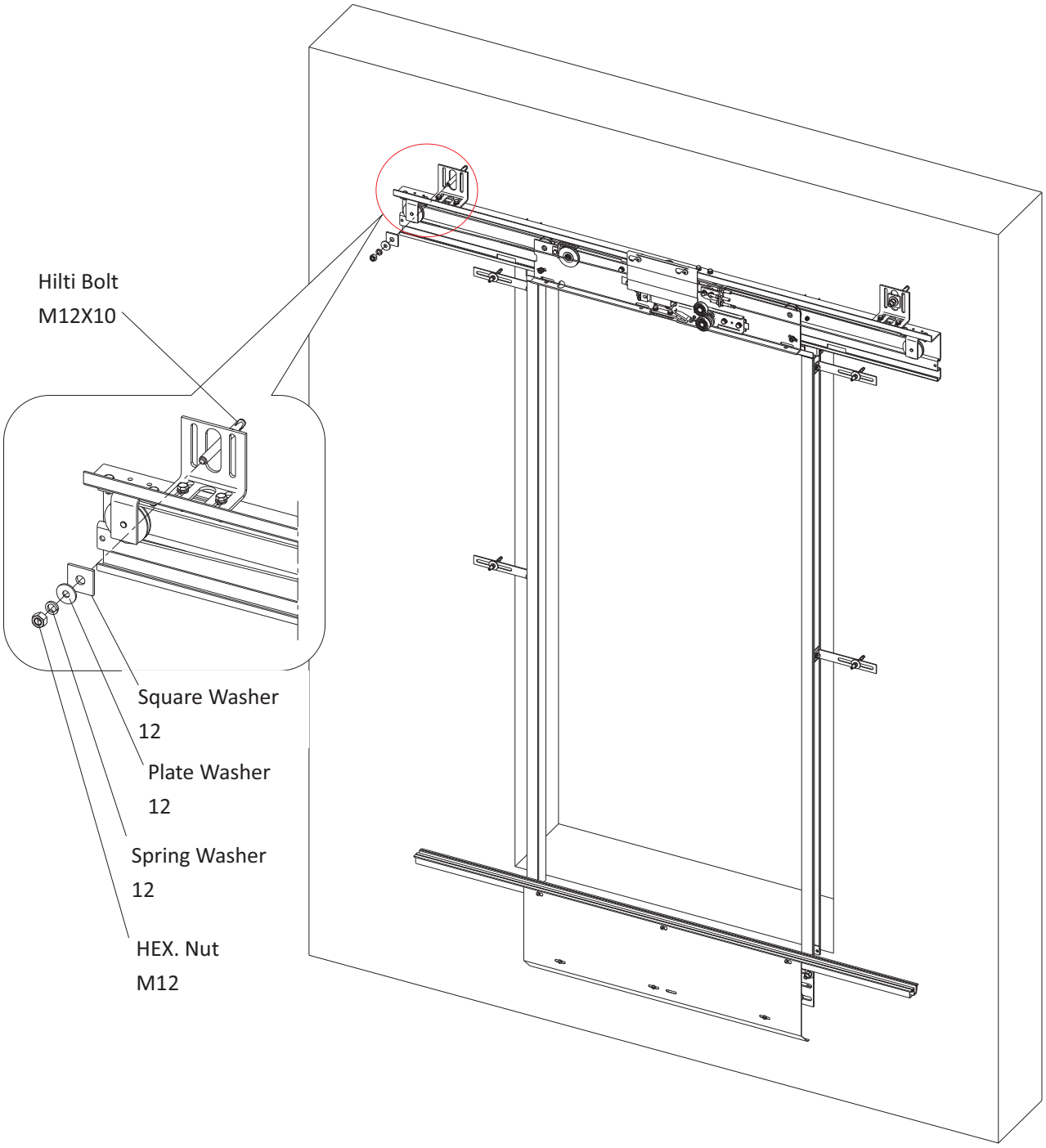

Hilti Bolt
M12X10
Square Washer
12
Plate Washer
12
Spring Washer
12
HEX. Nut
M12

Figure 5-13

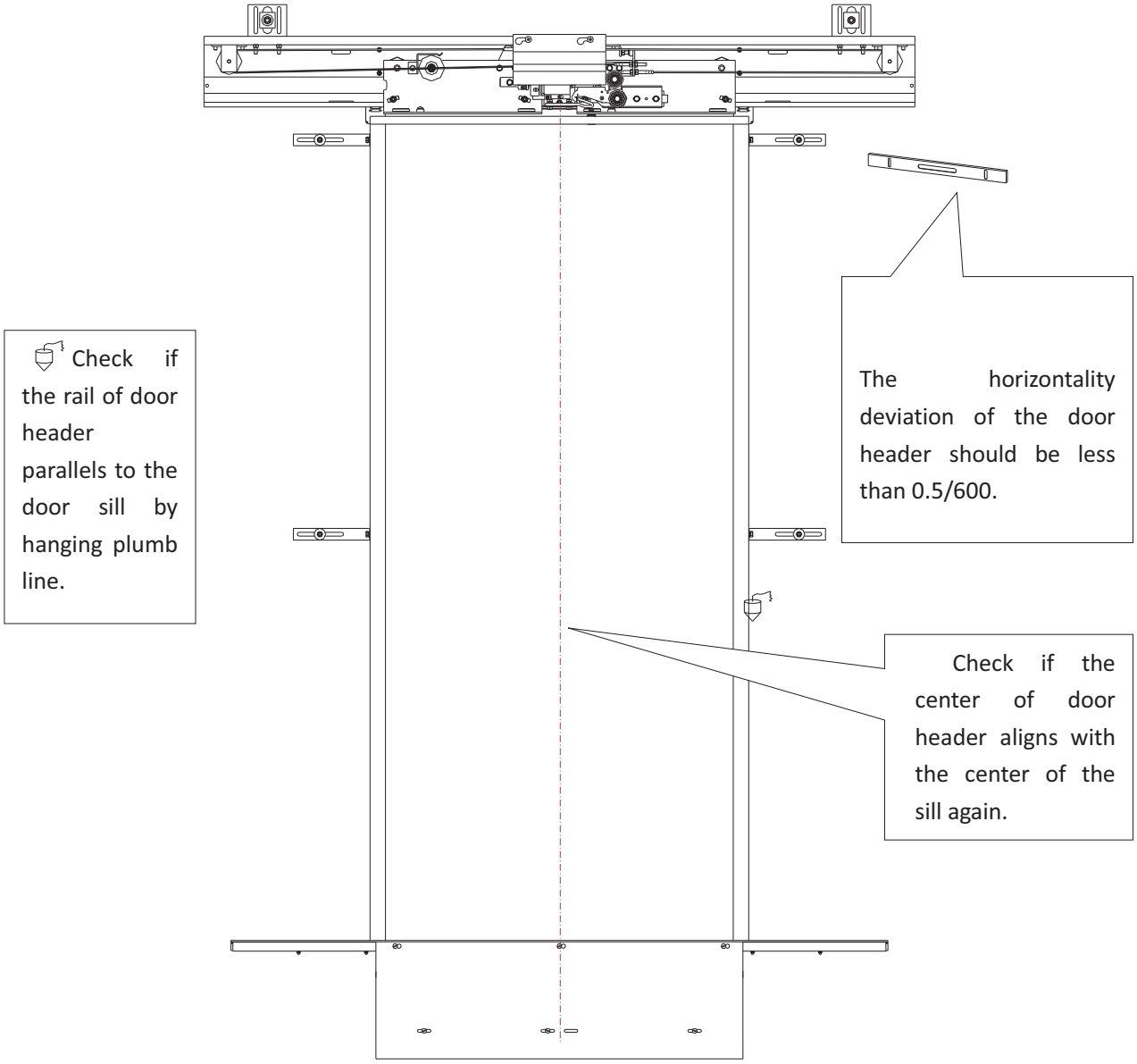

Check if the rail of door header parallels to the door sill by hanging plumb line.
The horizontality deviation of the door header should be less than 0.5/600.
Check if the center of door header aligns with the center of the sill again.

Figure 5-14

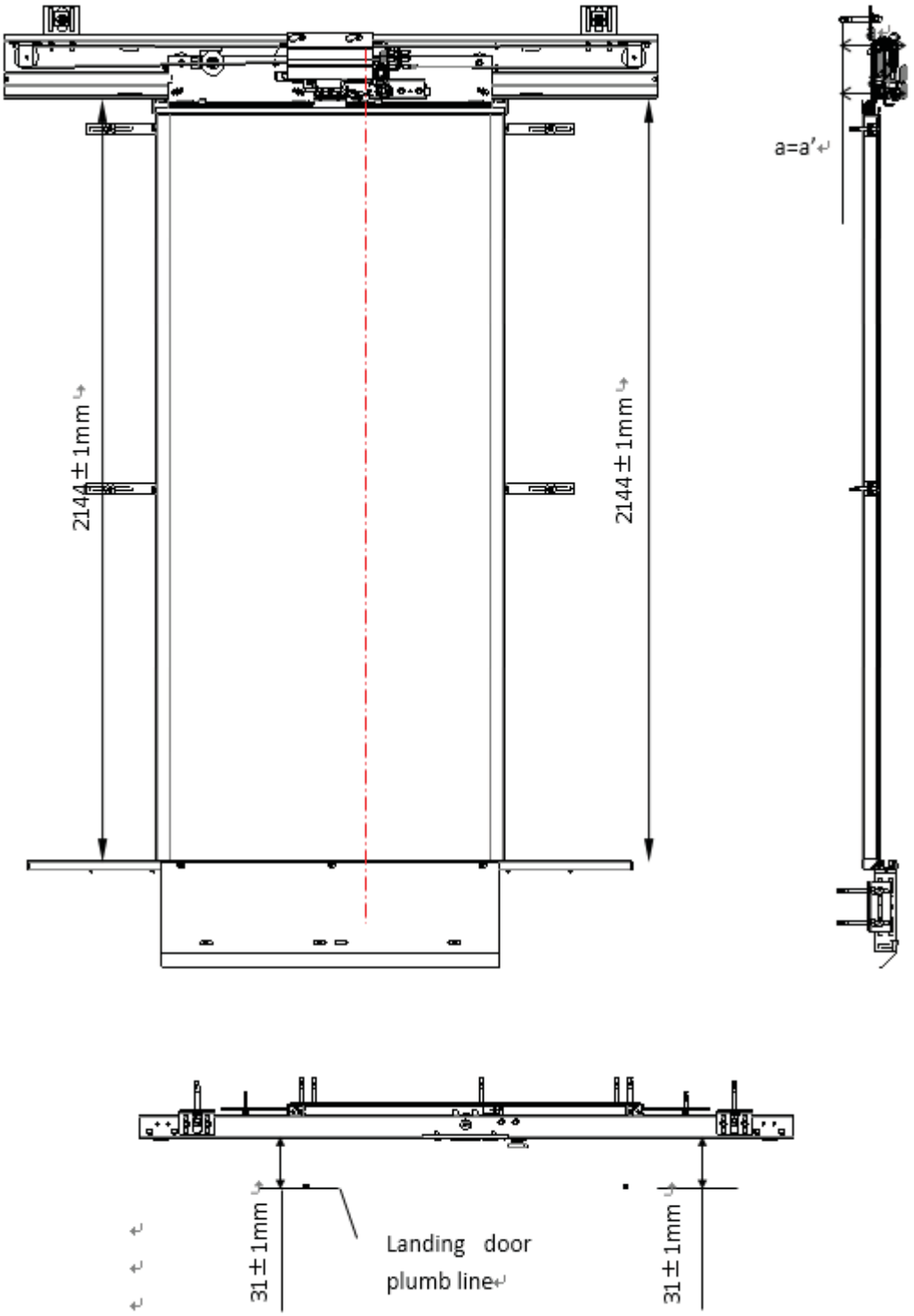


Figure 5-15

5.4 Installation of landing door panel

Step	Instruction	Fig
1	Connect landing door panel to door header and assemble guide shoes.	Figure 5-16
2	Install another panel by same way.	N/A
3	Adjust the door panel.	Figure 5-17

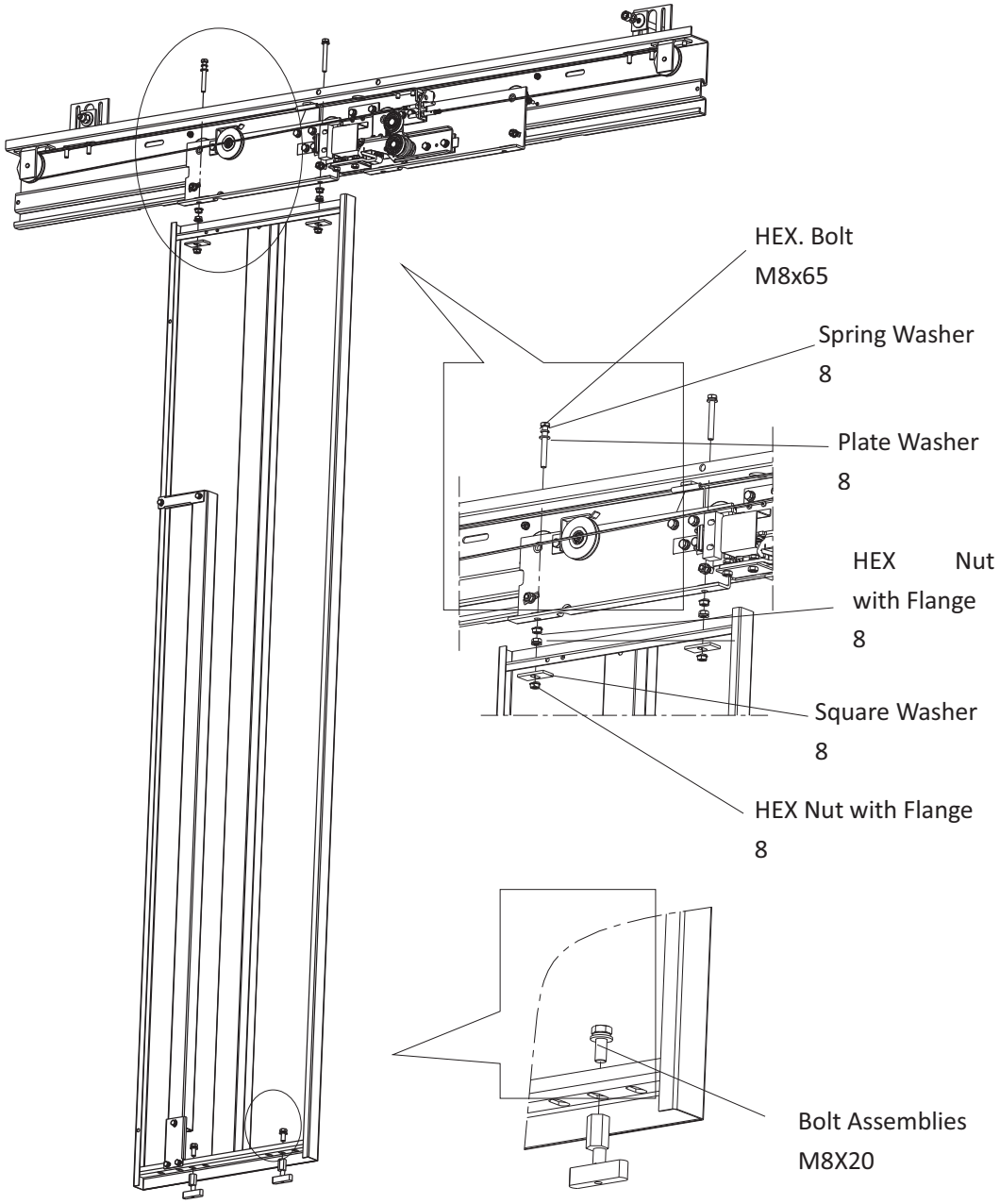
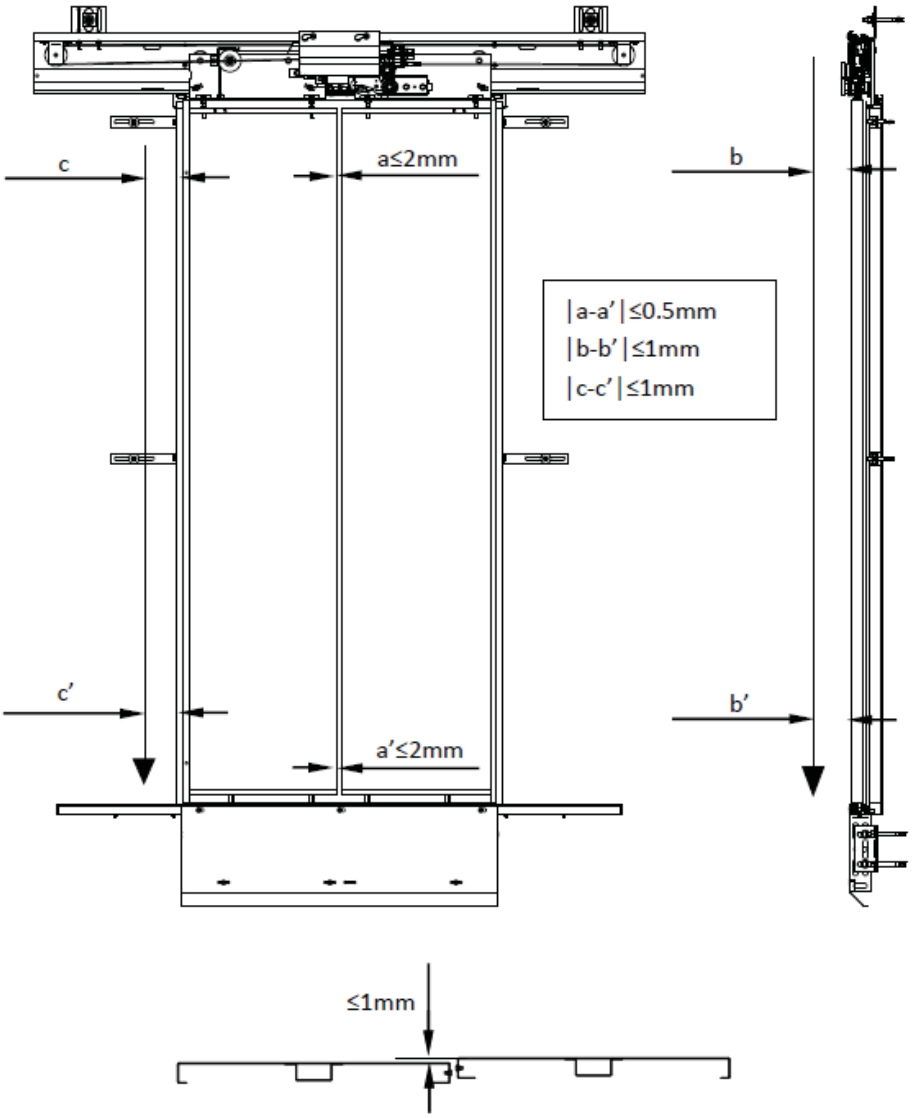


Figure 5-16



Adjust four up thrust rollers on hanging plate to keep 0.2~0.5mm clearance between roller and rail.

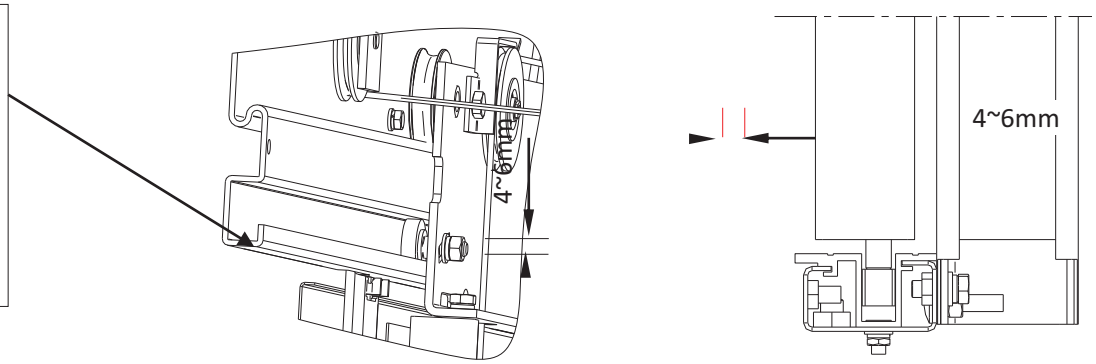


Figure 5-17

5.5 Installation of door close weight

Step	Instruction	Fig
1	Connect the door close weight to the door header.	Figure 5-18
2	Connect the cover plate to the door header.	Figure 5-19

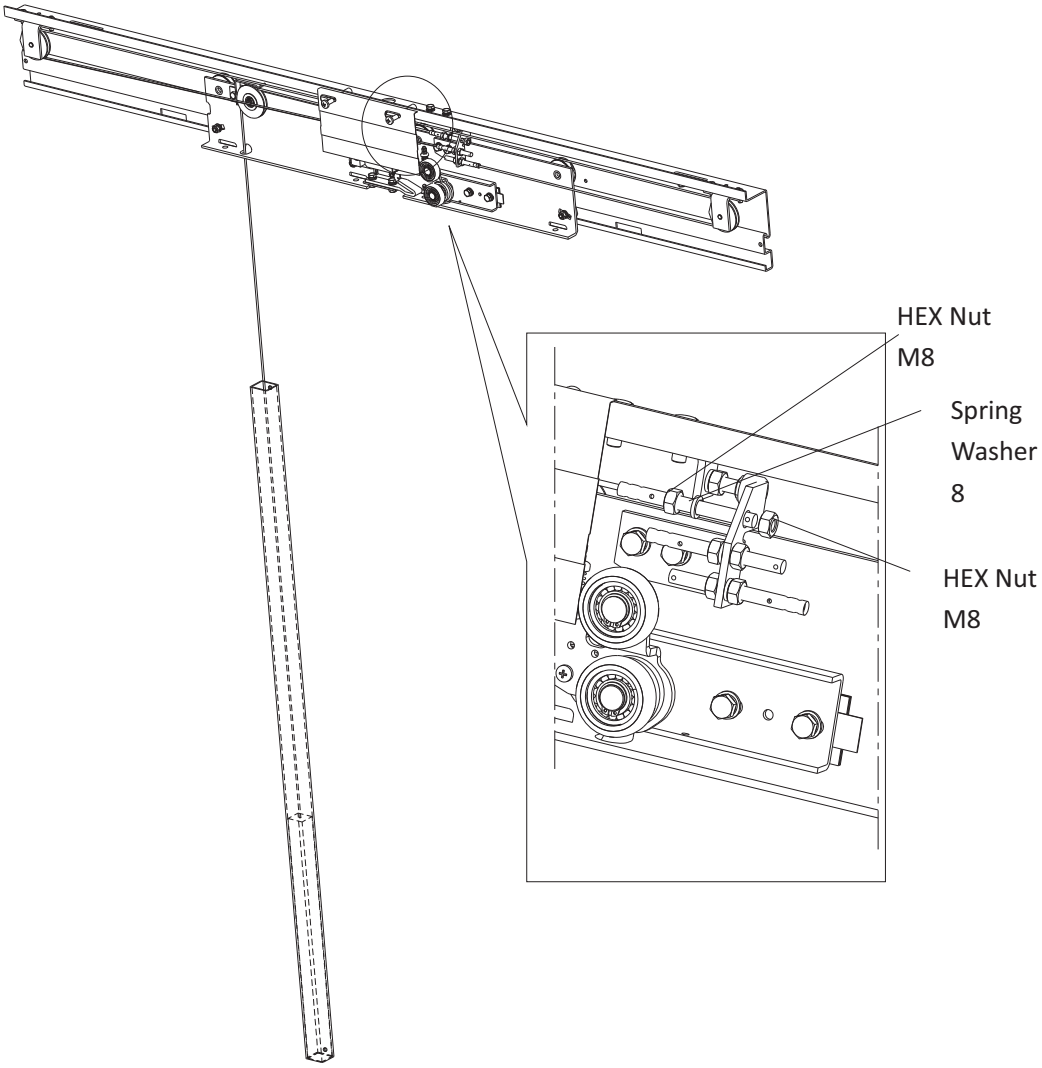


Figure 5-18

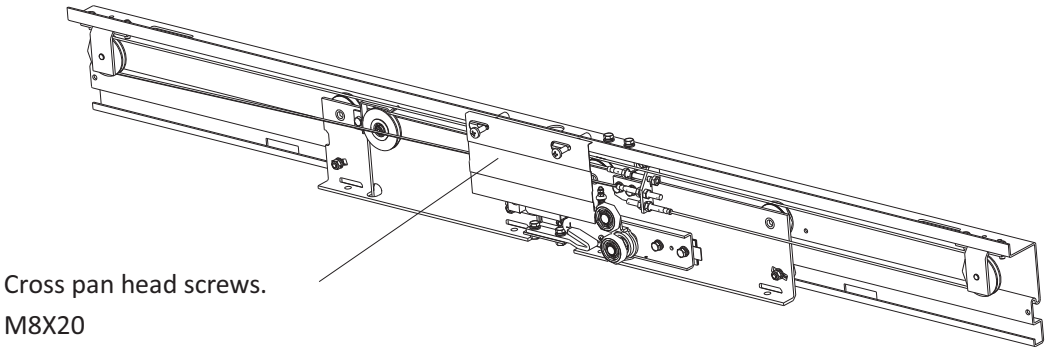


Figure 5-19

5.6 Adjust landing door lock

Step	Instruction	Fig
1	Adjust landing door lock clearance.	Figure 5-20

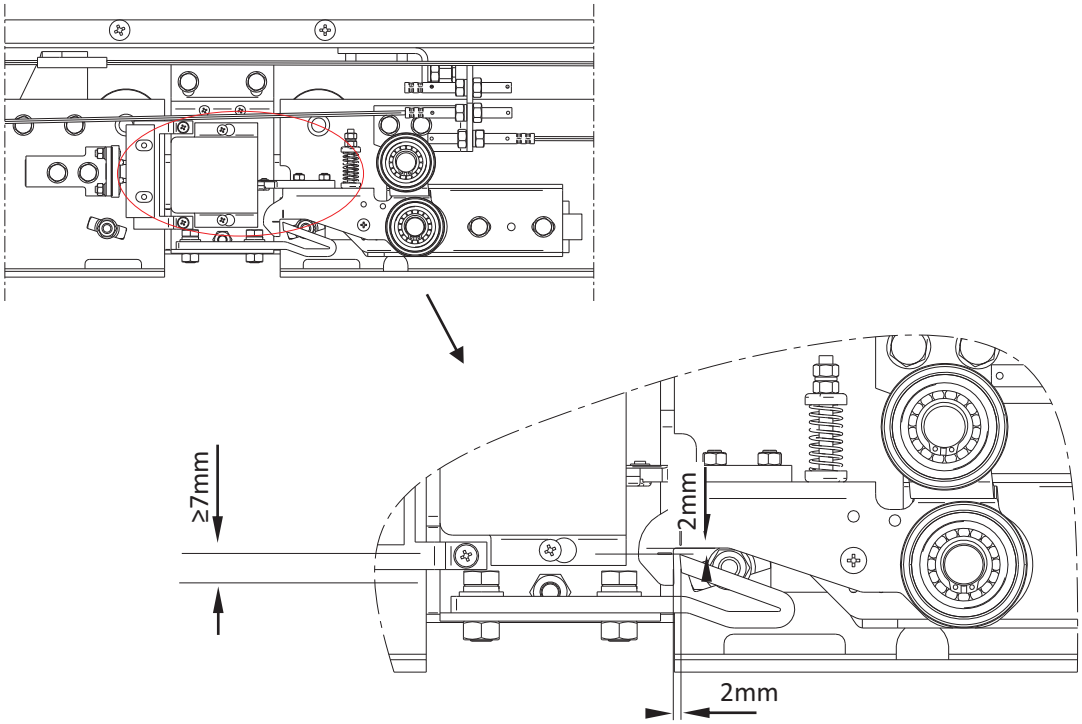


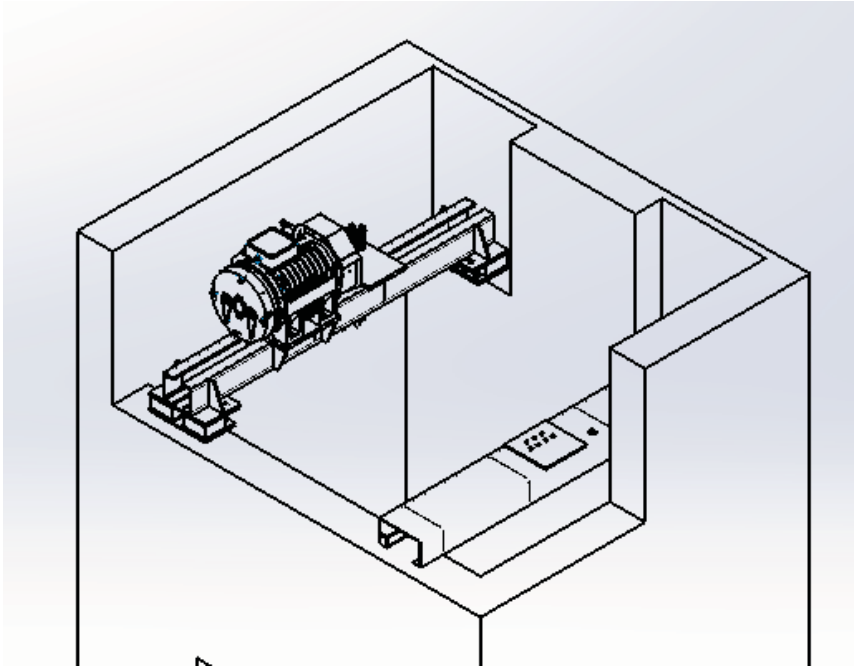
Figure 5-20

Notice：

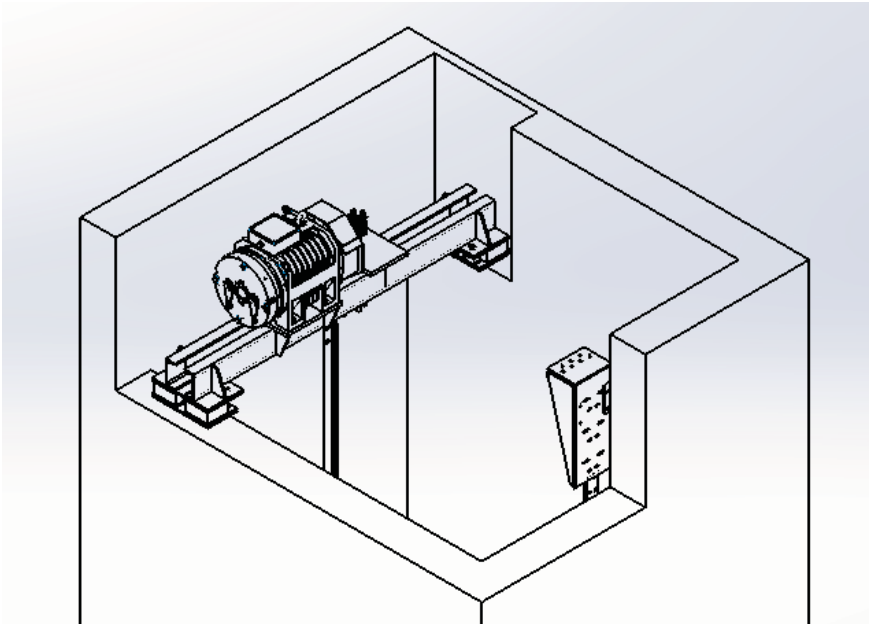
1. The mesh depth of lock hook and lock tongue should be not less than 7mm.
2. To keep 2mm clearance between lock hook and lock tongue.
3. Lock hook and lock tongue should be full mesh in level direction.
4. Active contact and still contact of door lock should be centered mesh; the compression of the contact should

6 Installation of machine

Machine installation overall picture:



rope hitch plate on the beam



rope hitch plate on the rail

6.1 Installation of rope hitch plate(on the beam)

Step	Instruction	Fig
1	Put the rope hitch beam on the bearing plate and adjust it refer to the layout. After adjustment, fix them onto the bearing plate by welding.(>630kg)	Figure 6-1

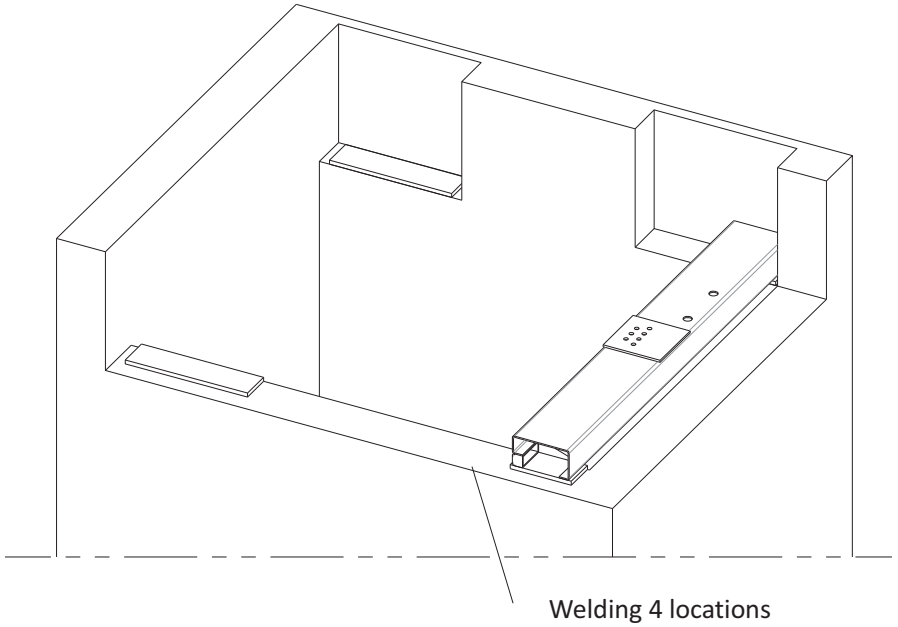


Figure 6-1

6.2 Installation of rope hitch plate(on the rail)

Step	Instruction	Fig
1	Put the rope hitch beam on the rail.	Figure 6-2

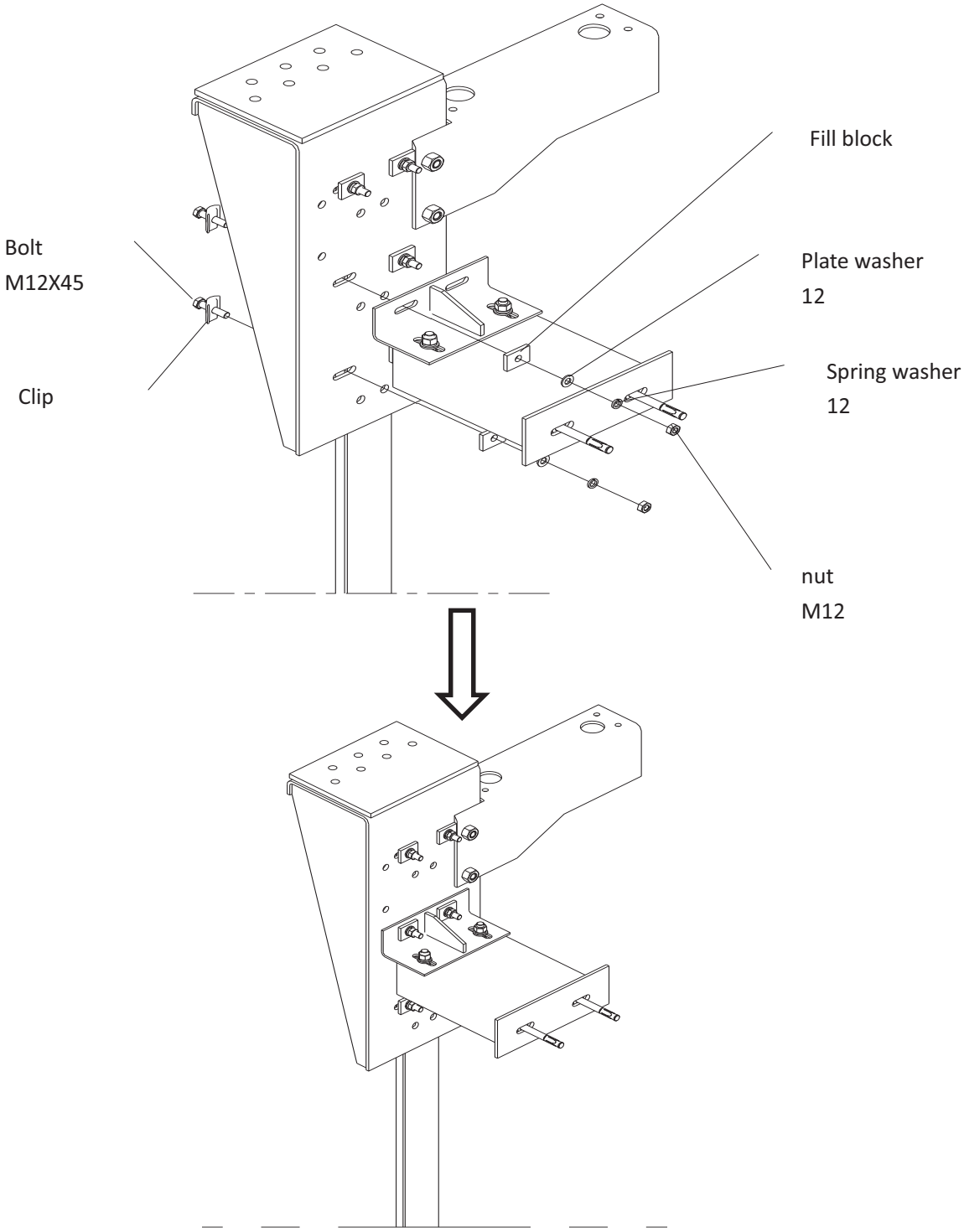


Figure 6-2

6.3 Installation of machine beam

Step	Instruction	Fig
1	Put the connection plate on the bearing plate and adjust it refer to the layout. After adjustment, fix them onto the bearing plate by welding.	Figure 6-3
2	Put the cover in the hole.	Figure 6-3

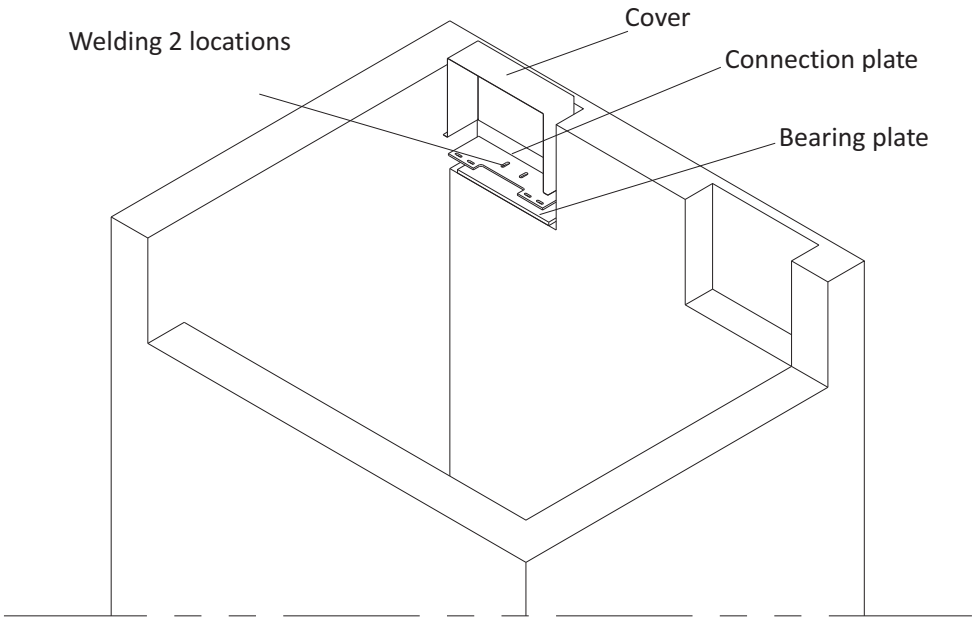


Figure 6-3

Step	Instruction	Fig
3	Connect rubbers to connection plates.	Figure 6-4
4	Connect machine beams to rubbers.	Figure 6-5

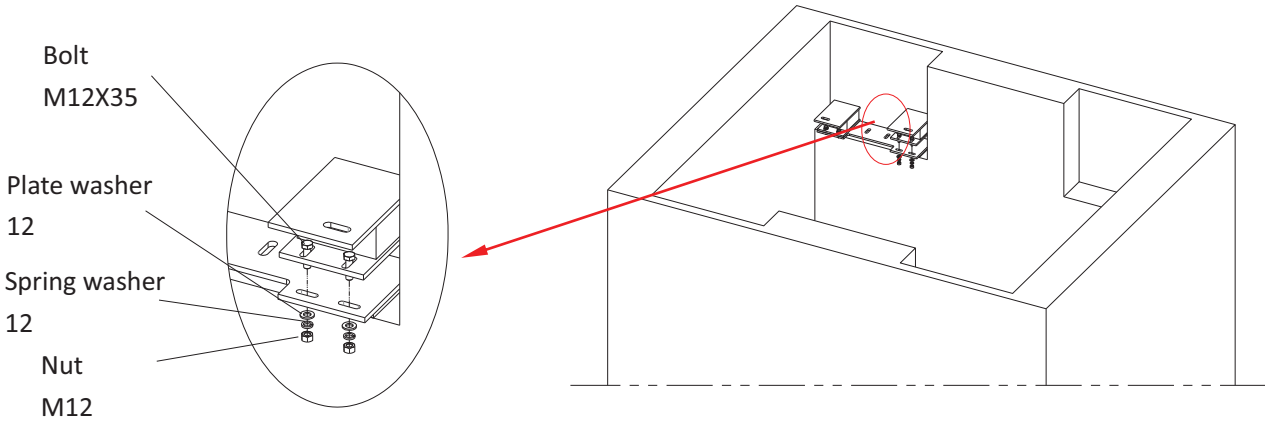


Figure 6-4

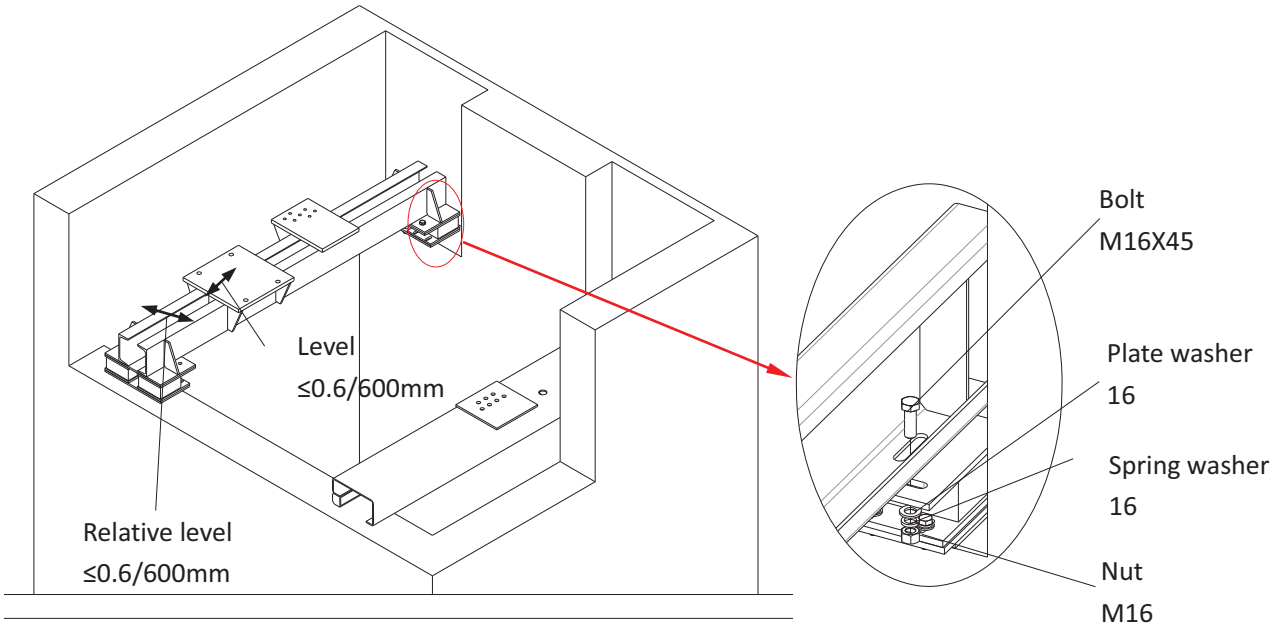


Figure 6-5

6.4 lifting of machine

Step	Instruction	Fig
1	Connect the chain block to the lifting hooks.	Figure 6-6
2	Use the chain block lift the machine.	Figure 6-7

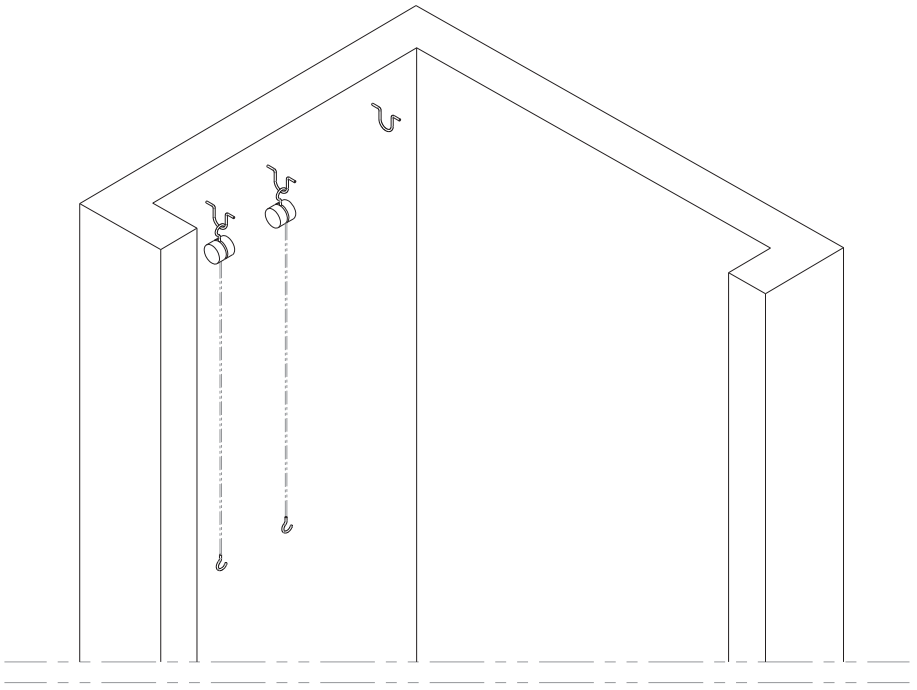


Figure 6-6

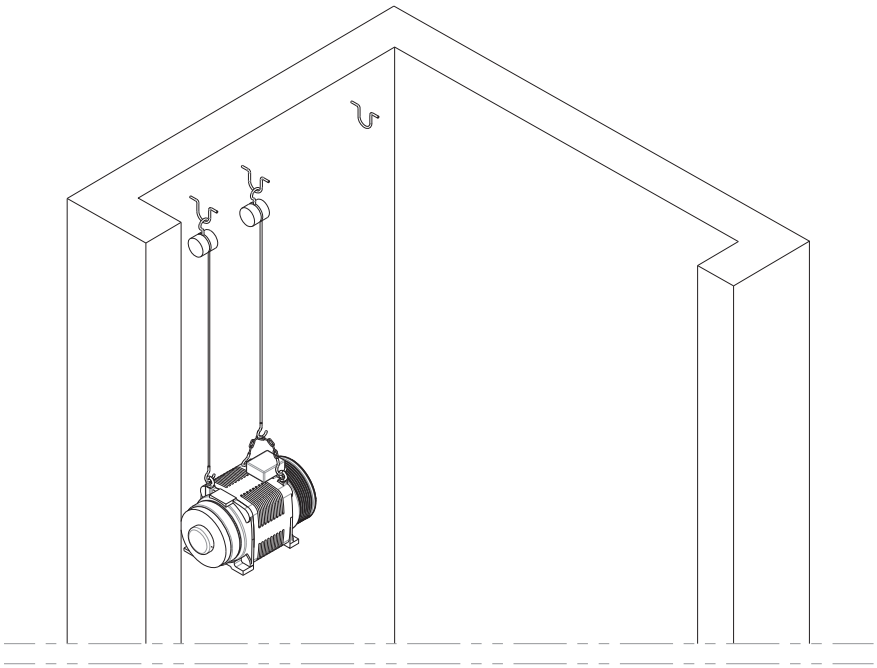


Figure 6-7

6.5 Installation of machine

Step	Instruction	Fig
1	Connect the machine to the beam.	Figure 6-8
2	Adjust the traction sheave.	Figure 6-9
3	Installation bolt to protect the beam	Figure 6-10

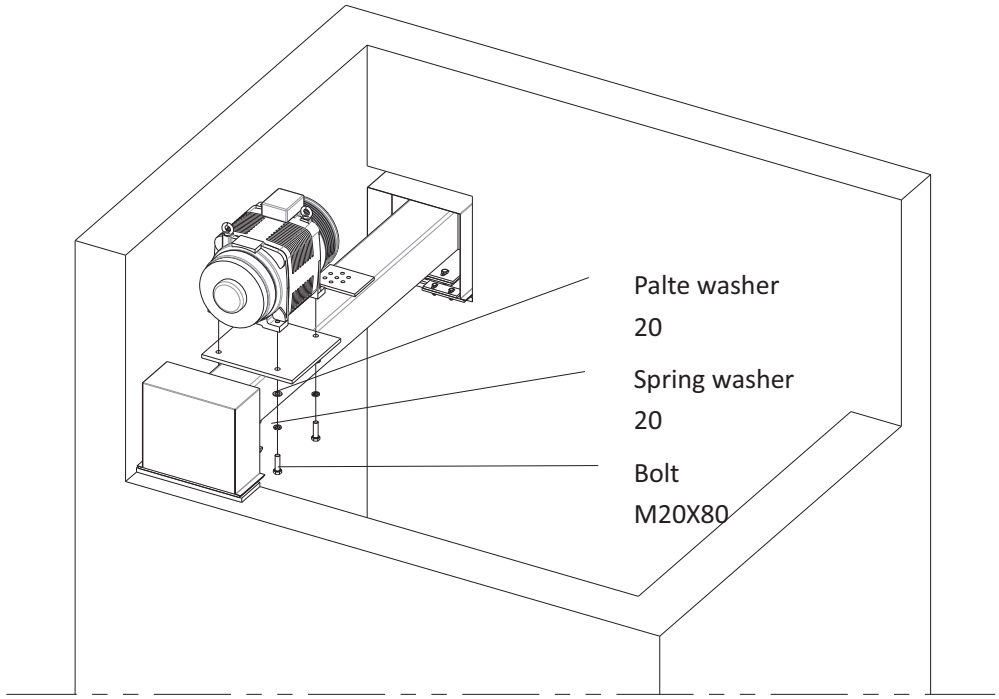


Figure 6-8

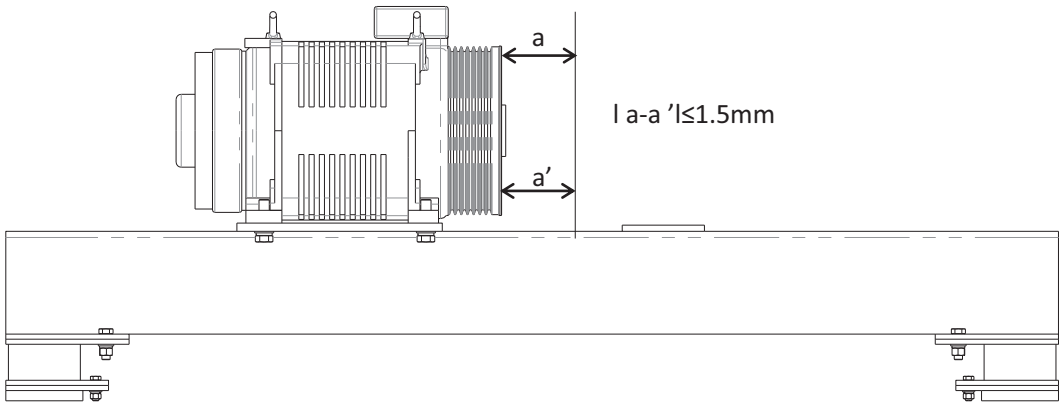


Figure 6-9

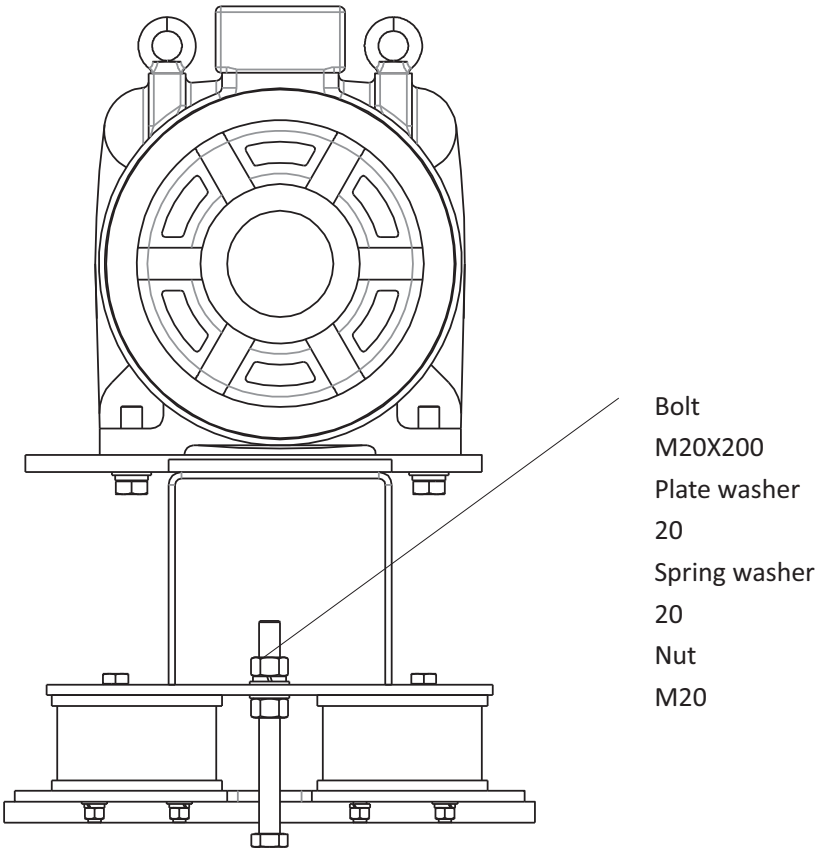
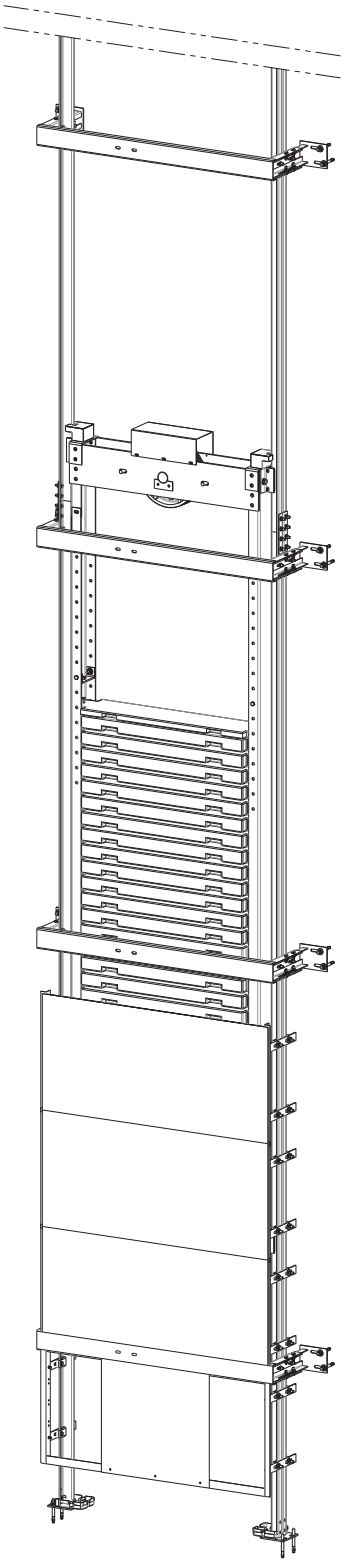


Figure 6-10

7 Installation of counterweight

Counterweight installation overview:



7.1 Installation of counterweight frame

Step	Instruction	Fig
1	Connect the counterweight base under the frame.	Figure 7-1
2	Place the CWT frame on the upper part.	Figure 7-2

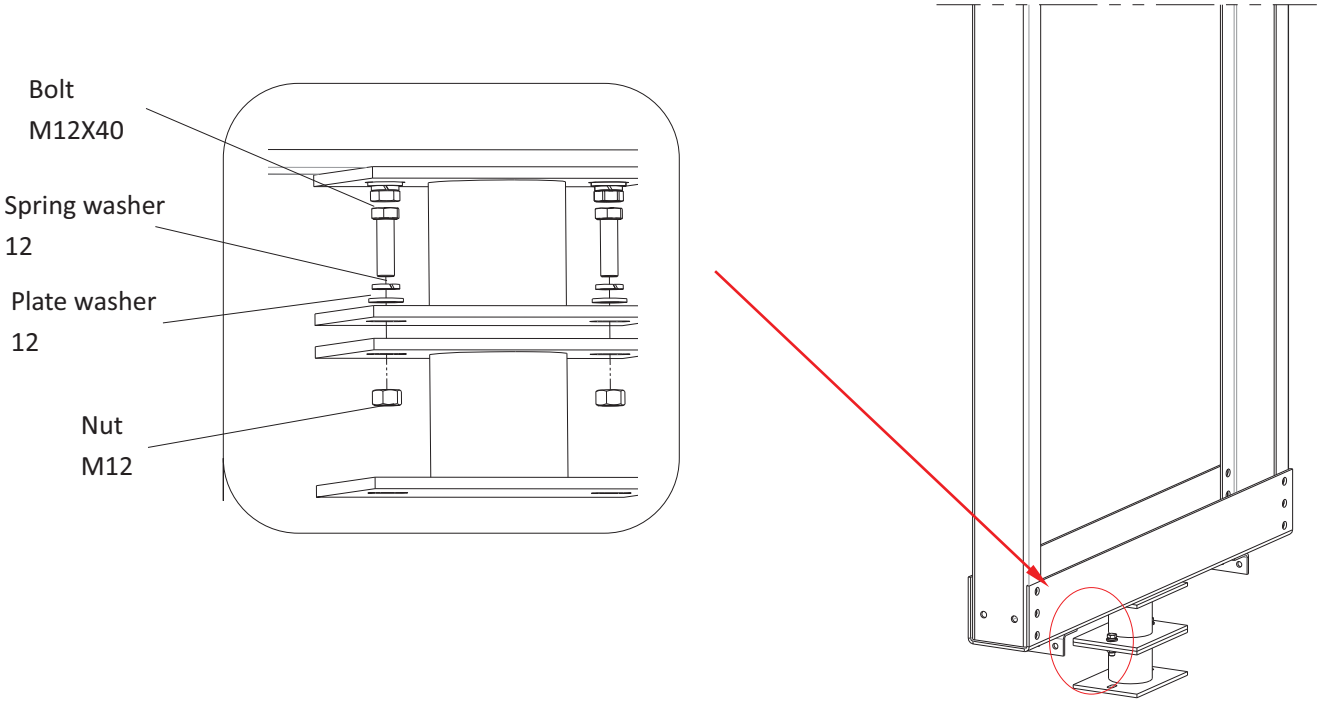
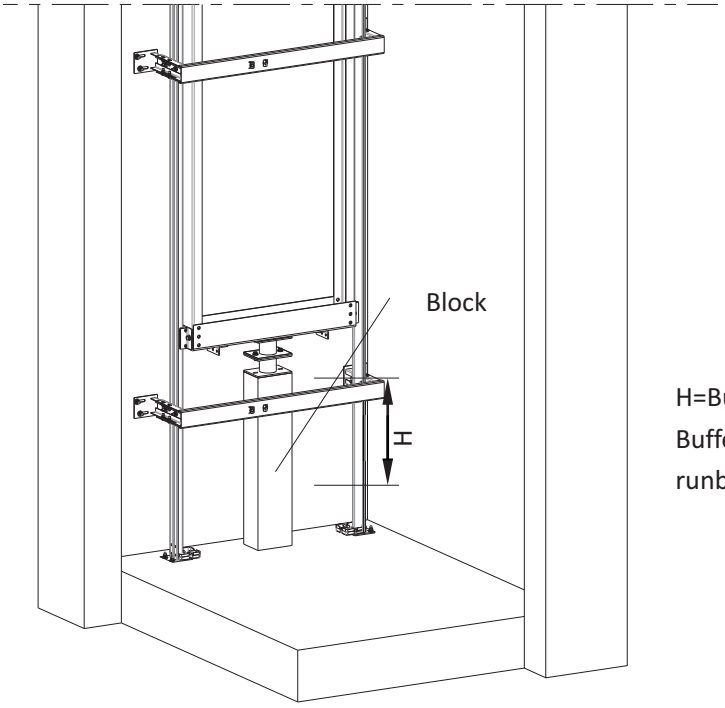


Figure 7-1



H=Buffer base height + Buffer height + CWT runby

Figure 7-2

7.2 Installation of counterweight accessories

Step	Instruction	Fig
1	Install the guide shoes on the side of counterweight frame.	Figure 7-3
2	Add counterweight filler into the counterweight frame.	Figure 7-4
3	Install the counterweight filler pressing plates.	Figure 7-5
4	Install the oil bottle on the counterweight.	Figure 7-6

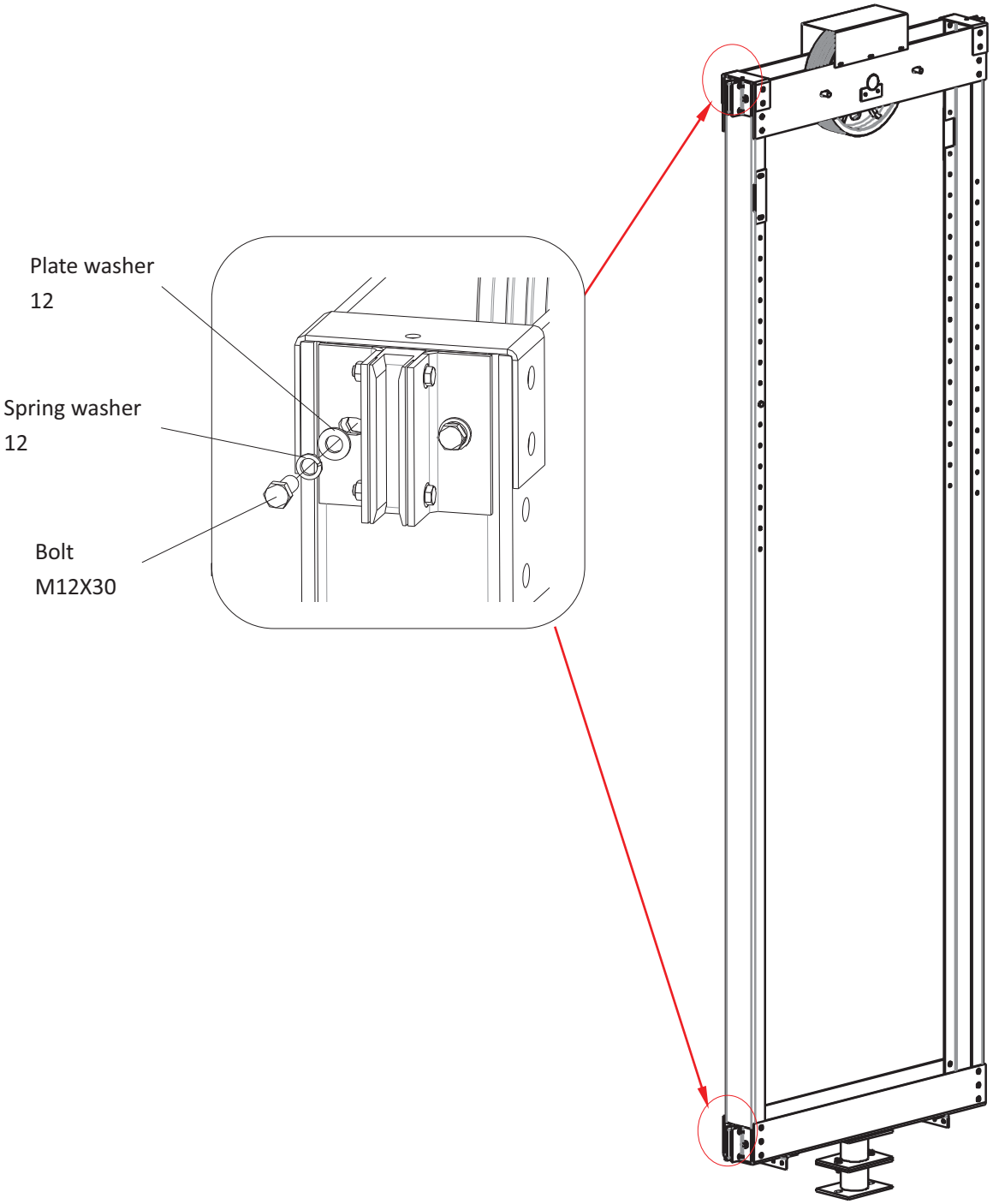


Figure 7-3

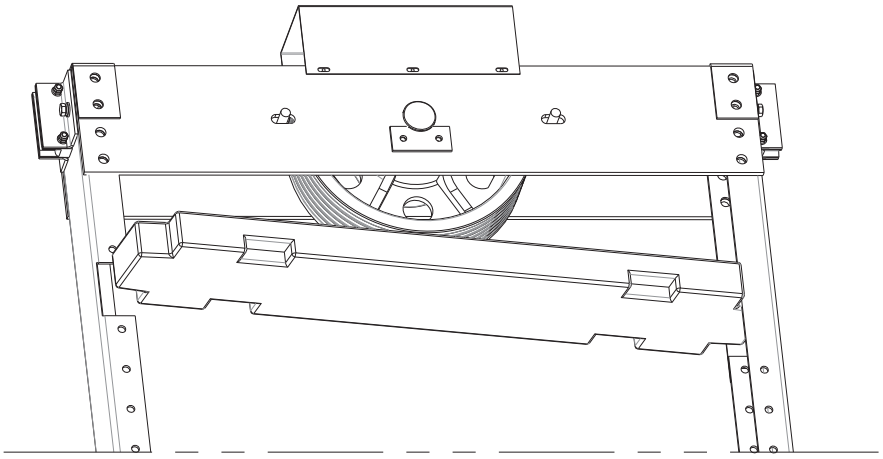


Figure 7-4

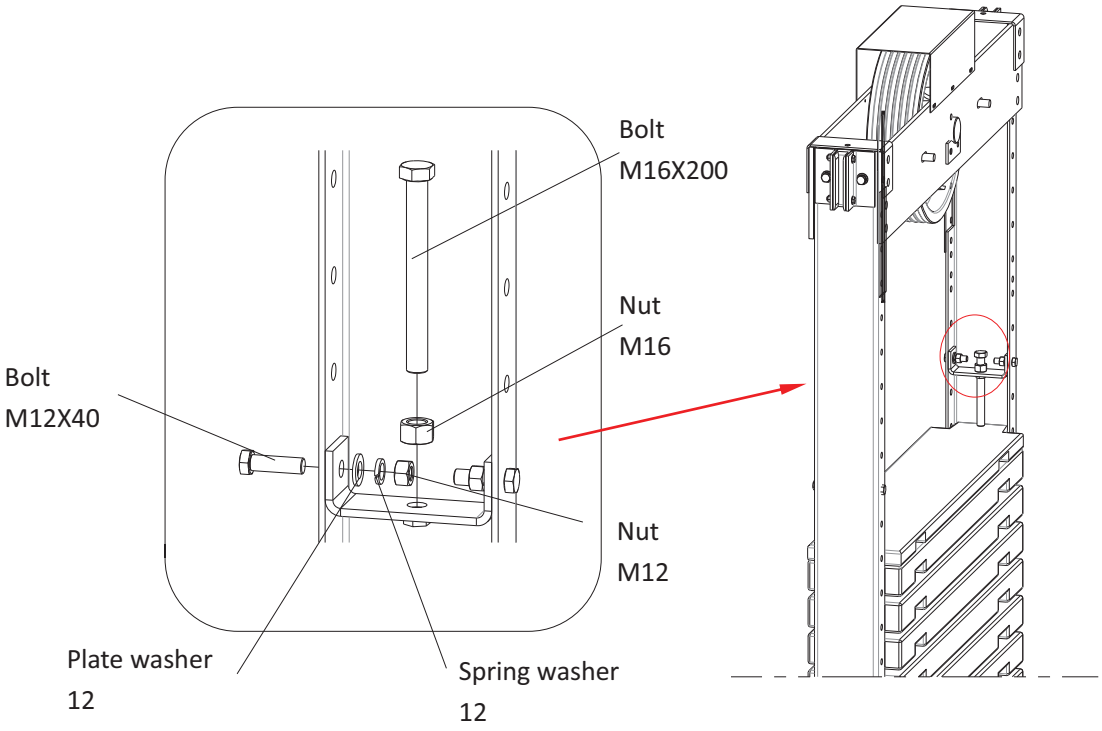


Figure 7-5

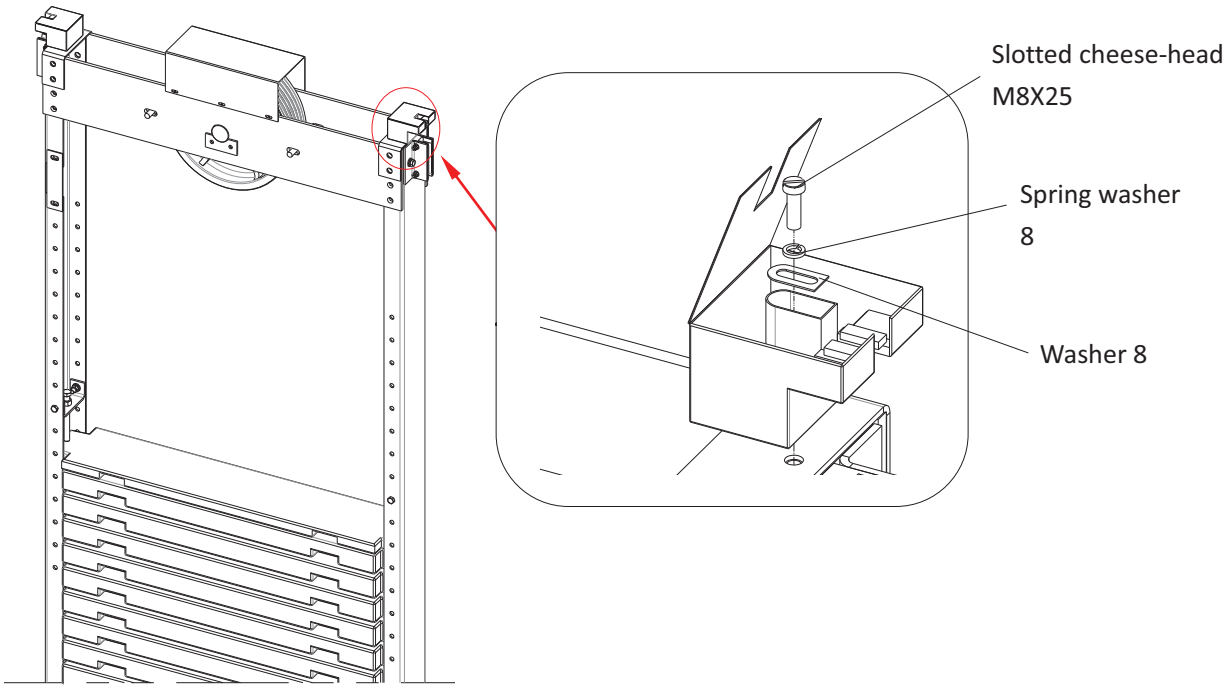


Figure 7-6

7.3 Installation of counterweight screen

Step	Instruction	Fig
1	The distance from the bottom of the screen to the pit floor is less than 300mm.	Figure 7-7
2	Connect the support on the frame of counterweight screen.	Figure 7-8
3	Connect the counterweight screen net on the guide rail.	Figure 7-9

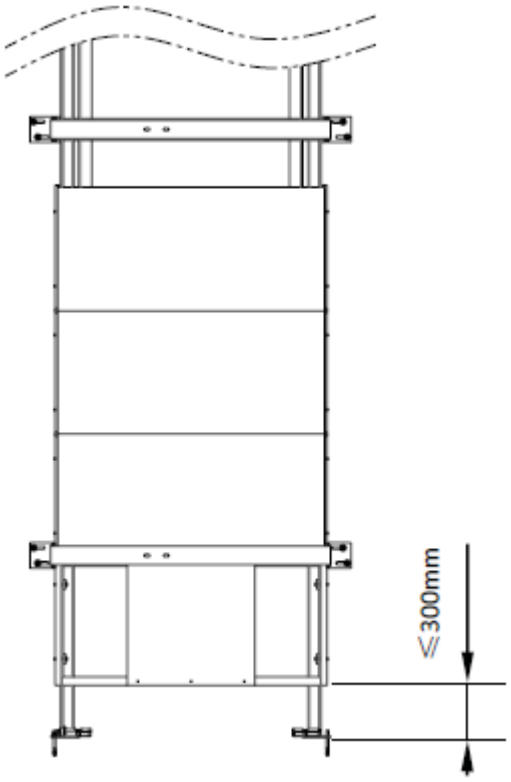


Figure 7-7

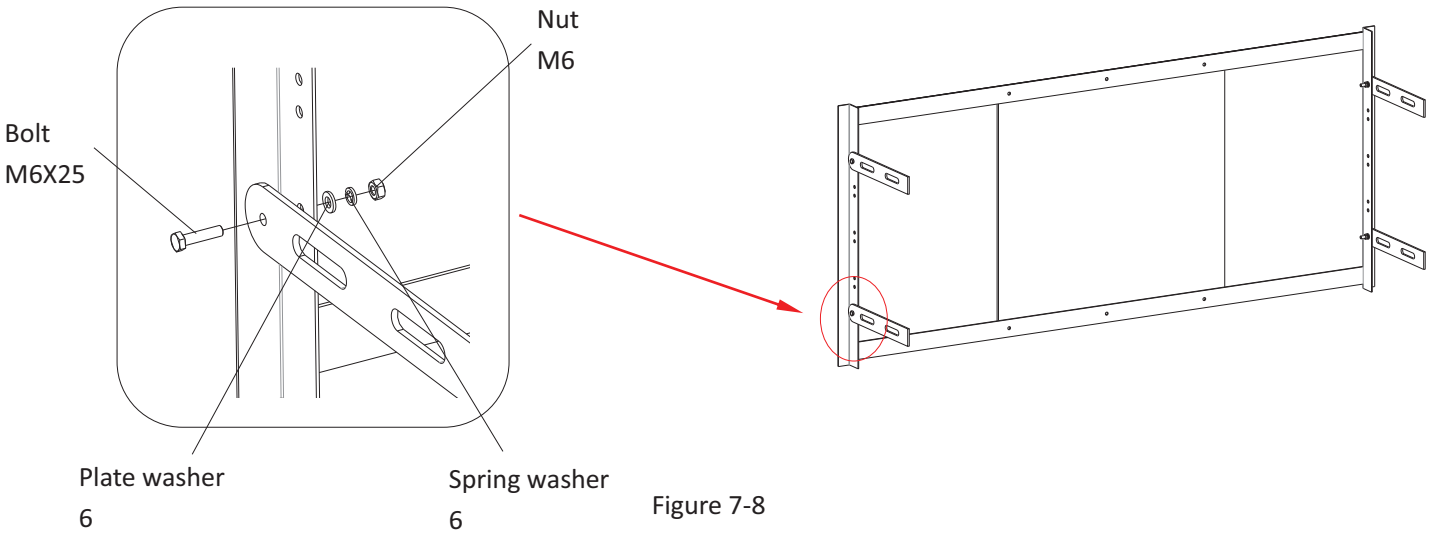


Figure 7-8

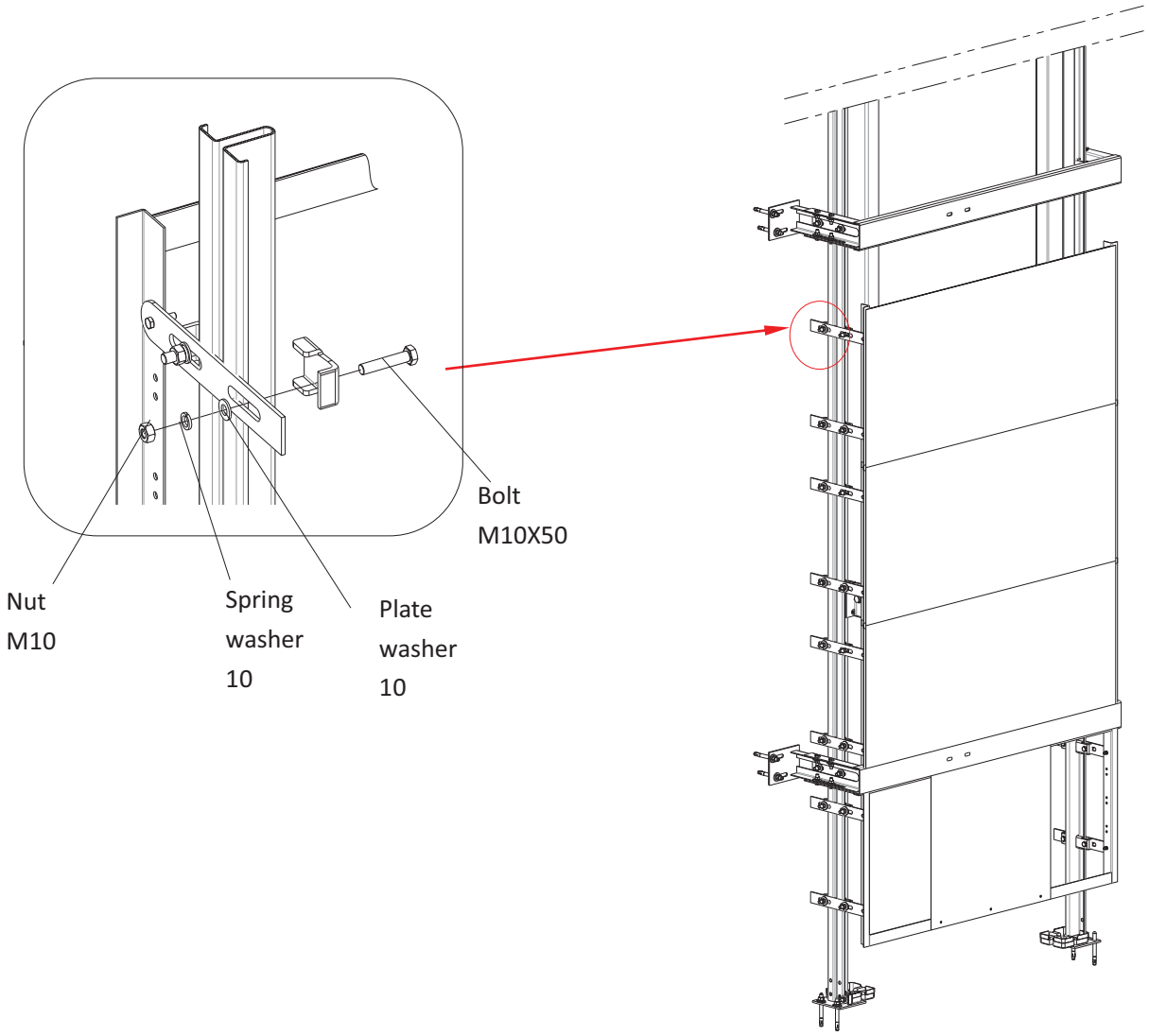
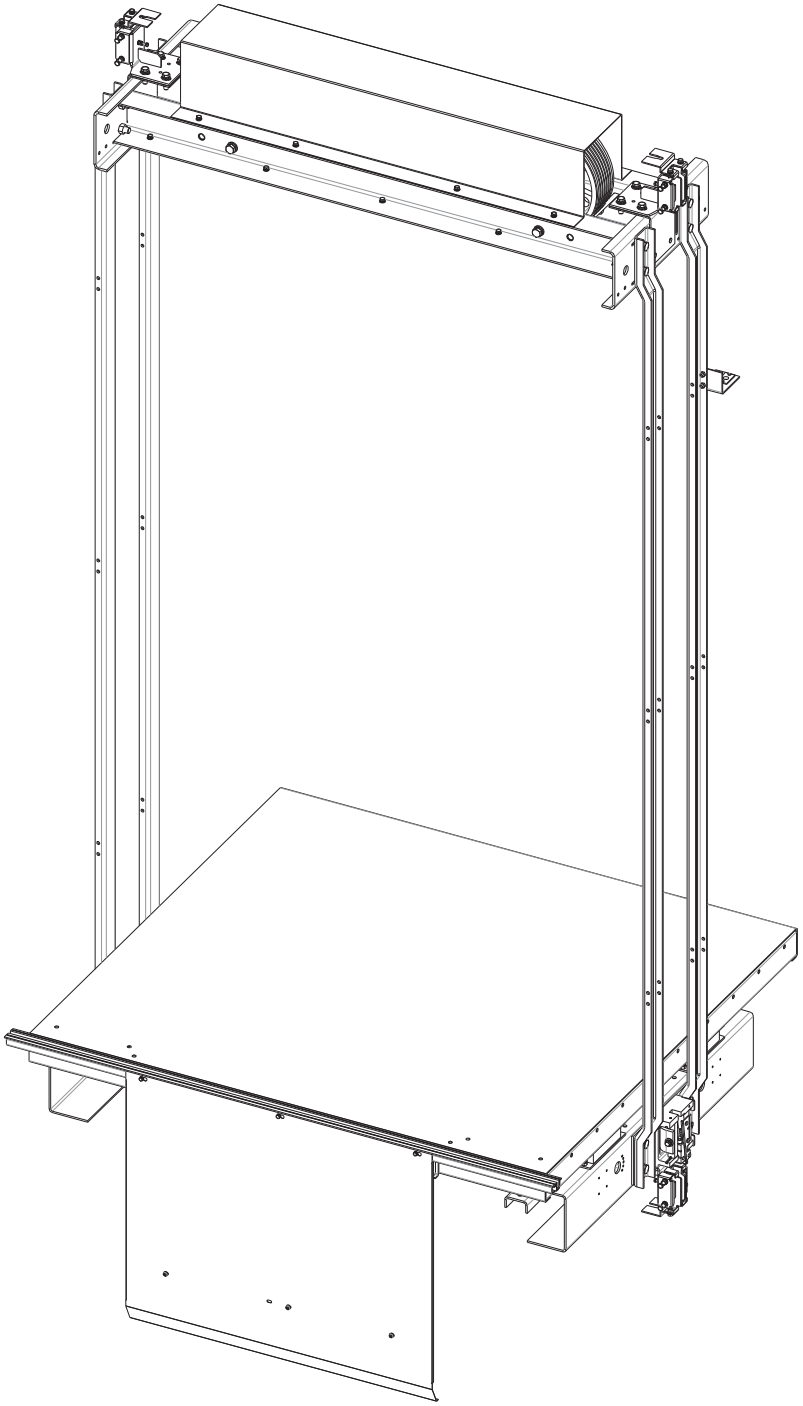


Figure 7-9

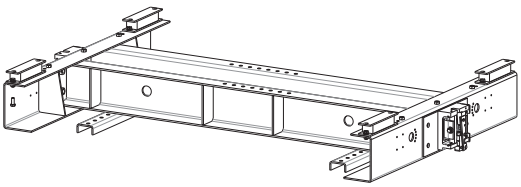
8 Installation of car frame

Car Frame installation overview:

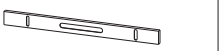


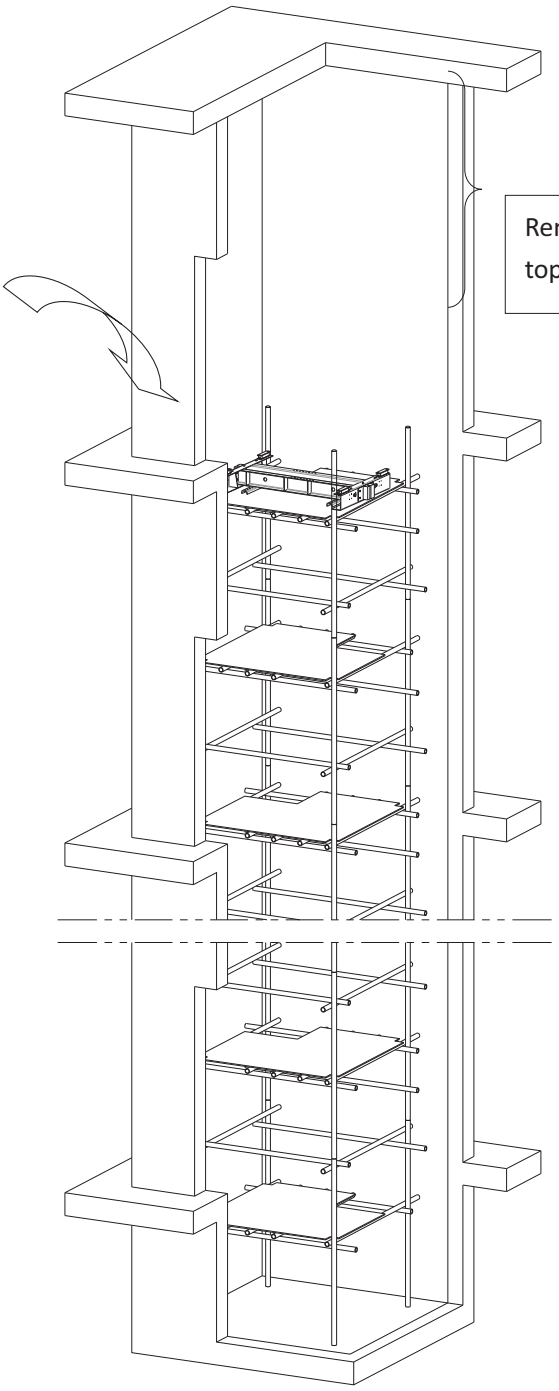
8.1 Installation of sub-frame

Step	Instruction	Fig
1	Remove the scaffold in the top of hoist-way.	Figure 8-1
2	Put sub-frame in to hoistway and adjust the horizontality.	Figure 8-1



The horizontality deviation of the sub-frame should be less than 1/1000.





Remove the scaffold at top

Figure 8-1

8.2 Installation of bottom guide

Step	Instruction	Fig
1	Install the bottom guide shoes on safety gear.	Figure 8-2

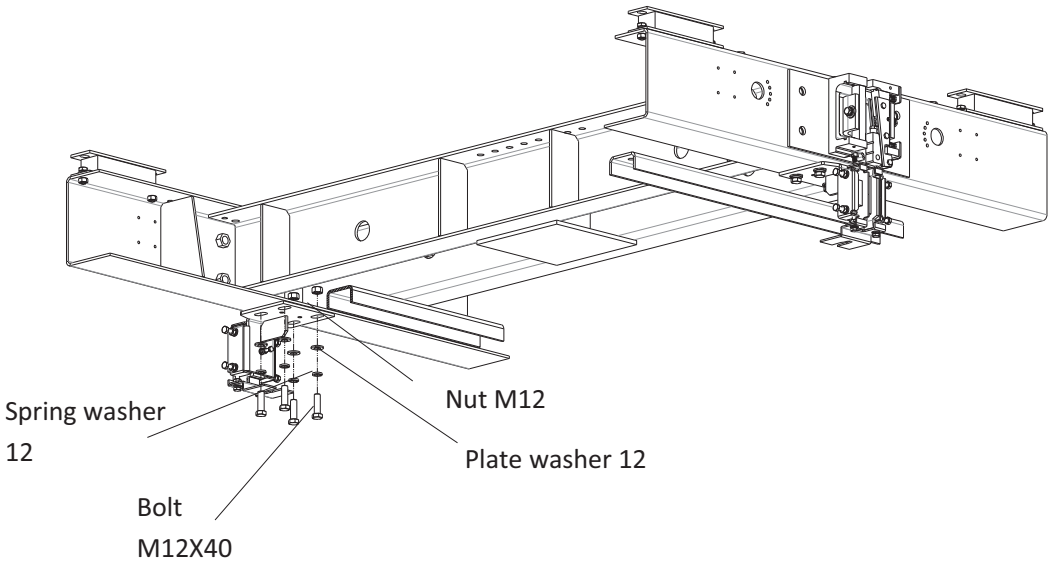


Figure 8-2

8.3 Installation of uprights

Step	Instruction	Fig
1	Fix bottom of uprights on the sub-frame.	Figure 8-3

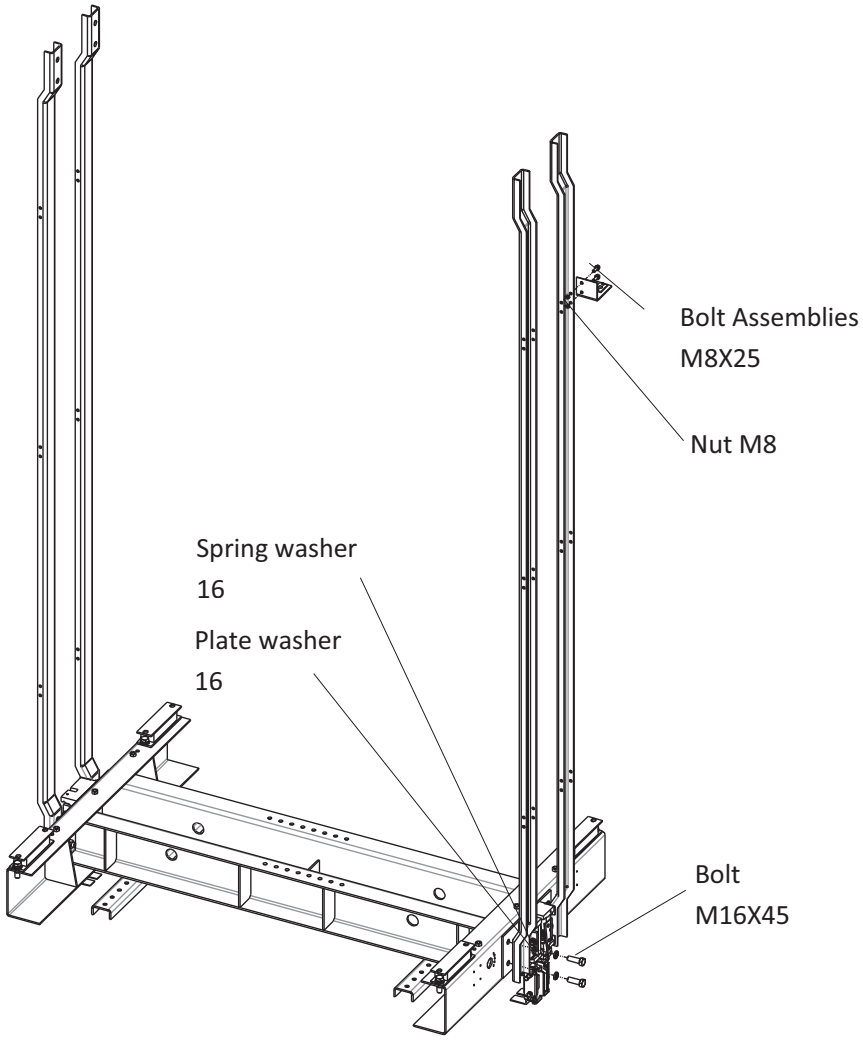


Figure 8-3

8.4 Installation of crosshead

Step	Instruction	Fig
1	Installation of cross-head beam.	Figure 8-4

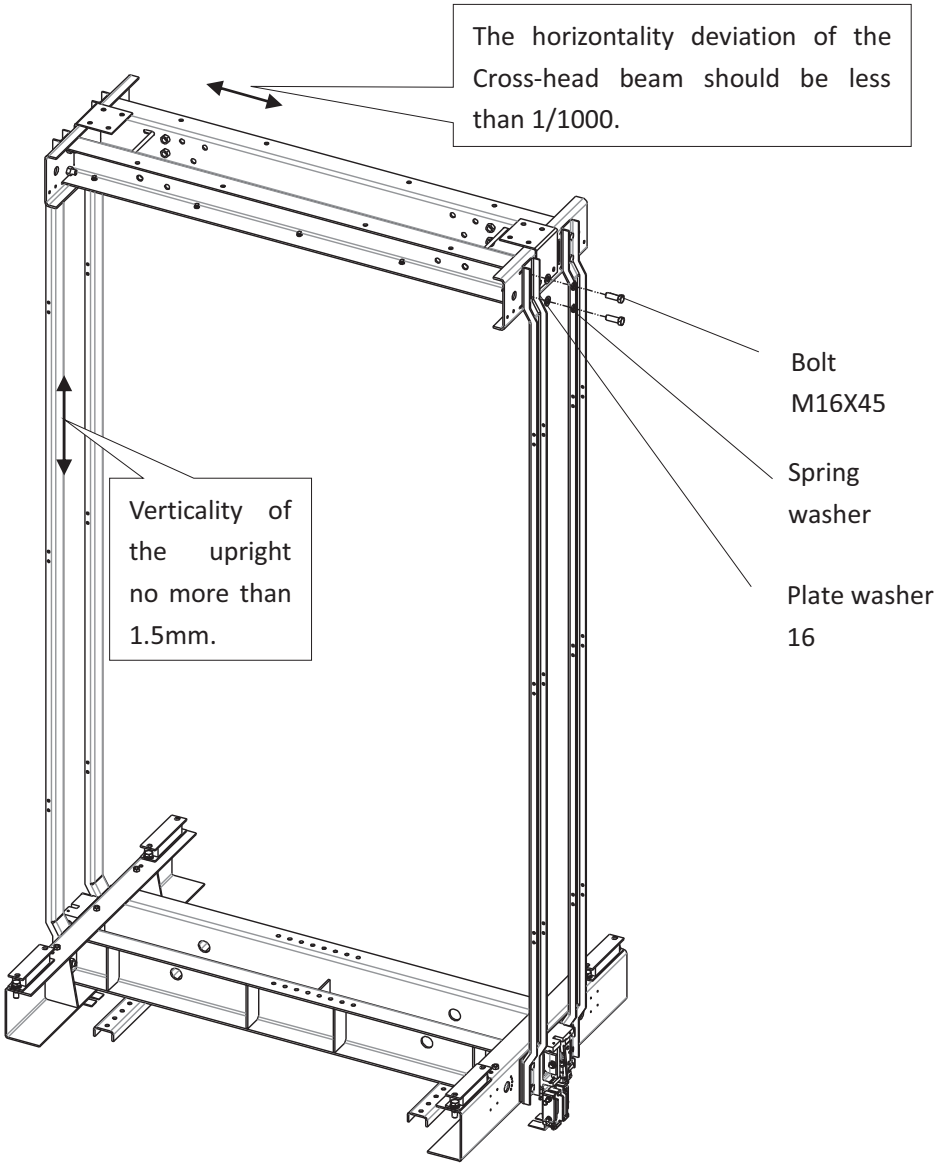


Figure 8-4

8.5 Installation of top guide

Step	Instruction	Fig
1	Installation of top guide shoes, fix on the crosshead.	Figure 8-5

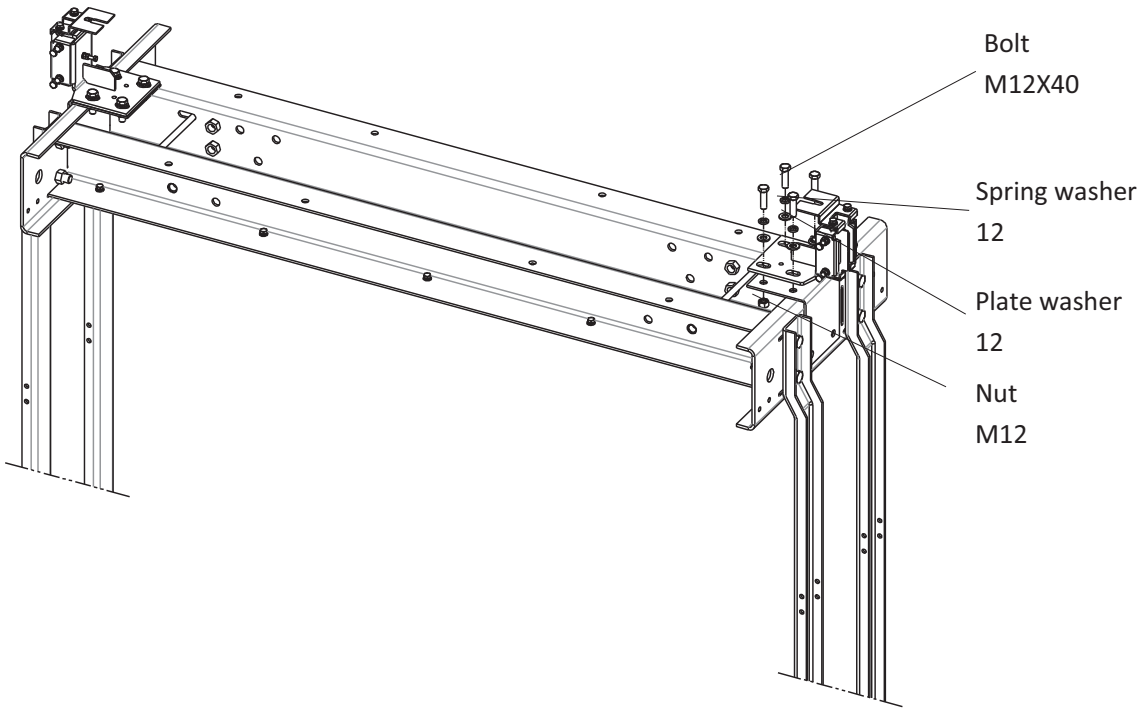


Figure 8-5

8.6 Installation of top of car sheave

Step	Instruction	Fig
1	Install top of car sheave on crosshead.	Figure 8-6
2	Connect the sheave guard on crosshead.	Figure 8-7

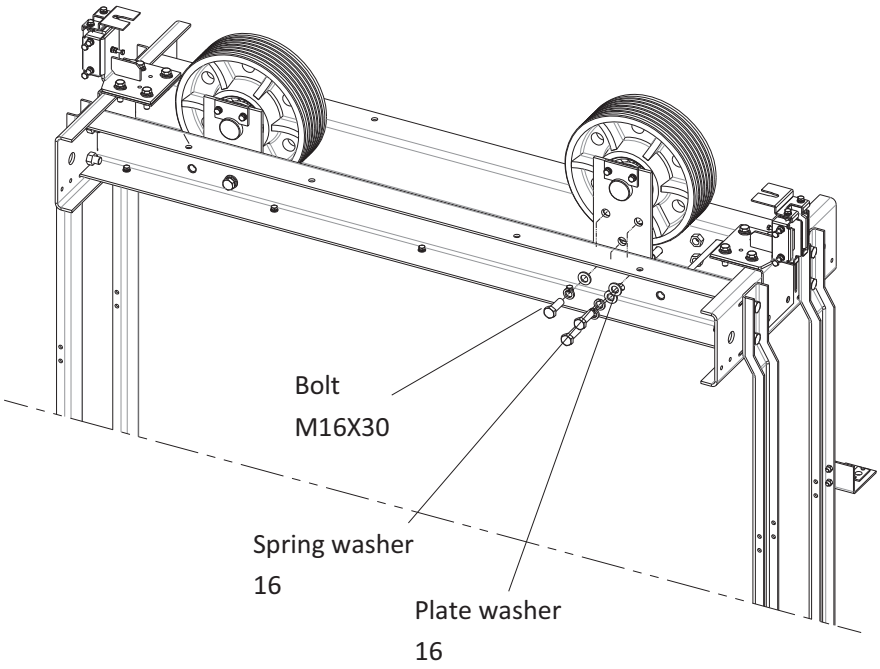


Figure 8-6

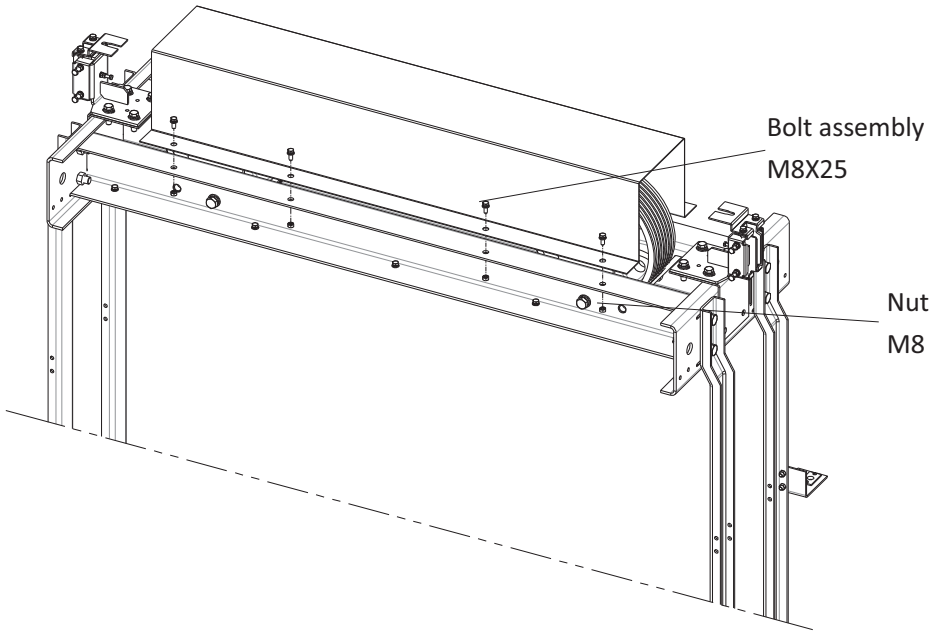


Figure 8-7

8.7 Installation of platform

Step	Instruction	Fig
1	Install car door sill support and sill.	Figure 8-9
2	Install the toe guard to the bracket of sill.	Figure 8-10

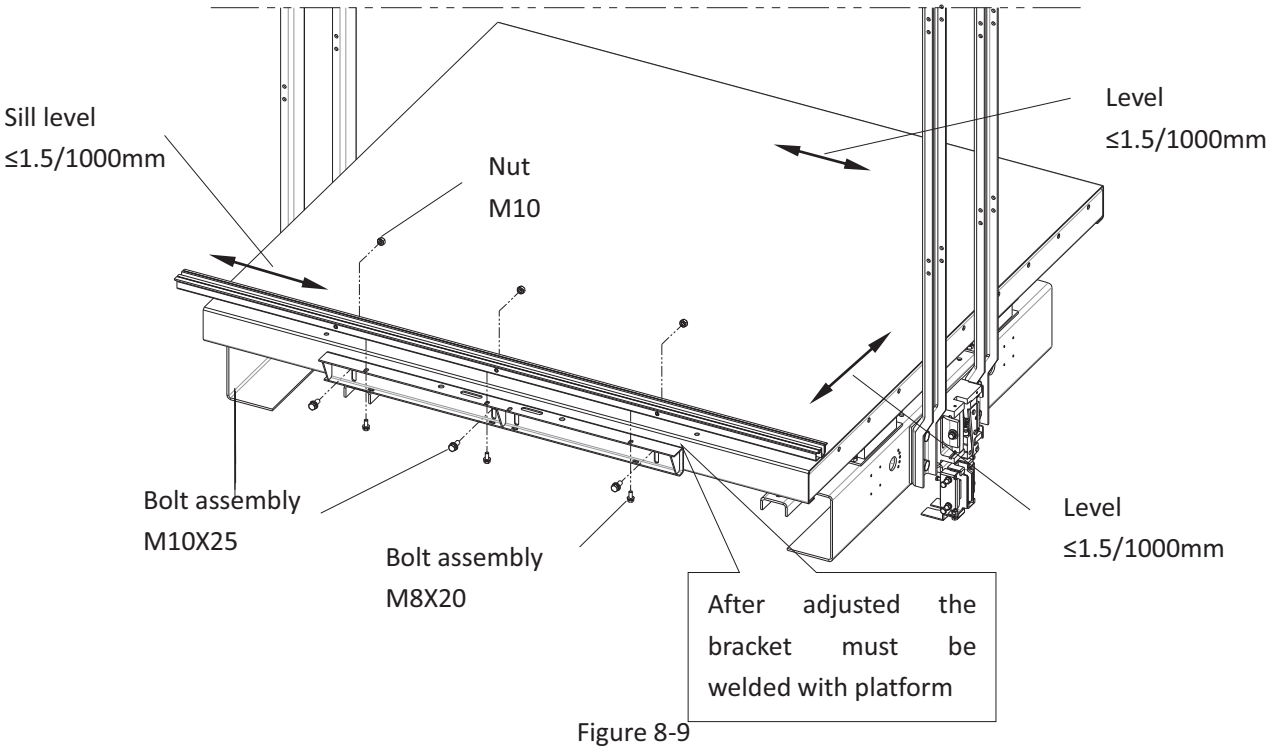


Figure 8-9

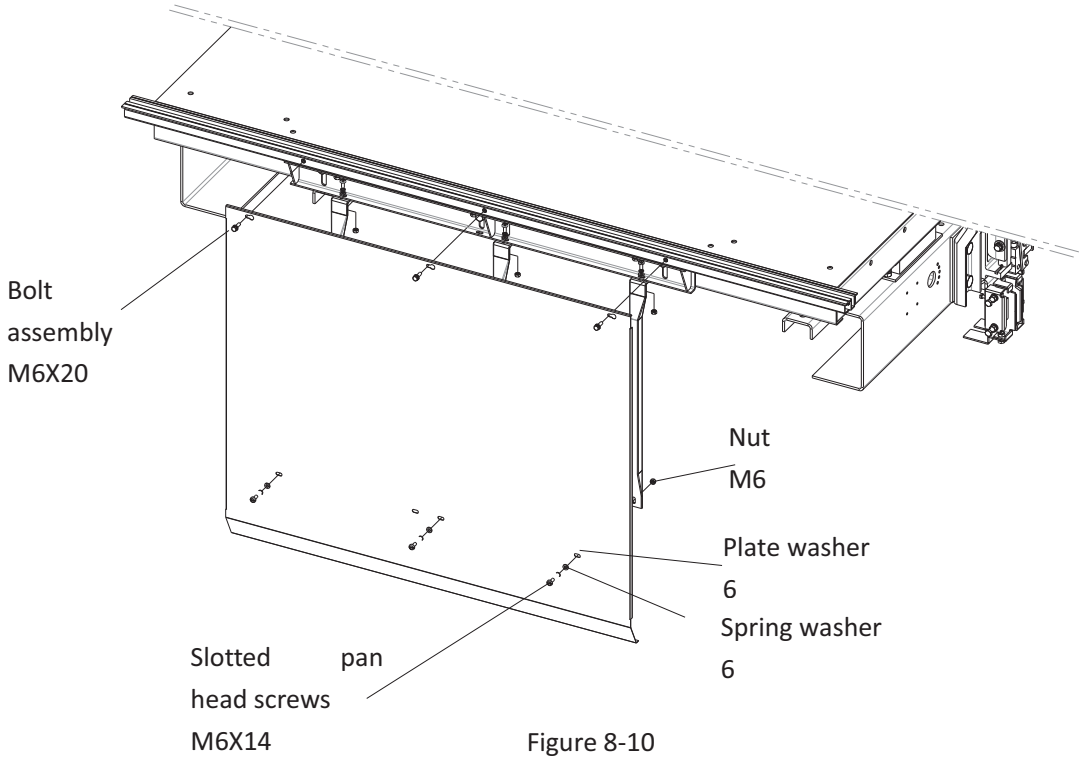


Figure 8-10

9 Installation of traction rope

Step	Instruction	Fig
1	Hanging method of steel wire rope.	Figure 9-1
2	Hanging method of steel wire rope (top view).	Figure 9-2
3	Connect the end of rope with rope termination; Fox termination on dead-end hitch plate.	Figure 9-3
4	Install termination anti-rotate rope.	Figure 9-4

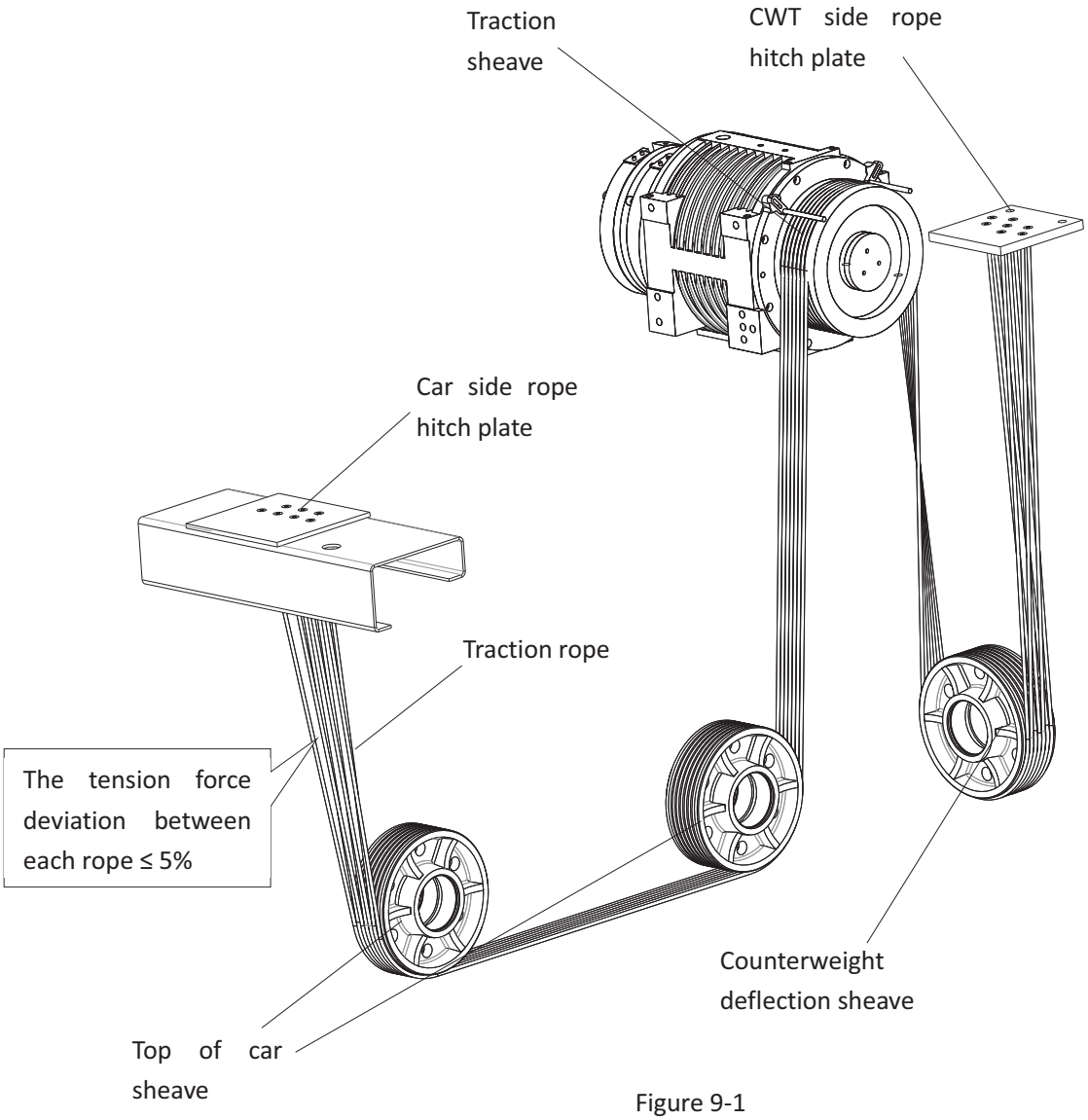
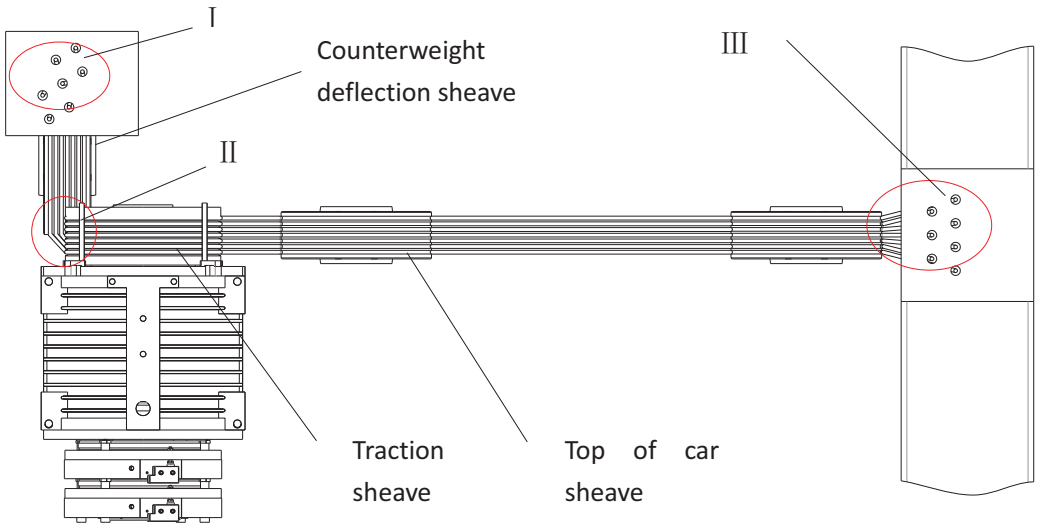
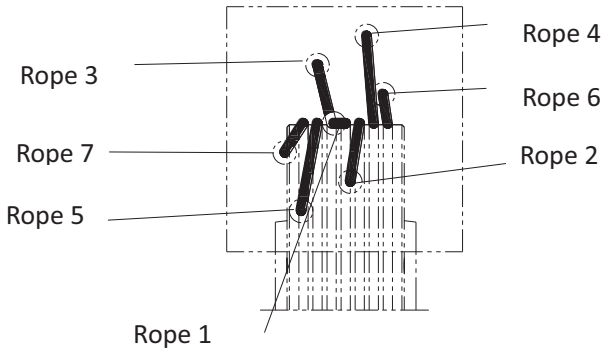
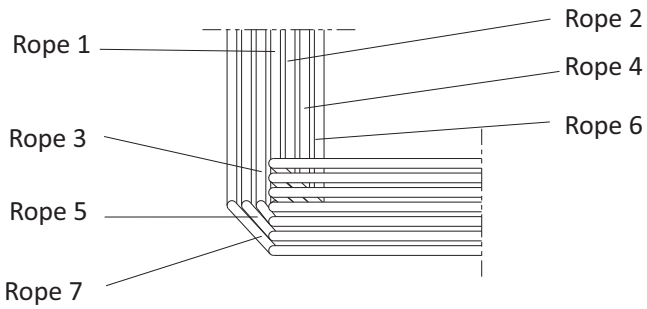


Figure 9-1

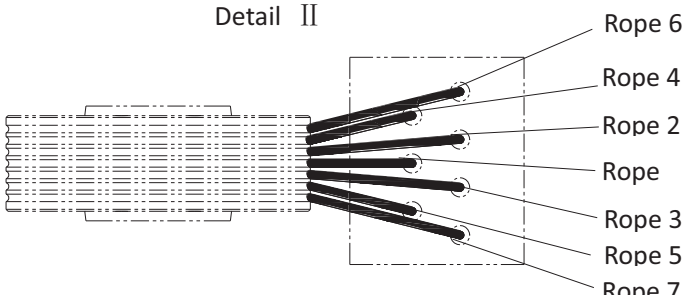




Detail Ⅰ



Detail Ⅱ



Detail Ⅲ

Figure 9-2

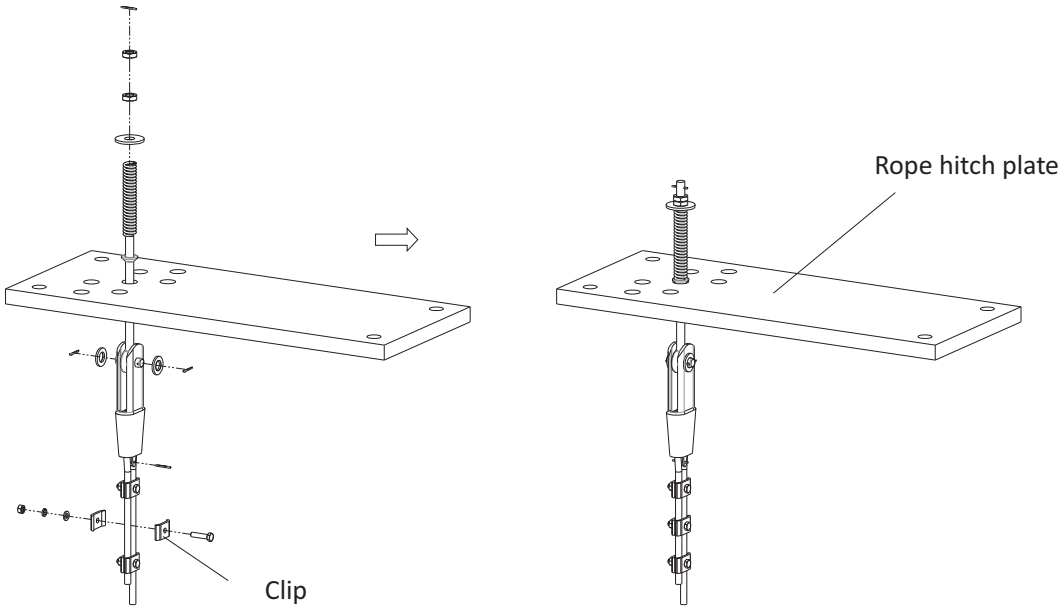


Figure 9-3

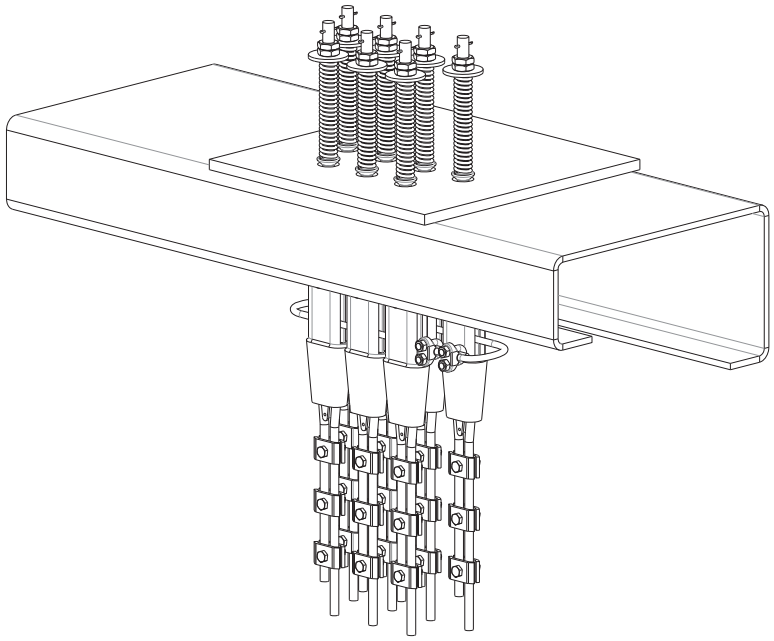
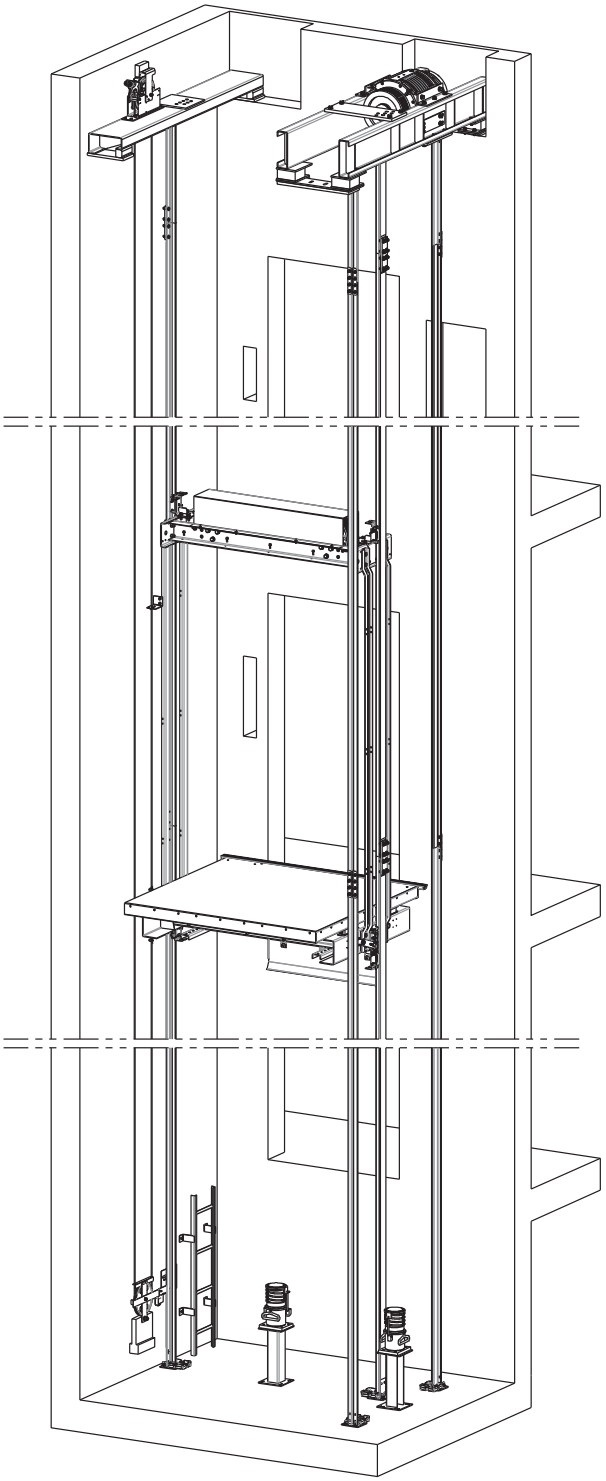


Figure 9-4

10 Installation of hoistway mechanical components

Hoistway mechanical components installation overview:



10.1Installation of pit ladder

Step	Instruction	Fig
1	Stand the bottom of the pit ladder on the pit floor.	Figure 10-1
2	Connect the pit ladder on the well wall.	Figure 10-2

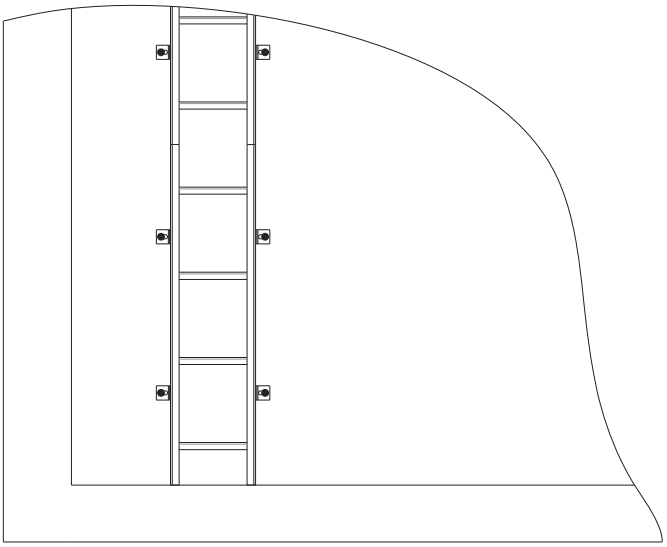


Figure 10-1

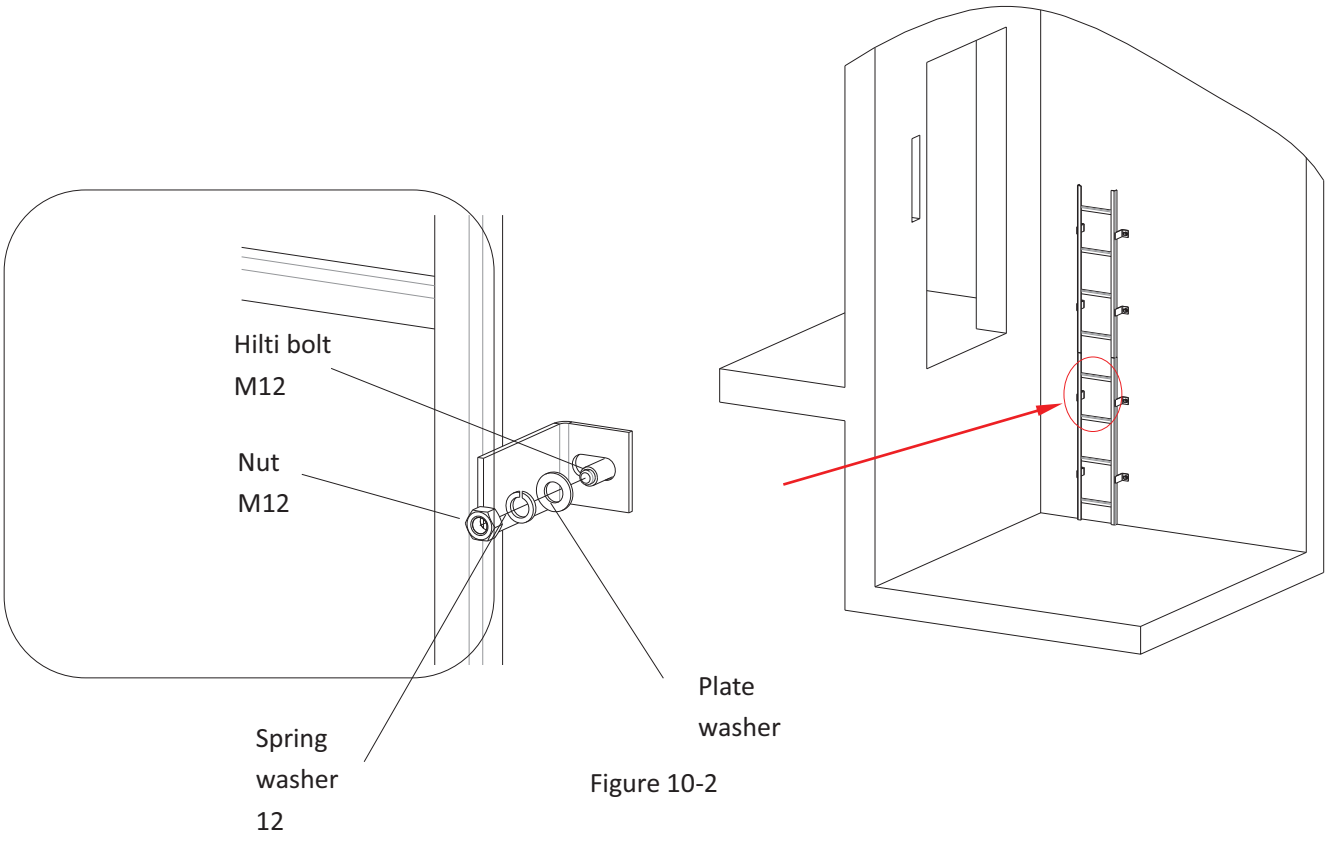


Figure 10-2

10.2Installation of speed governor

Step	Instruction	Fig
1	Connect the speed governor on the beam.	Figure 10-3a/b

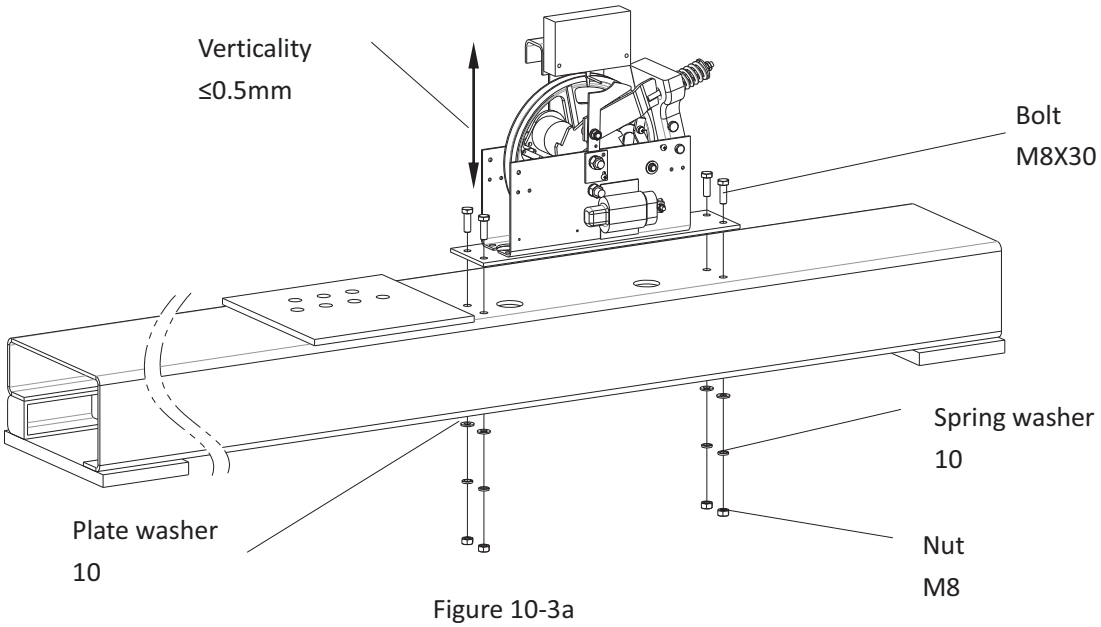


Figure 10-3a

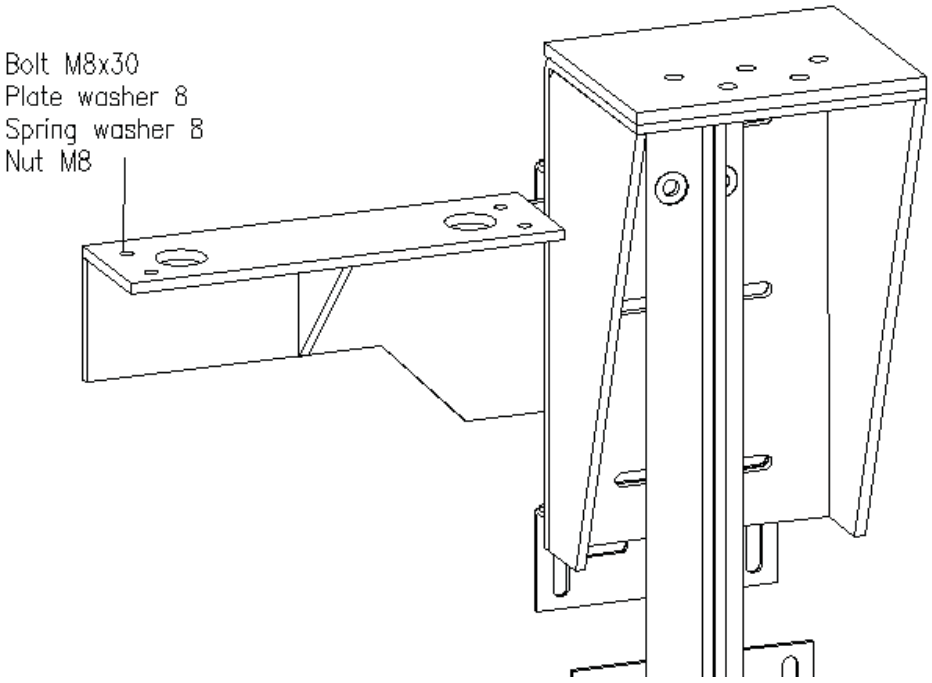


Figure 10-3b

10.3Installation of tension device

Step	Instruction	Fig
1	The distance from the bottom of the tension device to the pit floor is 150~250mm.	Figure10-4
2	Connect the plate of tension device on the car rail.	Figure 10-5
3	Connect the weight part of tension device on the plate of tension device.	Figure 10-6
4	Connect the switch on the tension device.	Figure 10-7

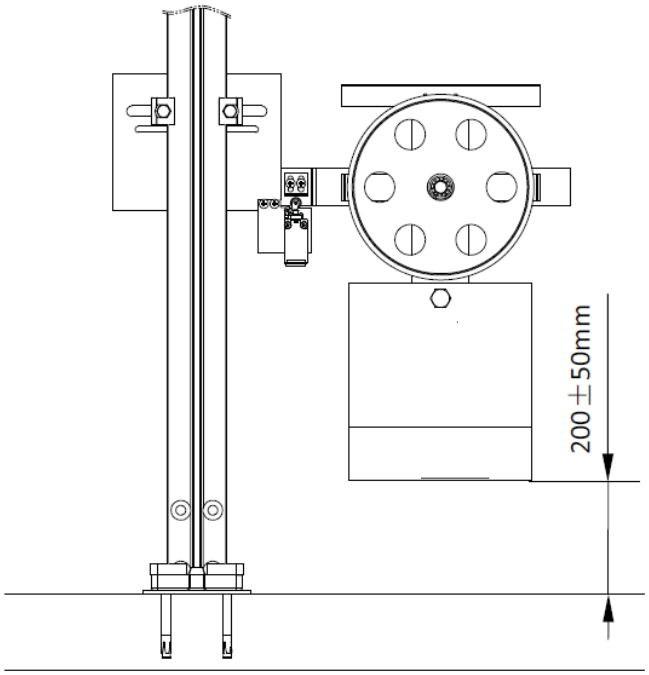


Figure 10-4

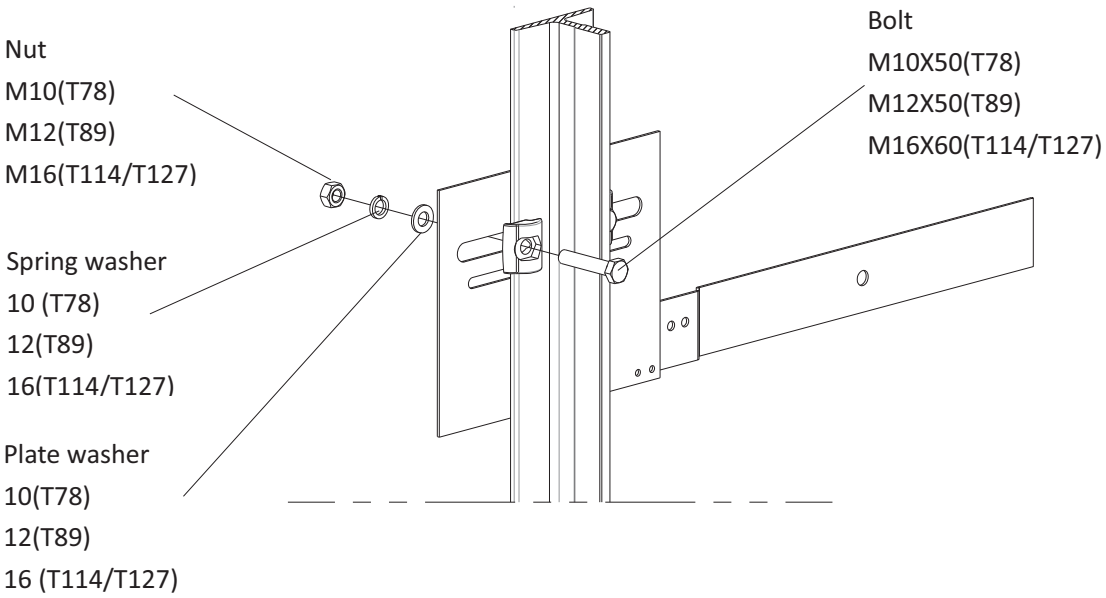


Figure 10-5

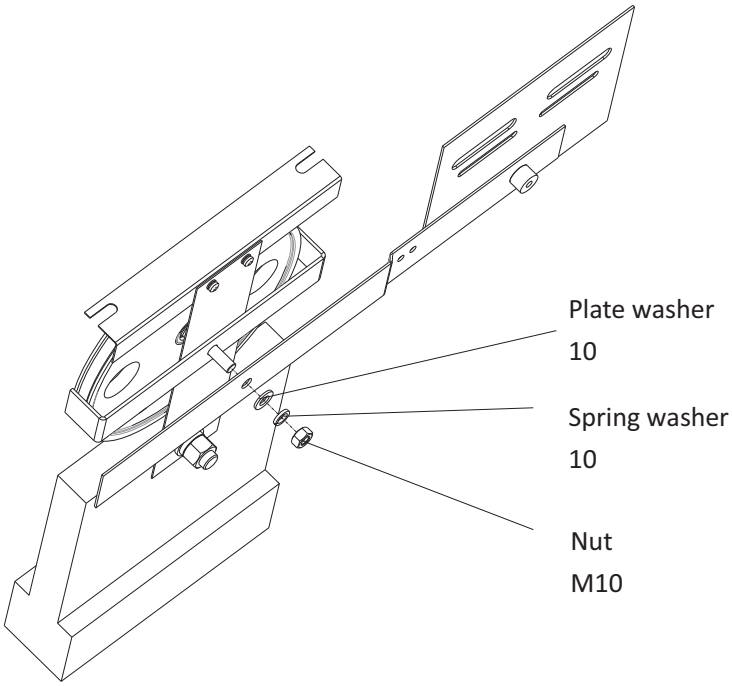


Figure 10-6

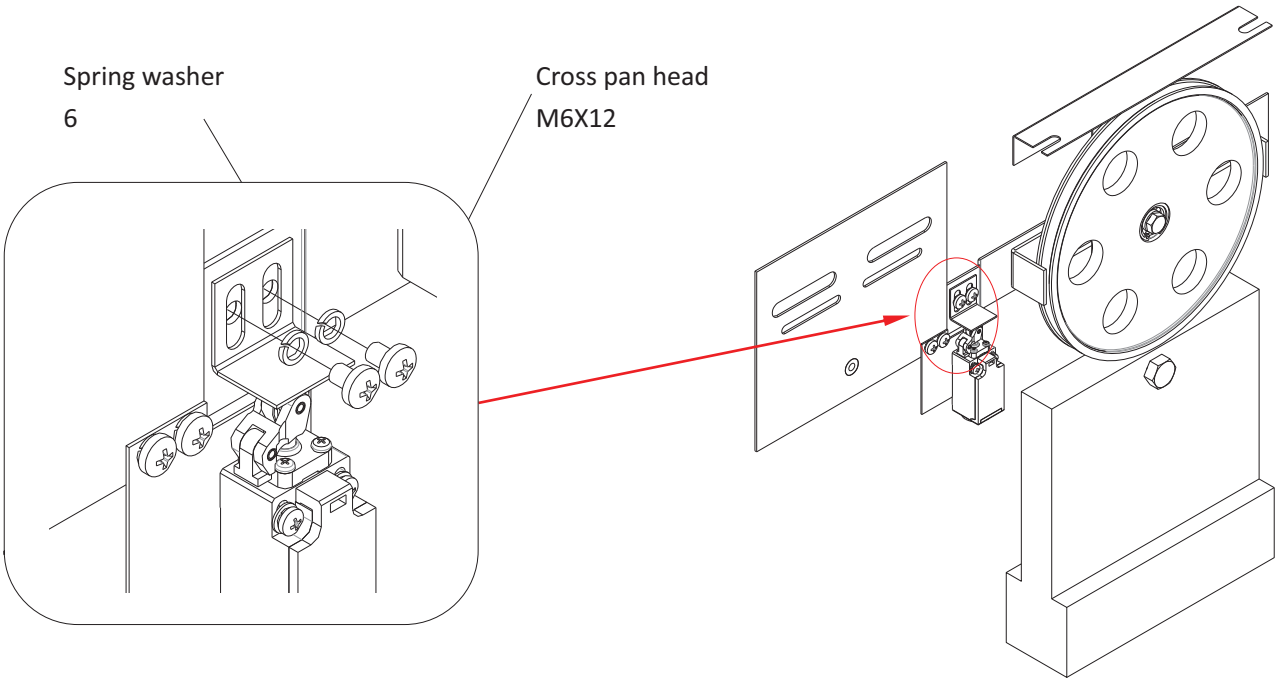


Figure 10-7

10.4Installation of speed governor rope

Step	Instruction	Fig
1	Install the governor rope on governor and tension device, fix the both ends of governor rope to the safety linkage on the car frame by rope clips.	Figure 10-8

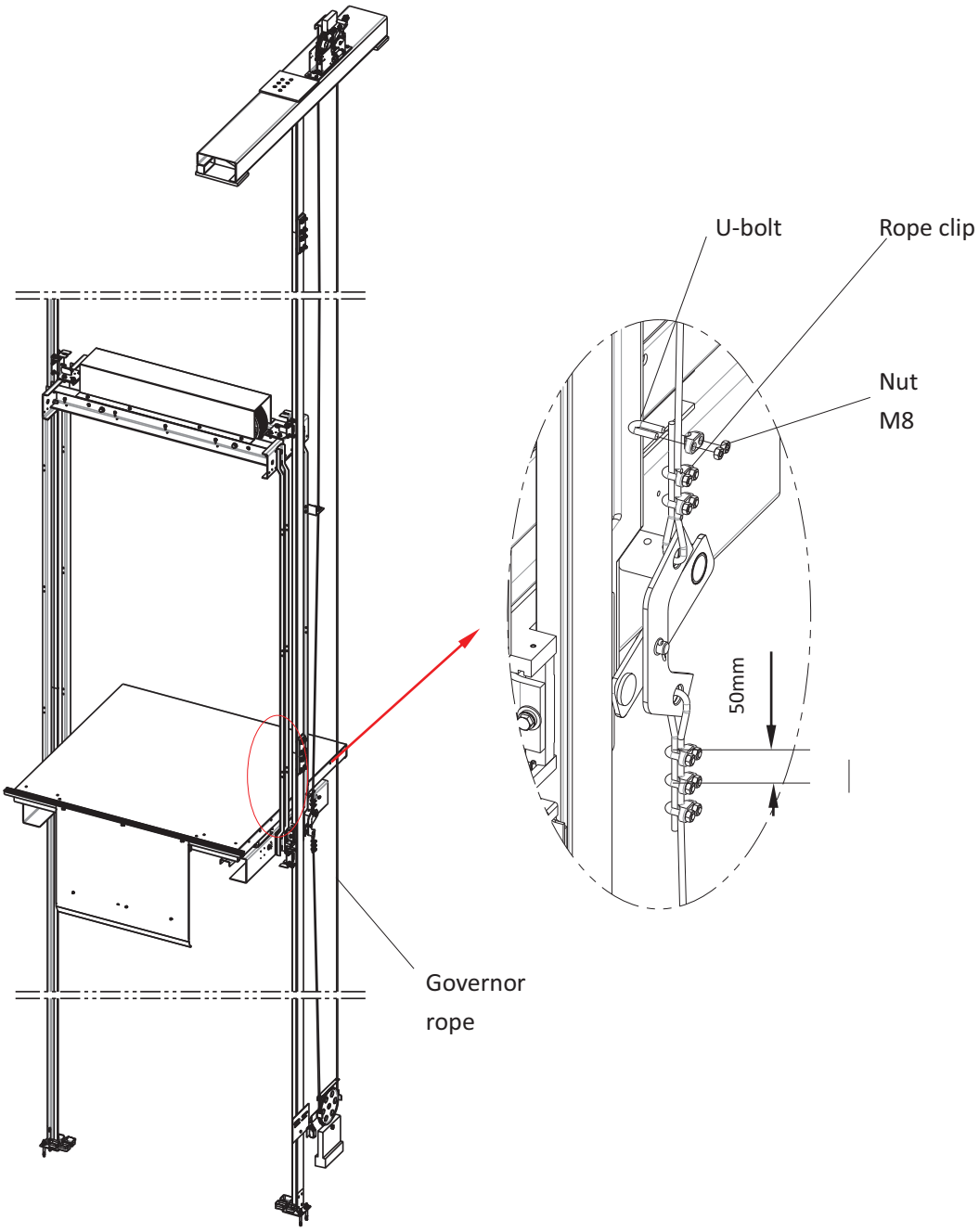


Figure 10-8

10.5Installation of buffer

Step	Instruction	Fig
1	Fix the buffer base on the pit floor.	Figure 10-9
2	Connect the oil buffer on the buffer base.	Figure 10-10
3	Connect the PU buffer base on the pit floor.	Figure 10-11

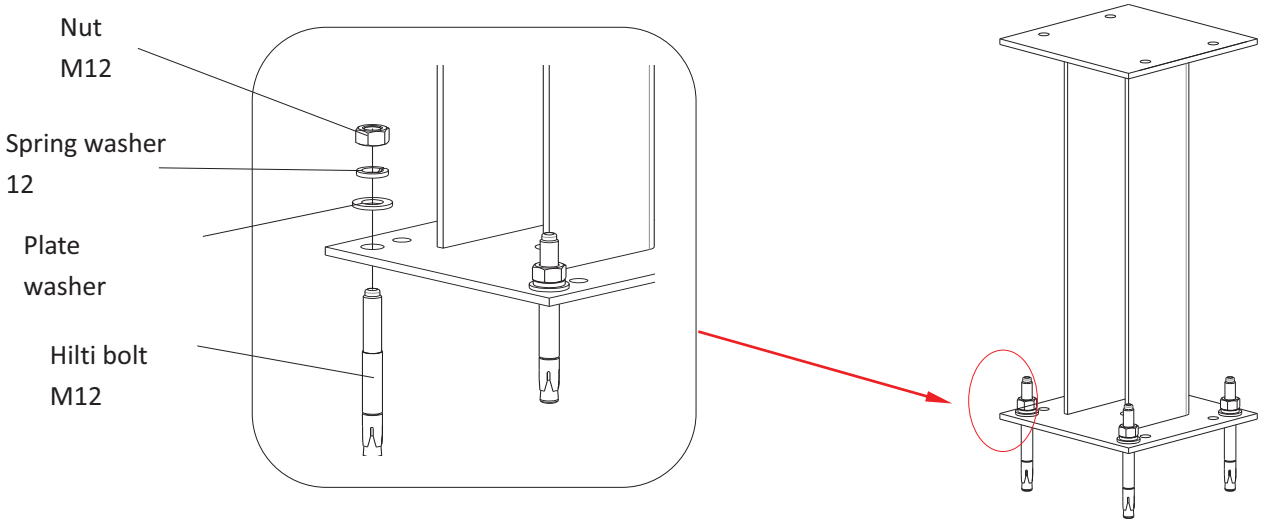


Figure 10-9

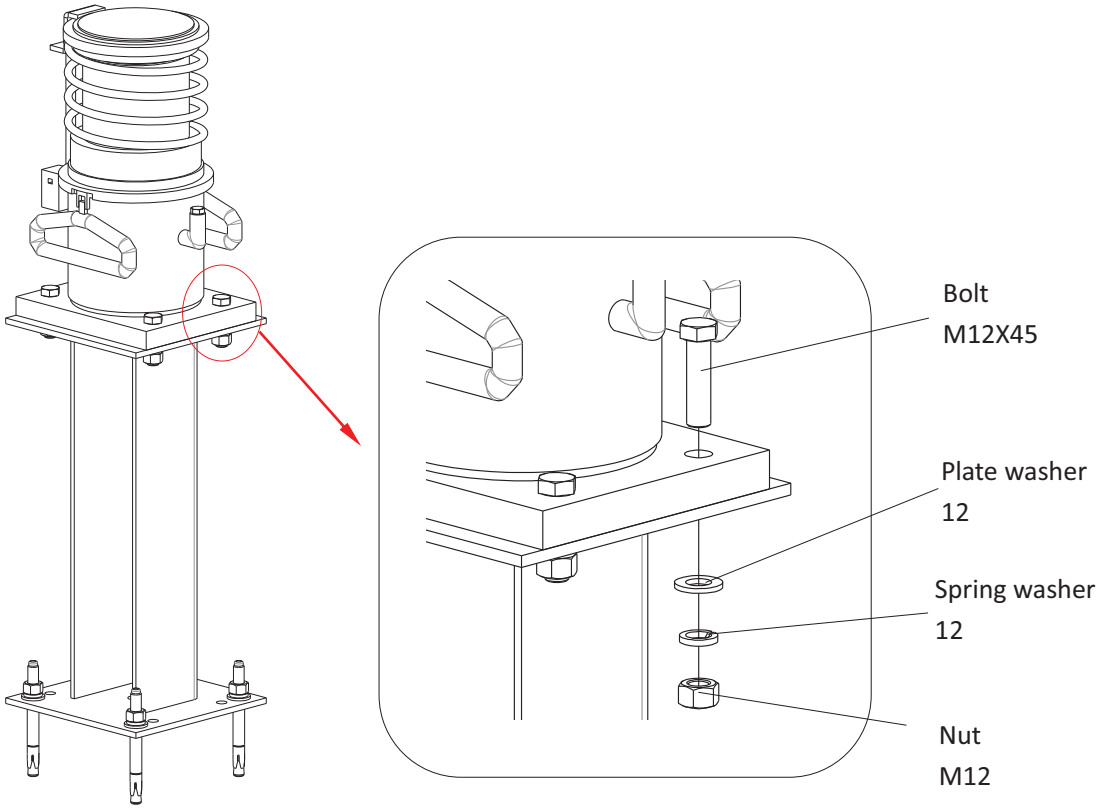


Figure 10-10

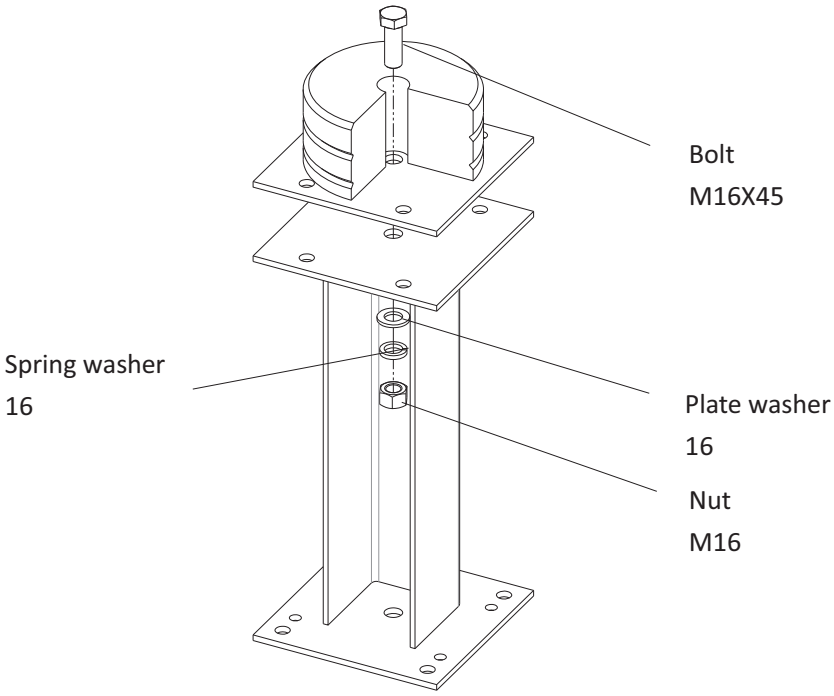


Figure 10-11

11 Installation electrical components in hoistway

11.1Installation of controller

Step	Instruction	Fig
1	Connect the controller on the wall.	Figure 11-1

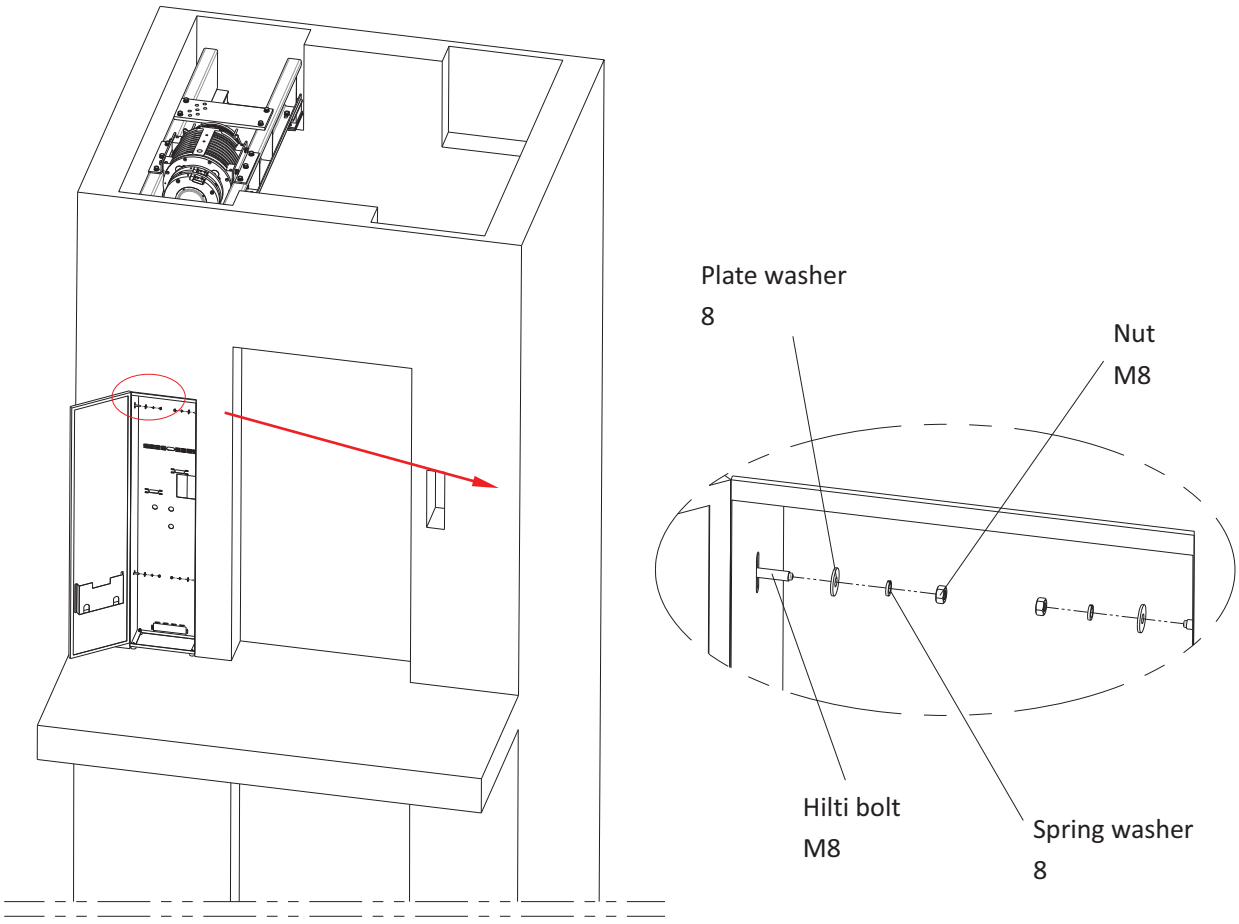


Figure 11-1

11.2Installation of machine wiring

Step	Instruction	Fig
1	Fix the cable tube on the wall.	Figure 11-2

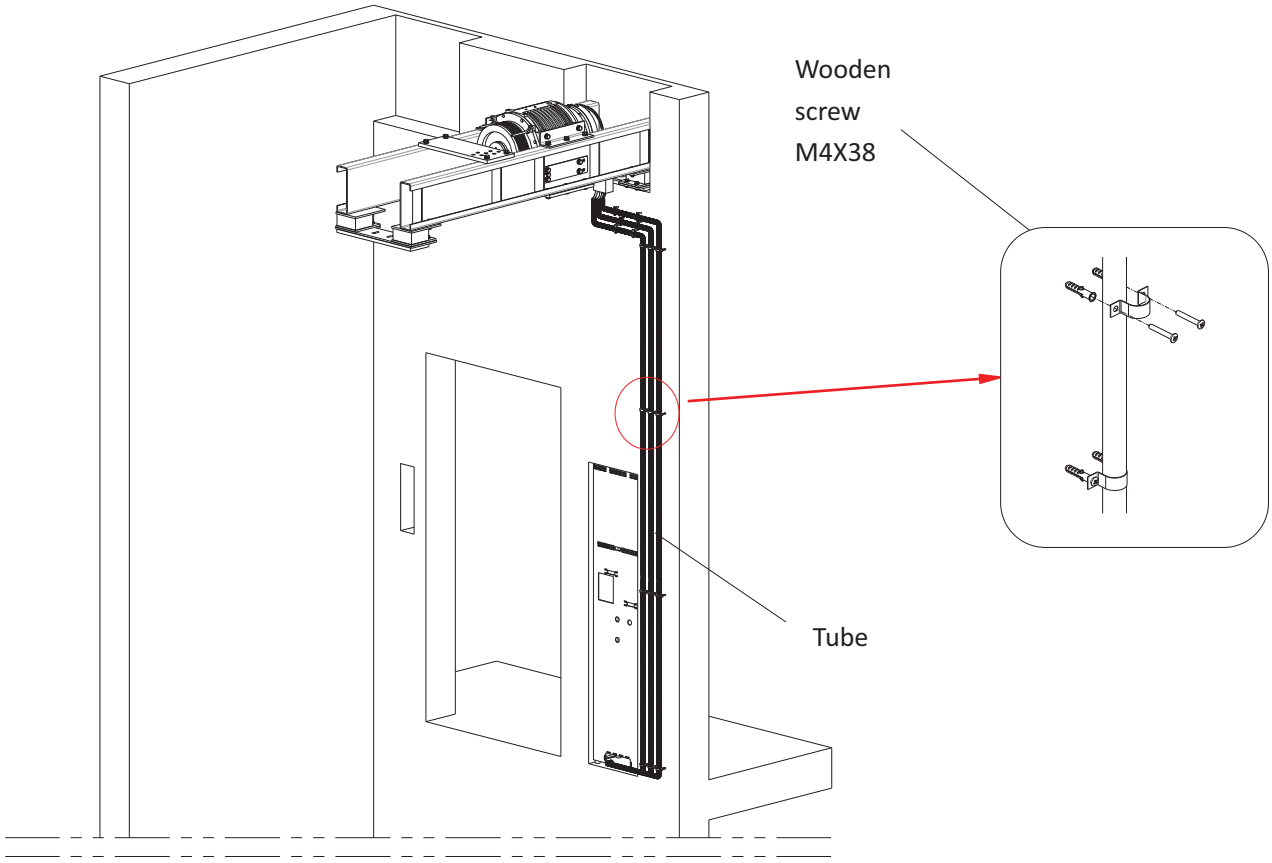
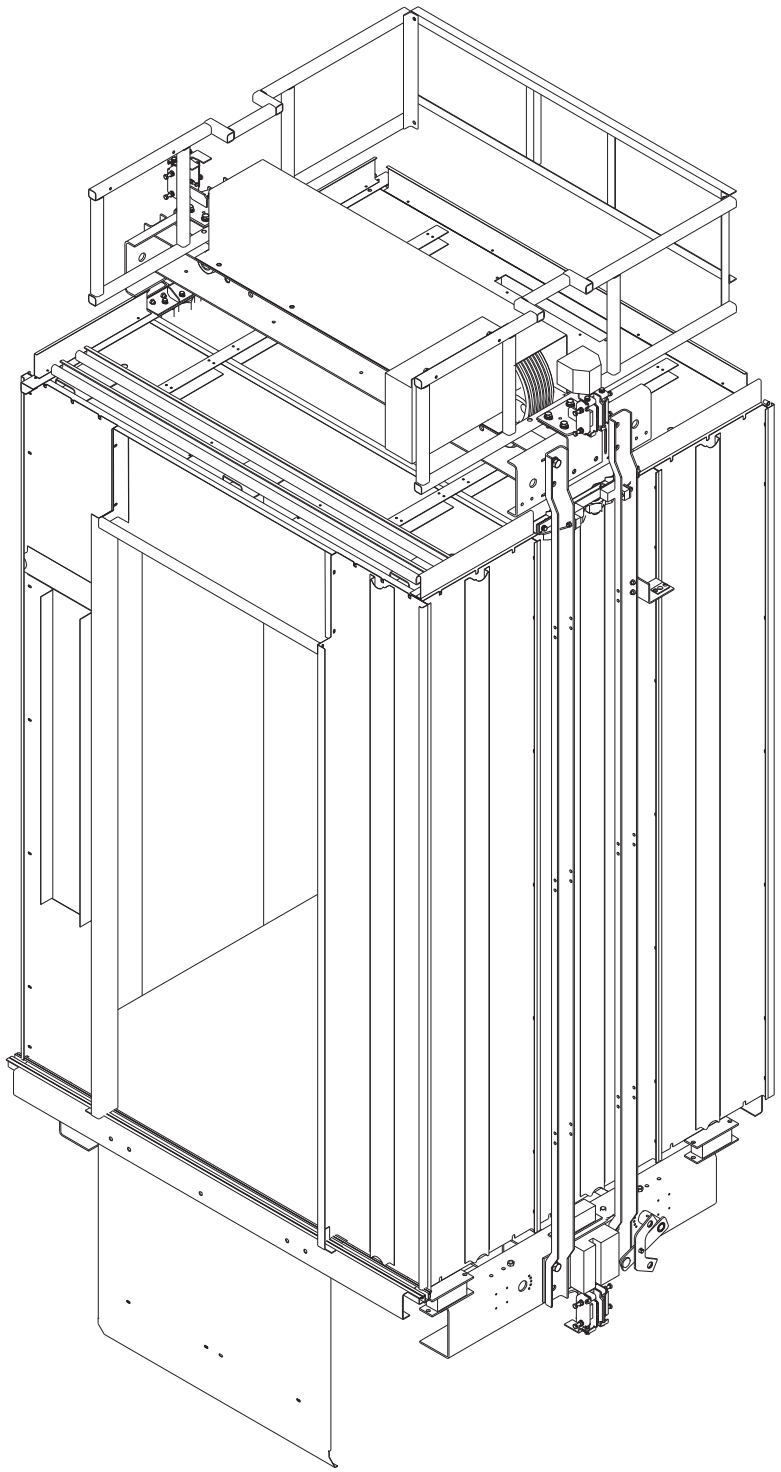


Figure 11-2

12 Installation of cab

Cab installation overall picture:



12.1Installation of car panel

Step	Instruction	Fig
1	Install the panels on the platform according sequence.	Figure 12-1
2	Install the first and second panels on the platform.	Figure 12-2
3	Install other side and rear panels on the platform with the same way.	Figure 12-3

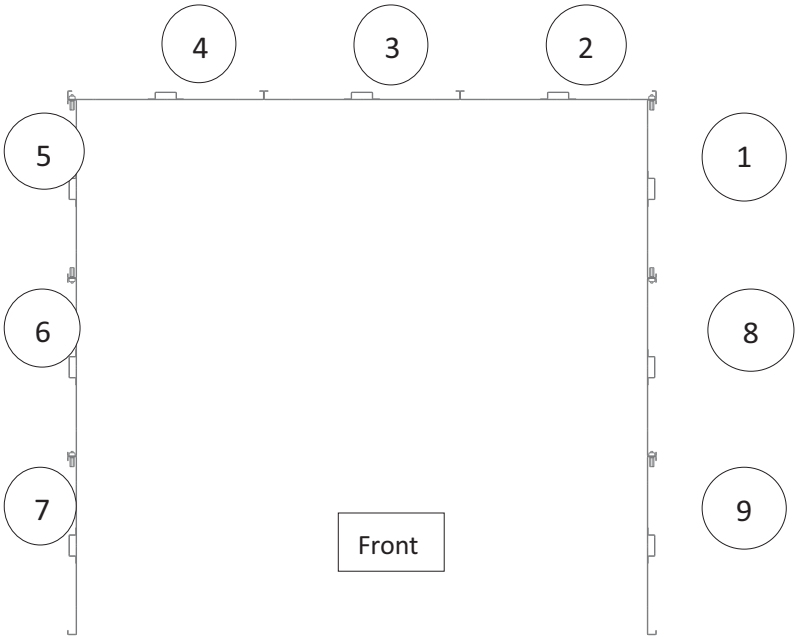


Figure 12-1

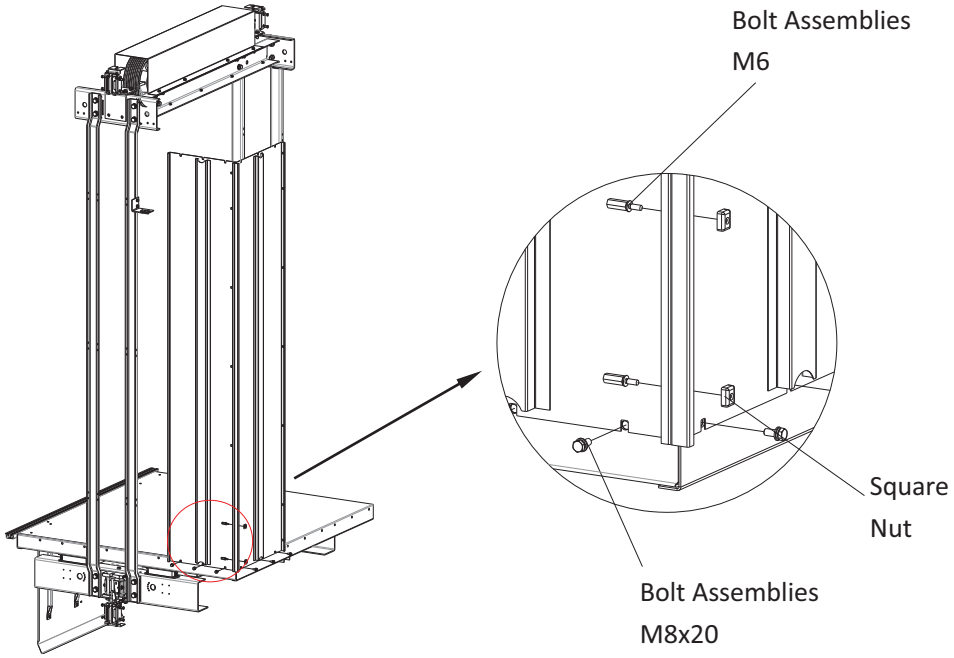


Figure 12-2

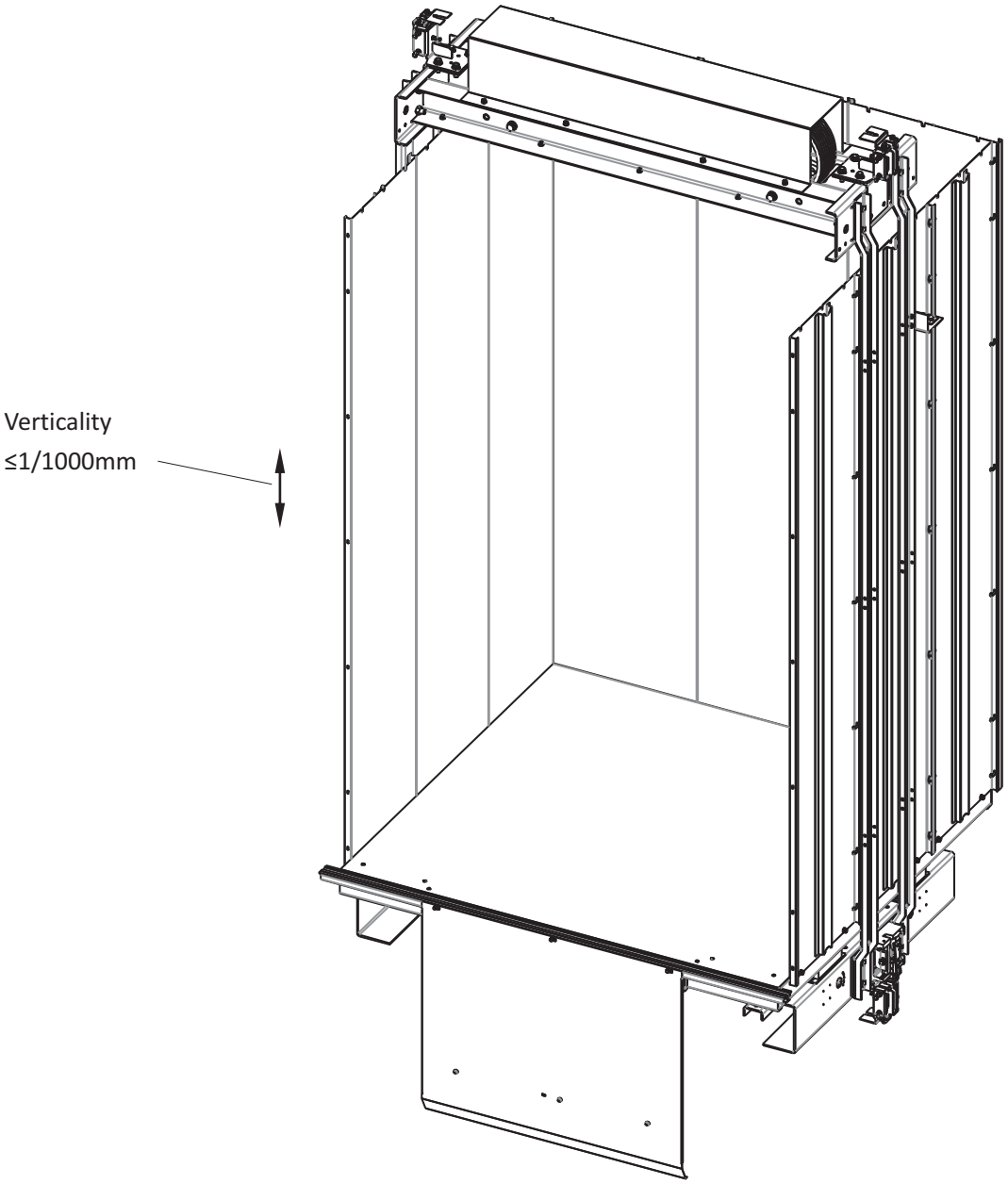


Figure 12-3

12.2Installation of car ceiling

Step	Instruction	Fig
1	Install the car ceiling on the wall panels.	Figure 12-4
2	Install the front panels.	Figure 12-5
3	Install the cab steadiers on the ceiling.	Figure 12-6

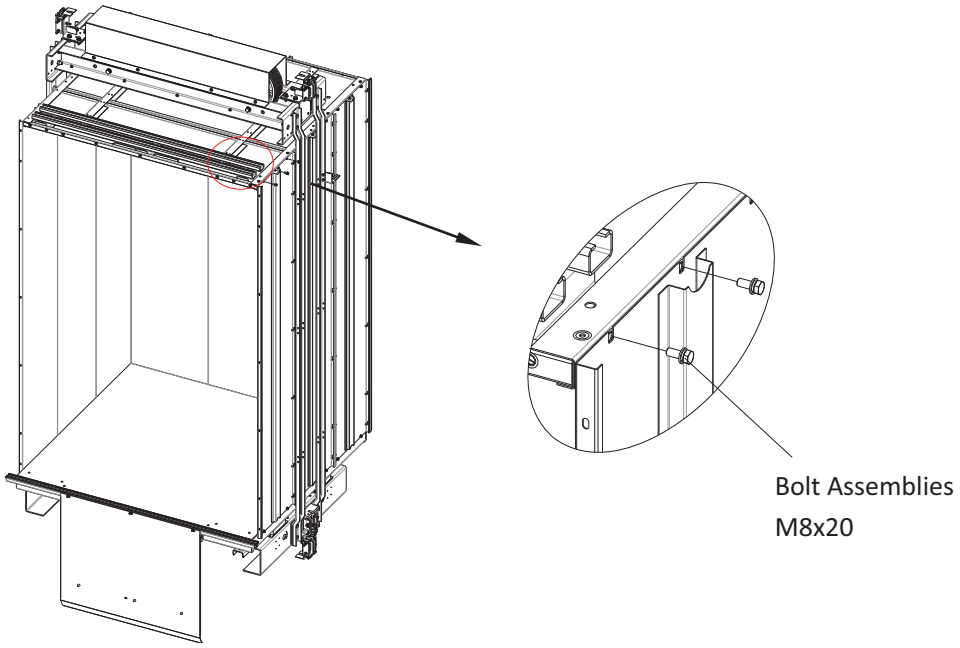


Figure 12-4

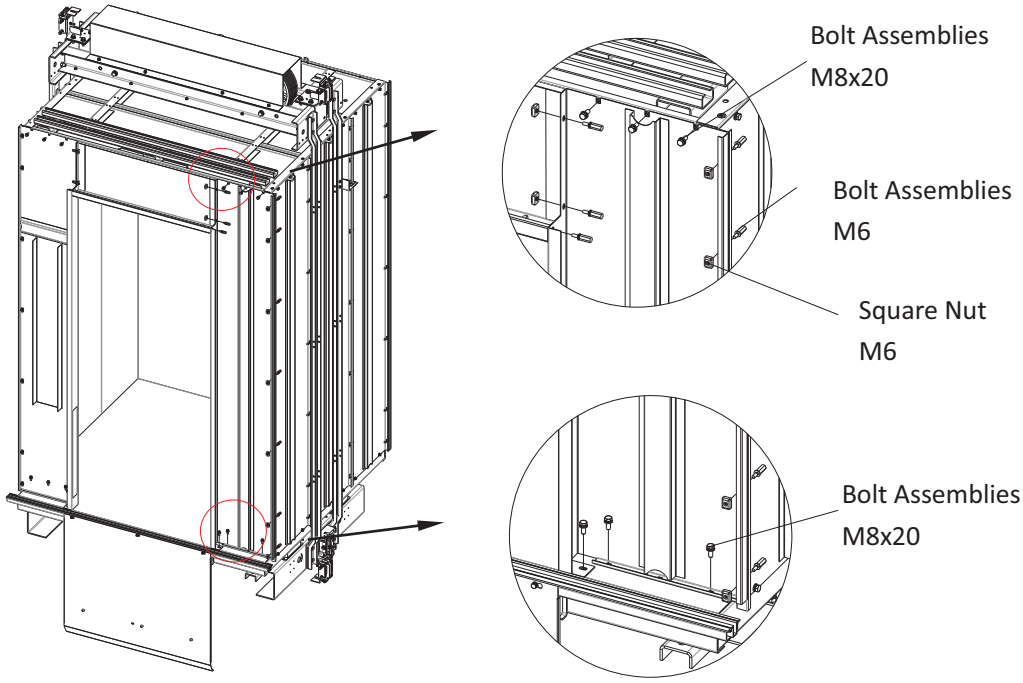


Figure 12-5

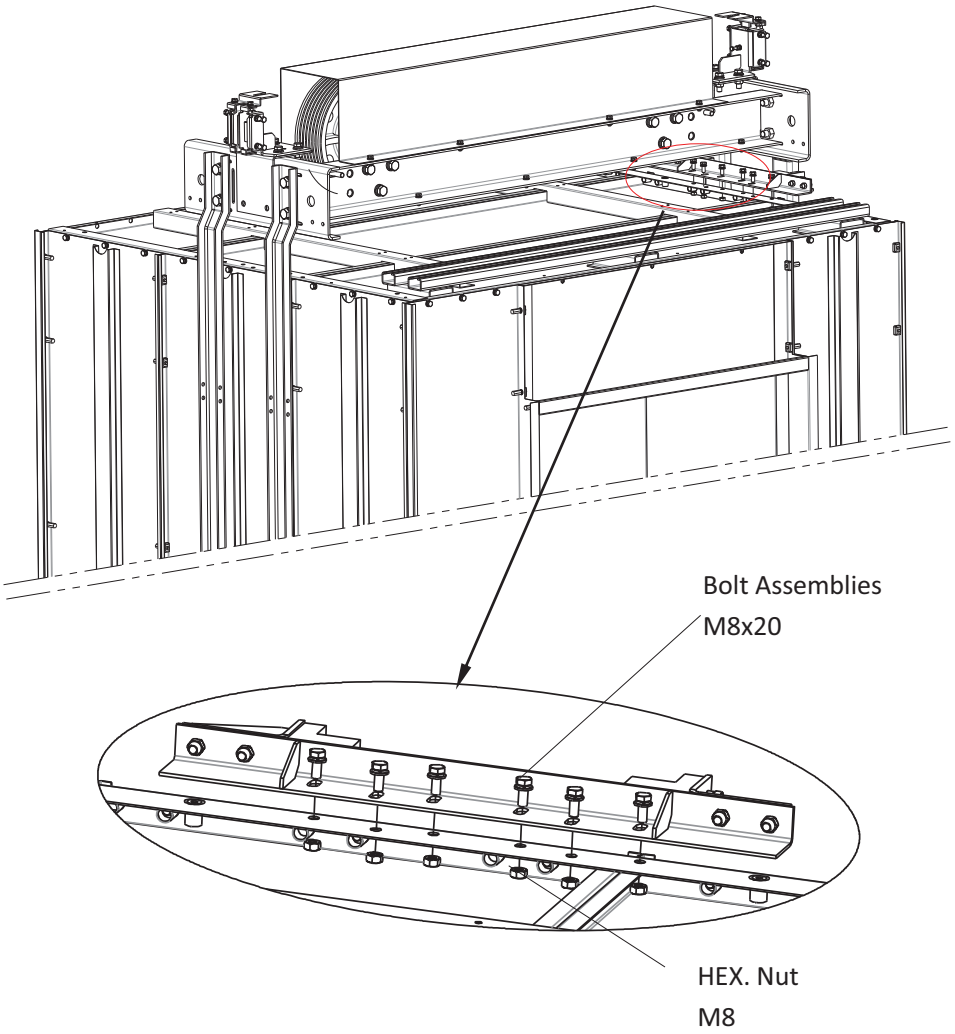


Figure 12-6

12.3Installation of TOC handrail

Step	Instruction	Fig
1	Connect the both side TOC handrail to the crosshead.	Figure 13-7
2	Connect the back side handrail to the side handrail.	Figure 13-8

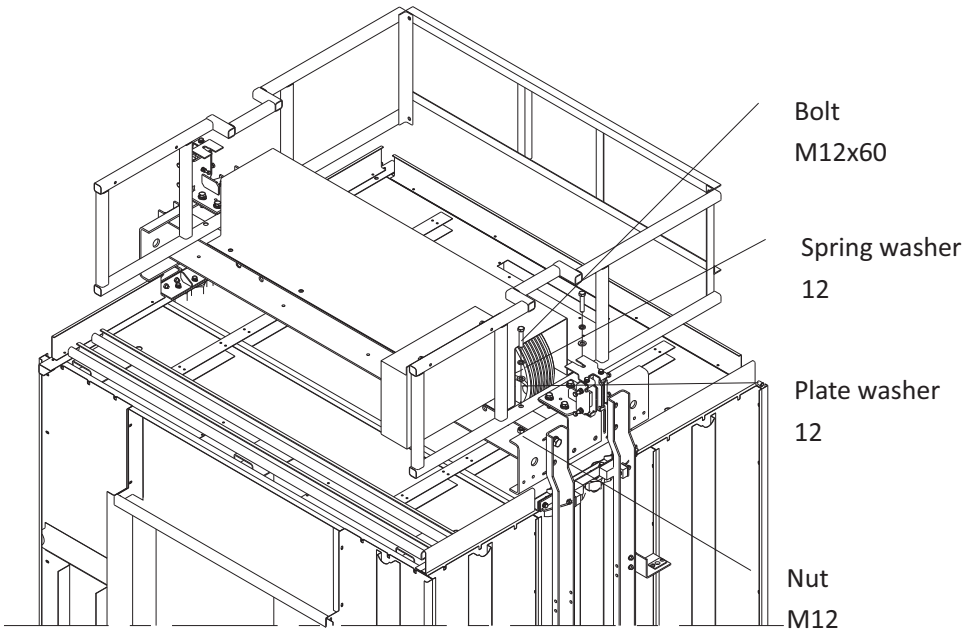


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Figure 13-7

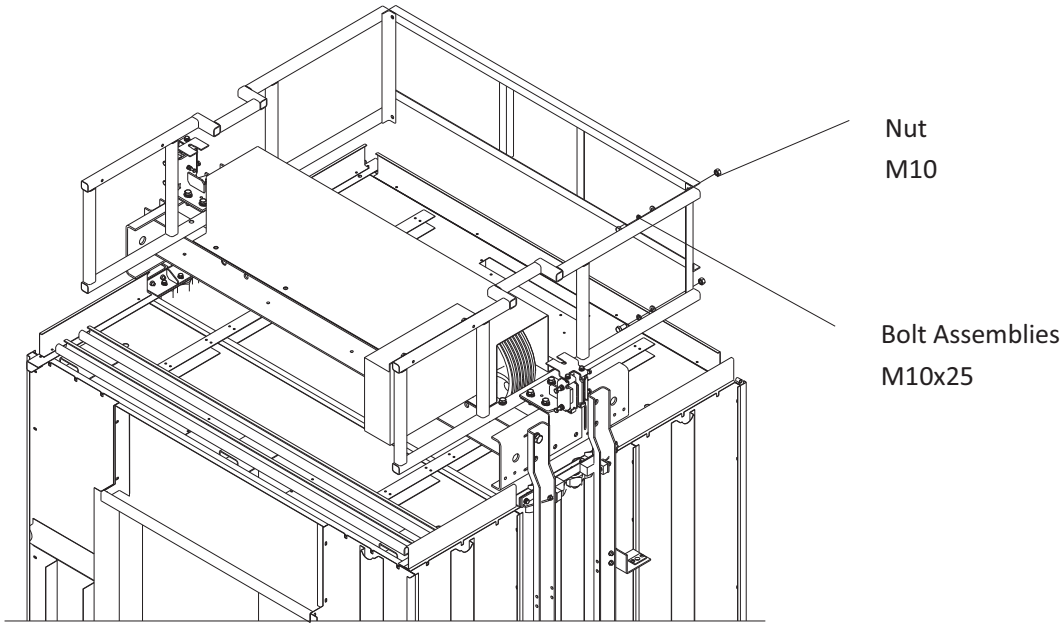


Figure 13-8

12.4Installation of car fan

Step	Instruction	Fig
1	Connect the car fan to the ceiling.	Figure 12-10

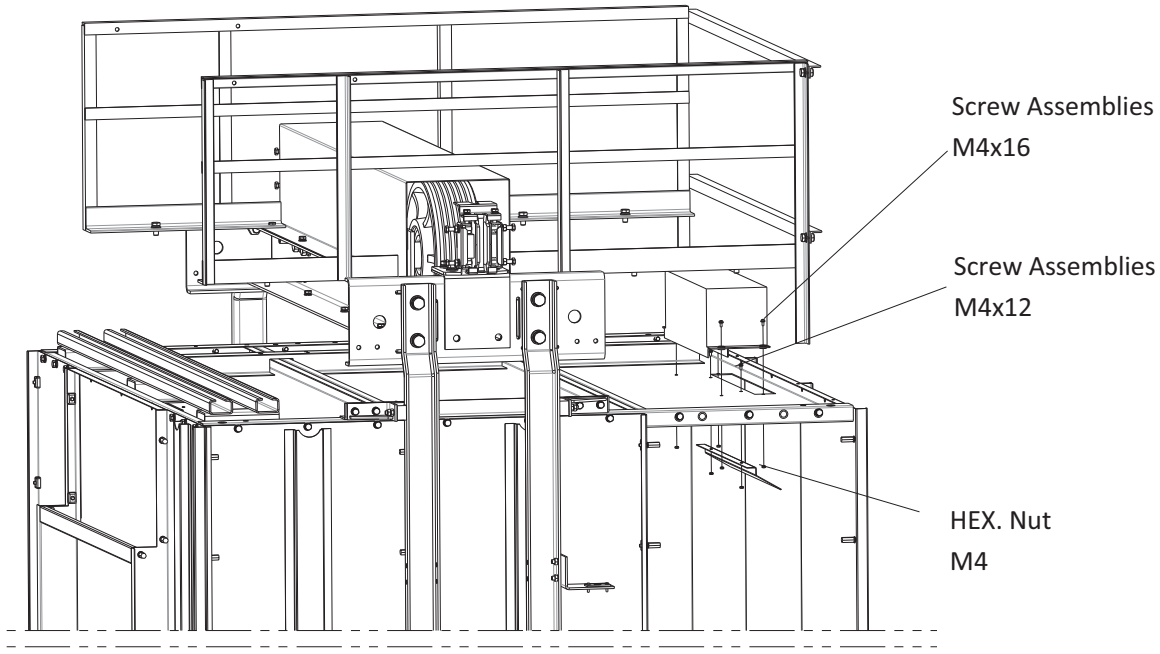


Figure 12-10

12.5Installation of TOC junction box

Step	Instruction	Fig
1	Connect the junction box to the handrail.	Figure 12-11

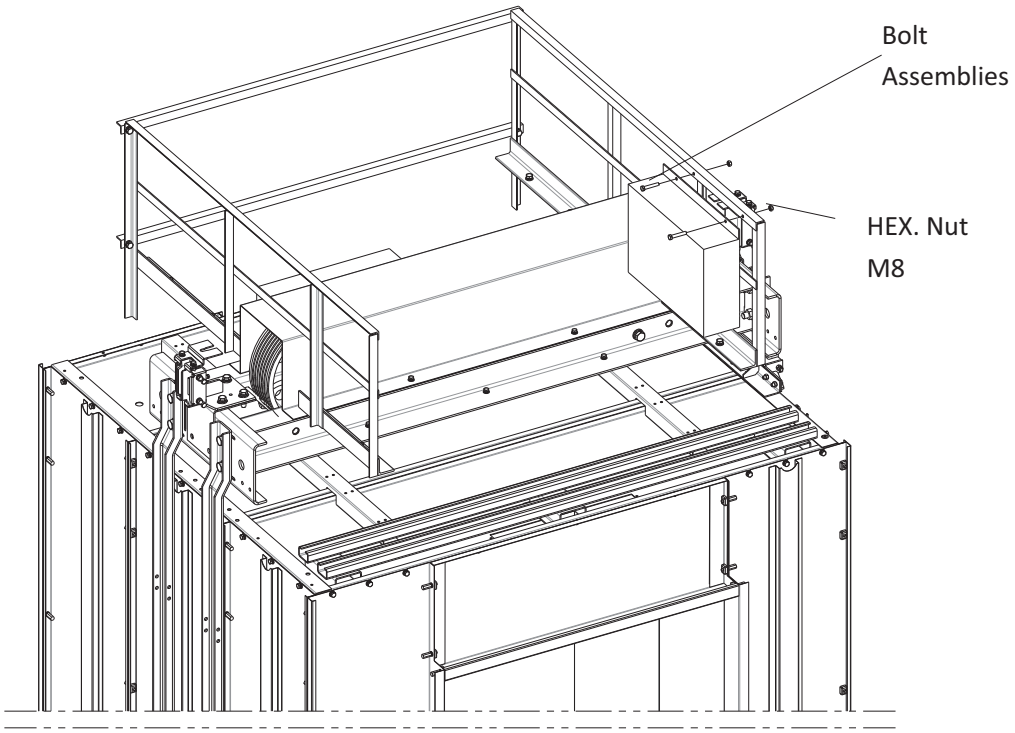


Figure 12-11

12.6Installation of kick plate

Step	Instruction	Fig
1	Connect the kick plate on the car ceiling.	Figure 12-12

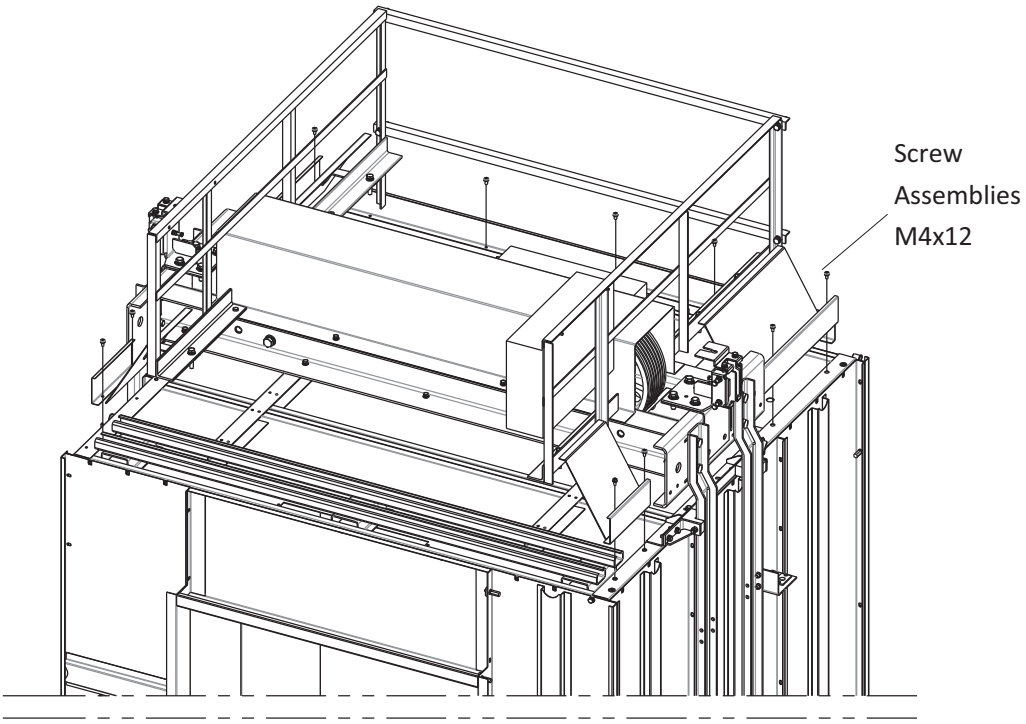


Figure 12-12

12.7Installation of car floor

Step	Instruction	Fig
1	Glue the PVC floor on the platform.	Figure 12-13, 12-14

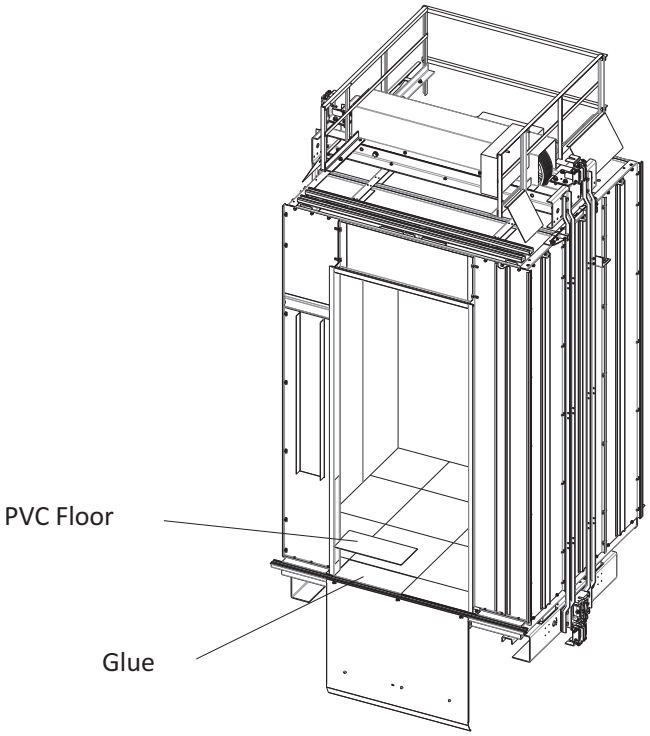


Figure 12-13

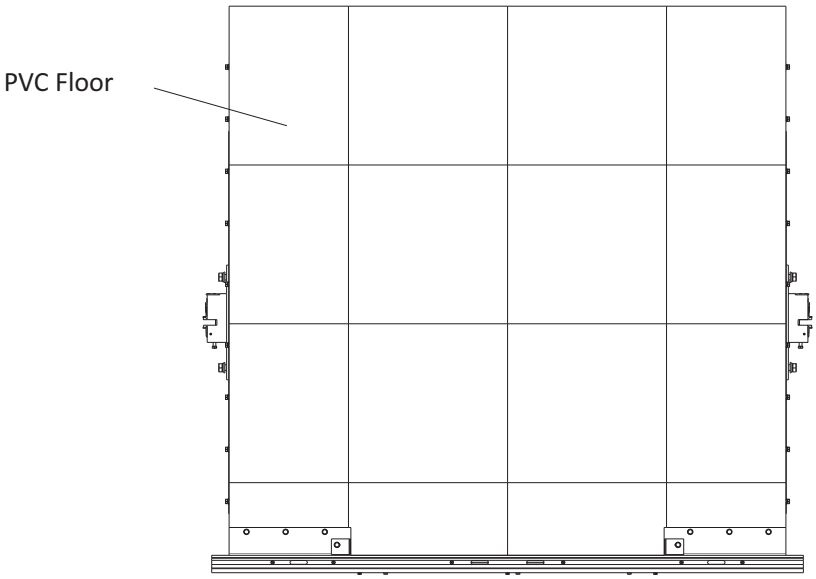


Figure 12-14

12.8Installation of load weighing device

Step	Instruction	Fig
1	Connect the bolt assembly at bottom of platform.	Figure 12-15
2	Fix the load sensor on sub-frame.	Figure 12-15

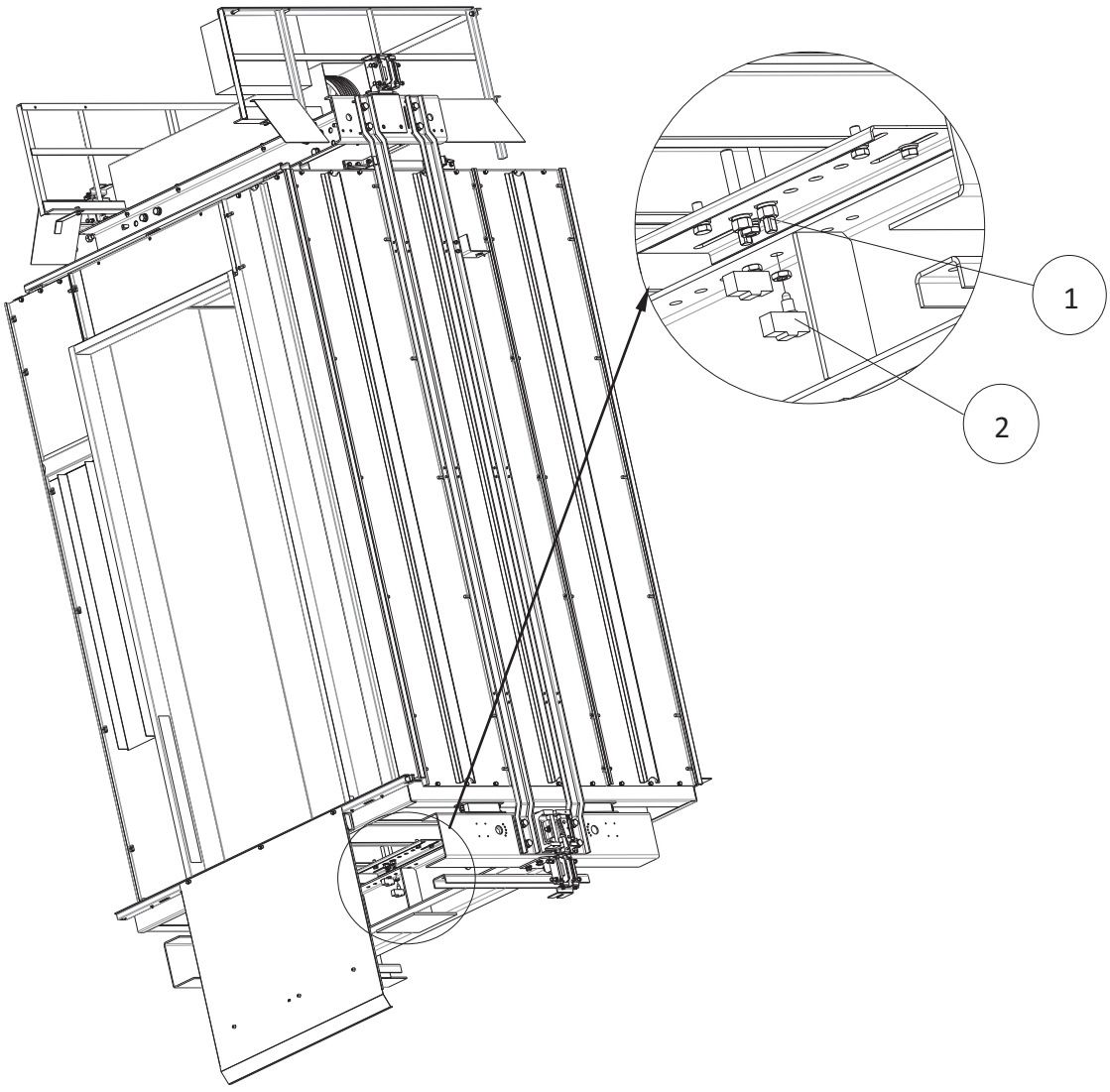
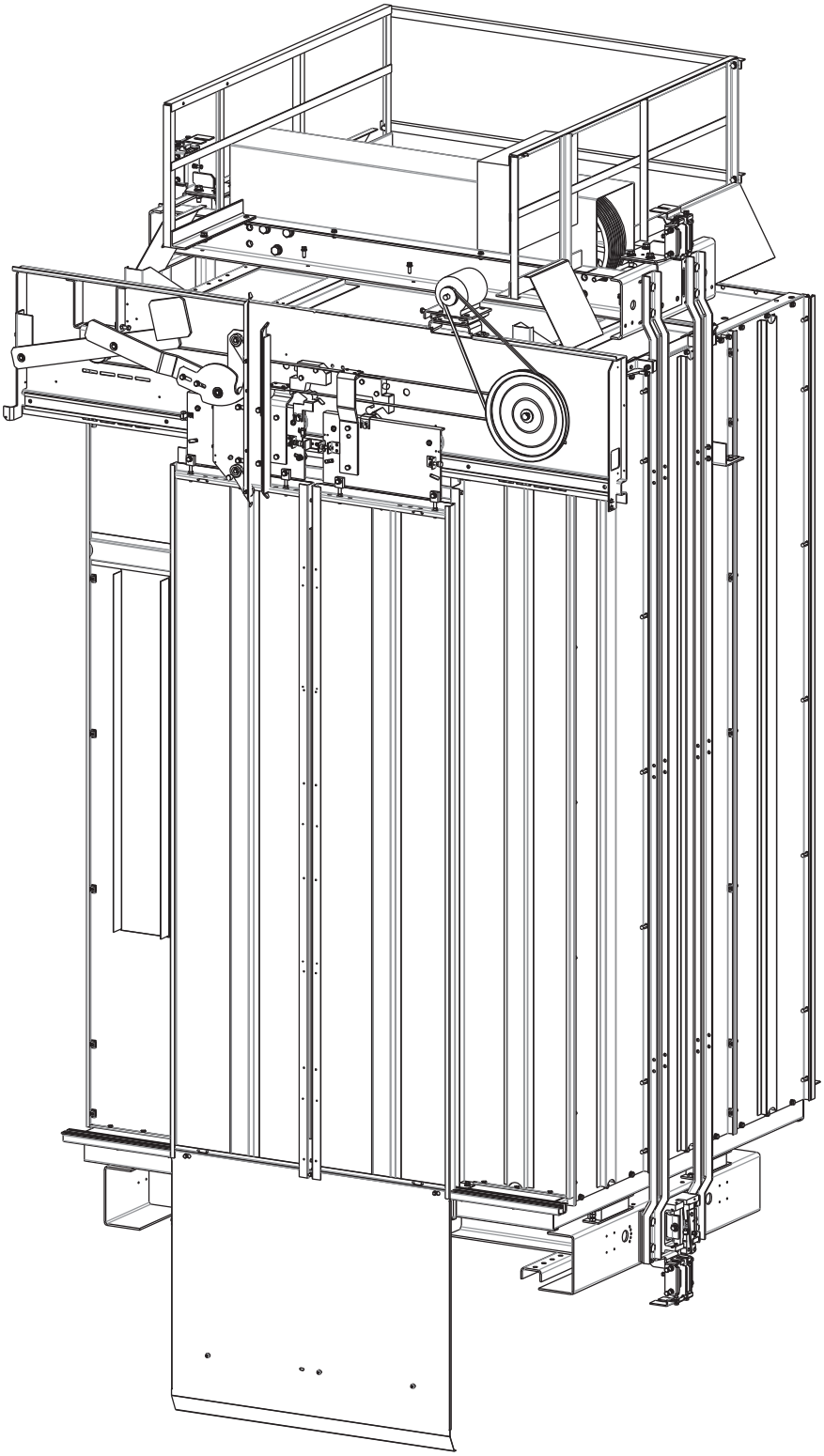


Figure 12-15

13 Installation of car door system

Car door system installation overview:



13.1Installation of door operator

Step	Instruction	Fig
1	Connect the brackets on car ceiling.	Figure 13-1
2	Connect the door operator on brackets.	Figure 13-2

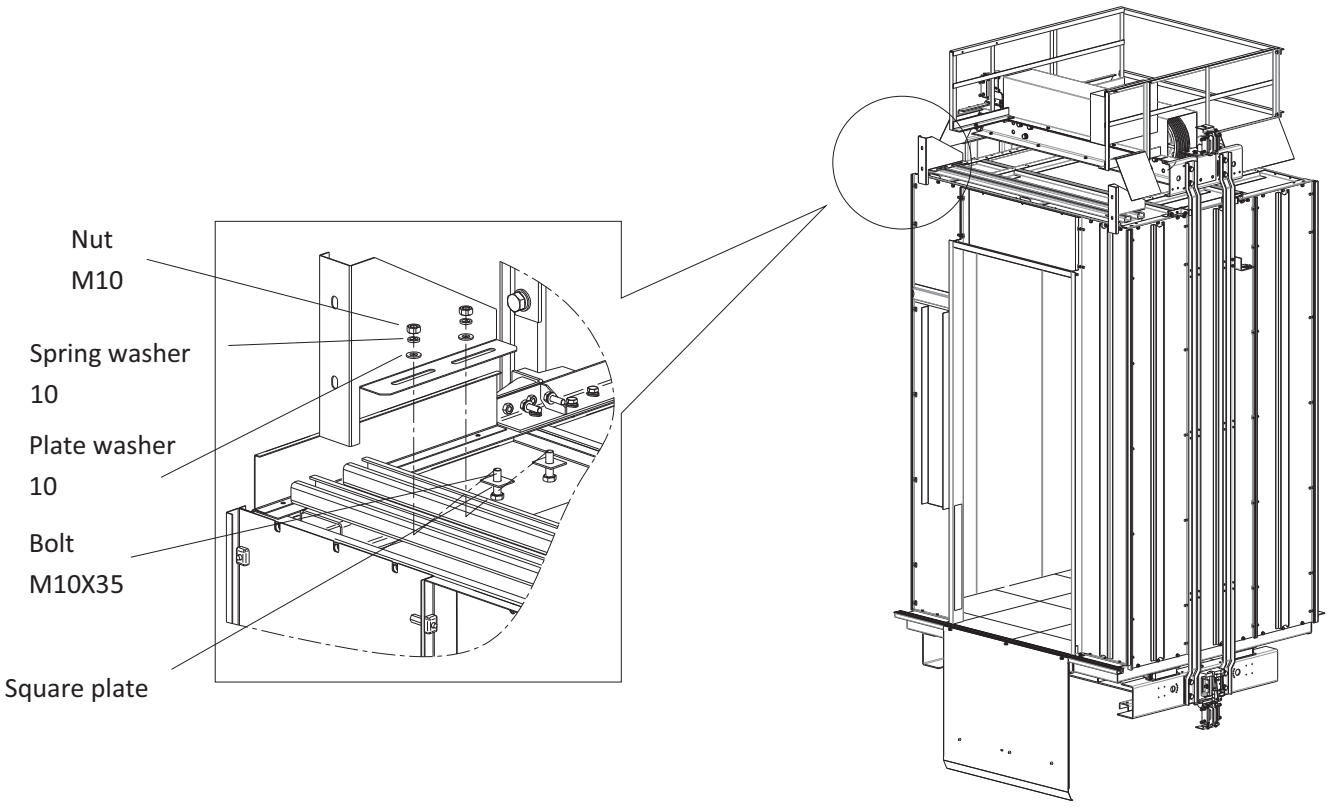


Figure 13-1

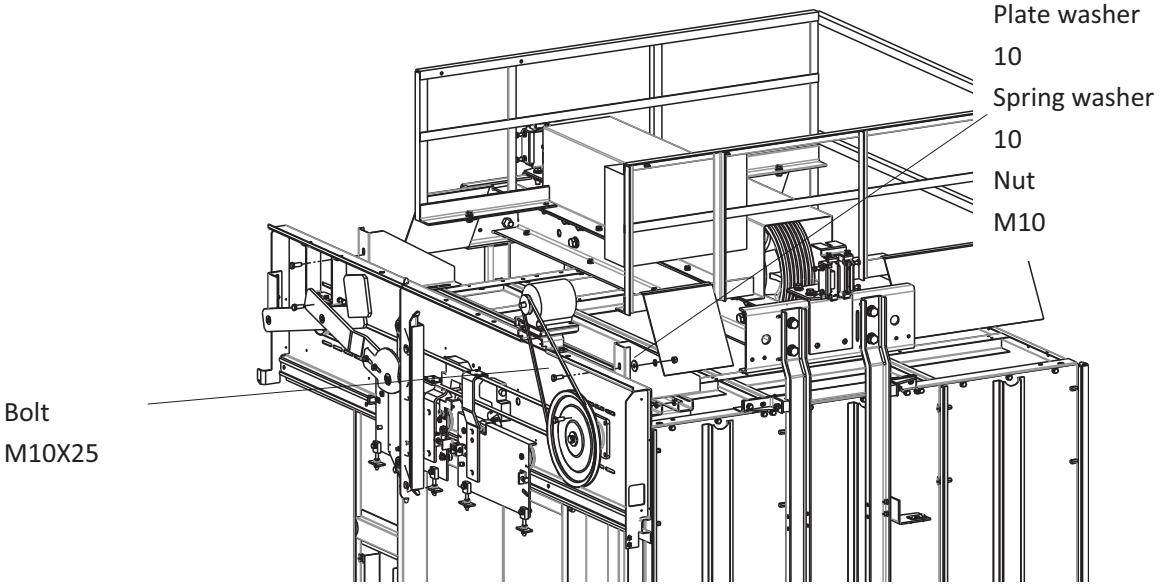


Figure 13-2

13.2Installation of car door panel

Step	Instruction	Fig
1	Connect car door panel to door operator and assemble guide shoes.	Figure 13-3
2	Install another panel by same way.	N/A
3	Adjust the door panel.	Figure 13-4, 13-5

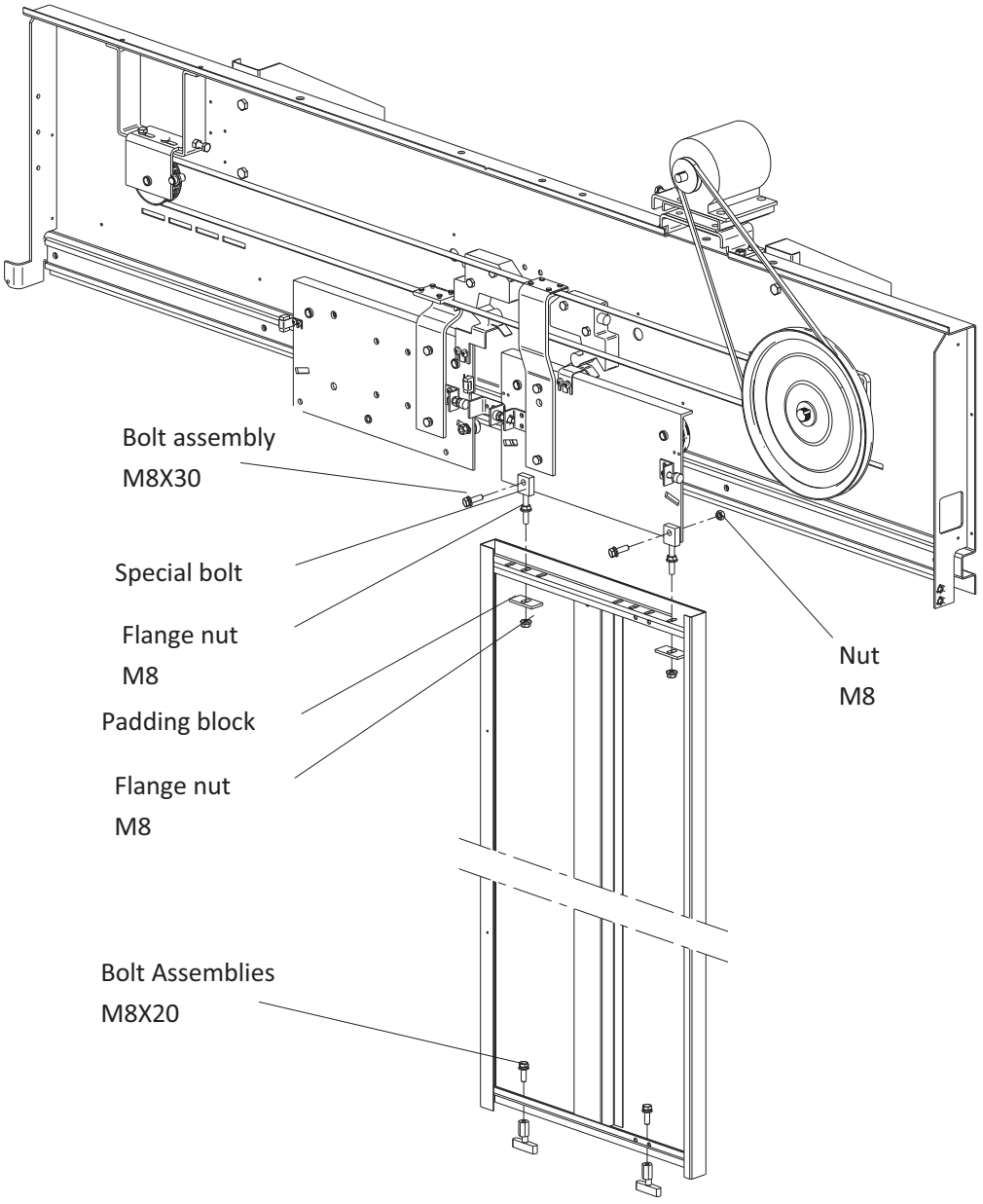


Figure 13-3

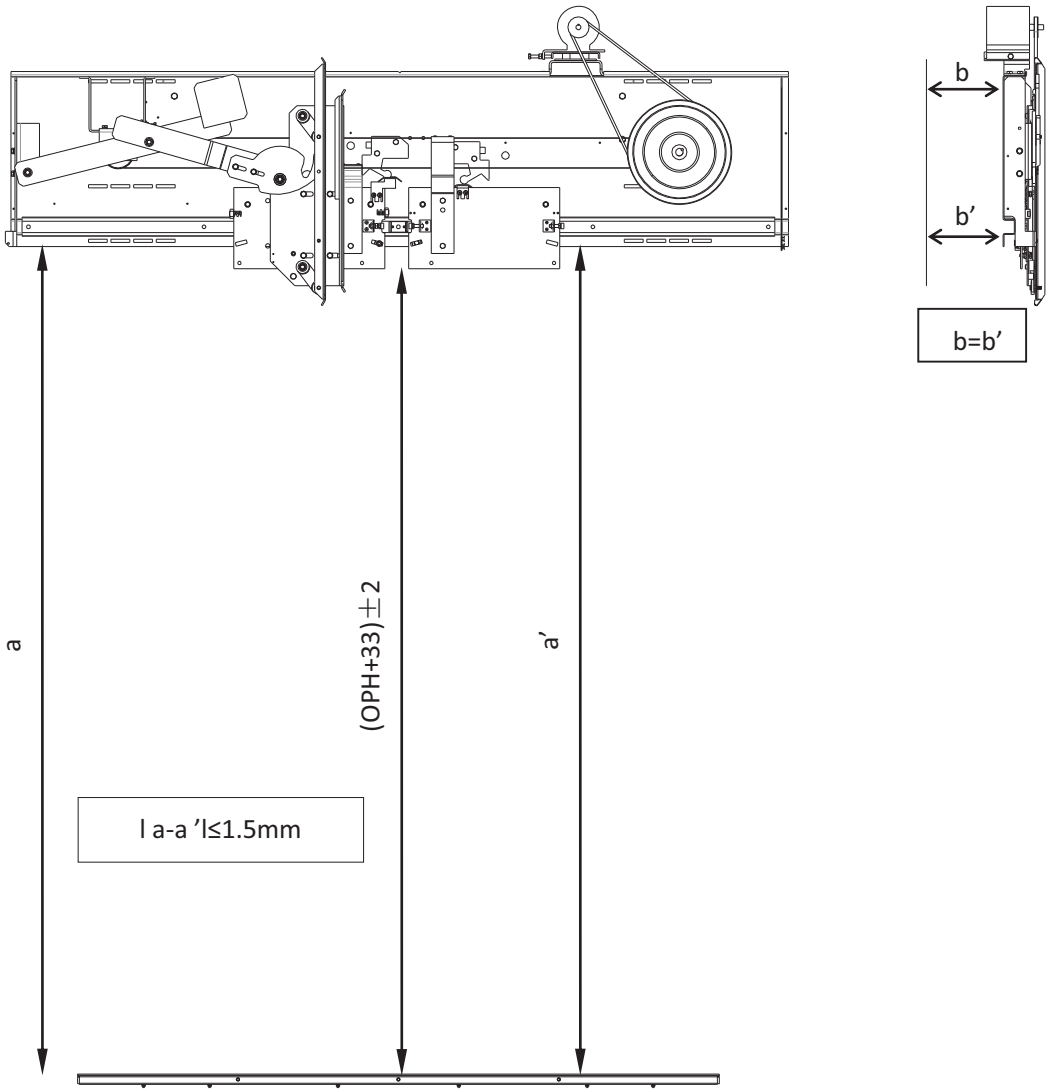


Figure 13-4

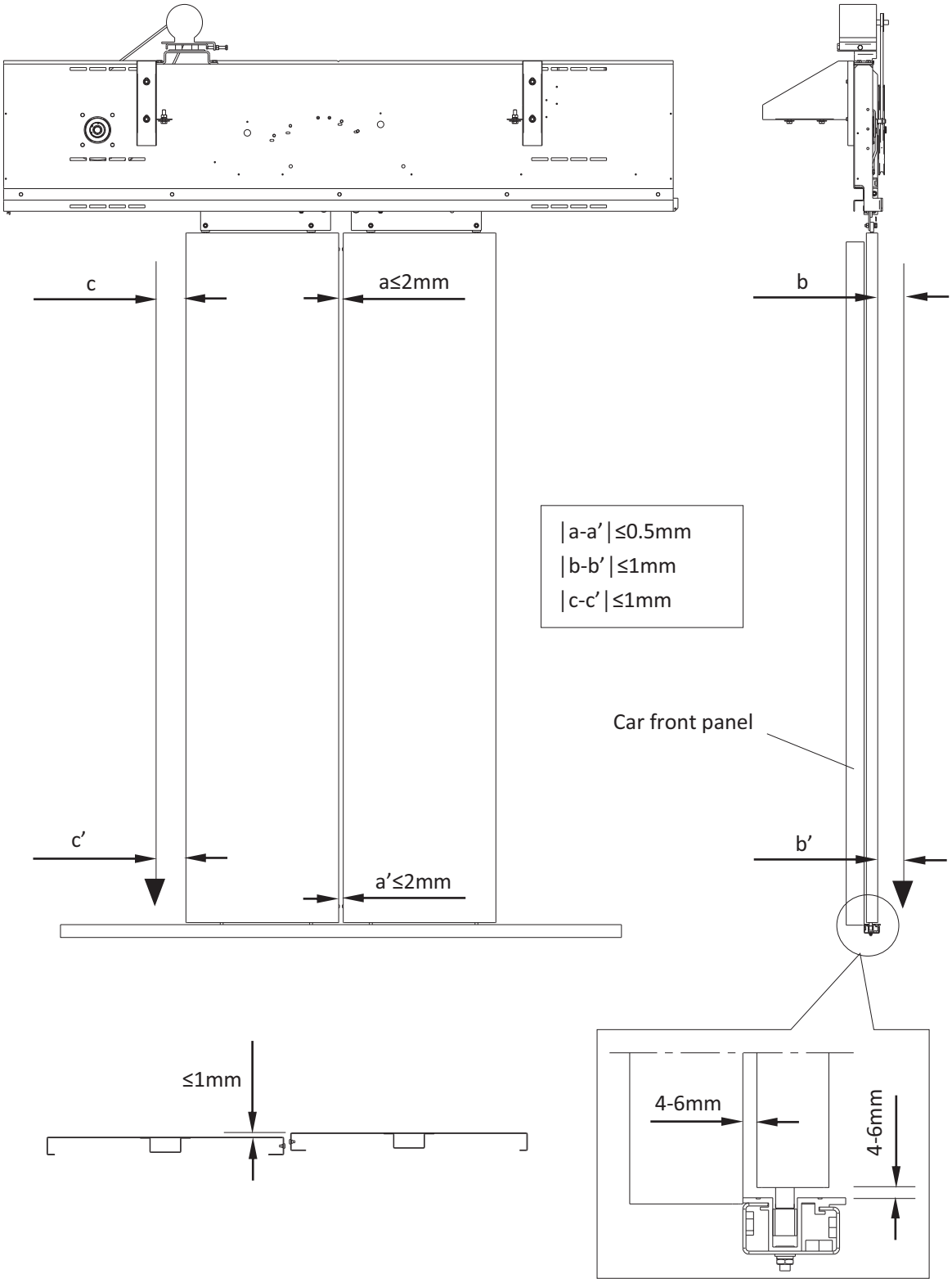

c
a≤2mm
b
|a-a'|≤0.5mm
|b-b'|≤1mm
|c-c'|≤1mm
Car front panel
c'
b'
a'≤2mm
≤1mm
4-6mm
4-6mm

Figure 13-5

13.3 Installation of door vane

Step	Instruction	Fig
1	Connect door vane on door operator.	Figure 13-6
2	Adjust of door vane.	Figure 13-7

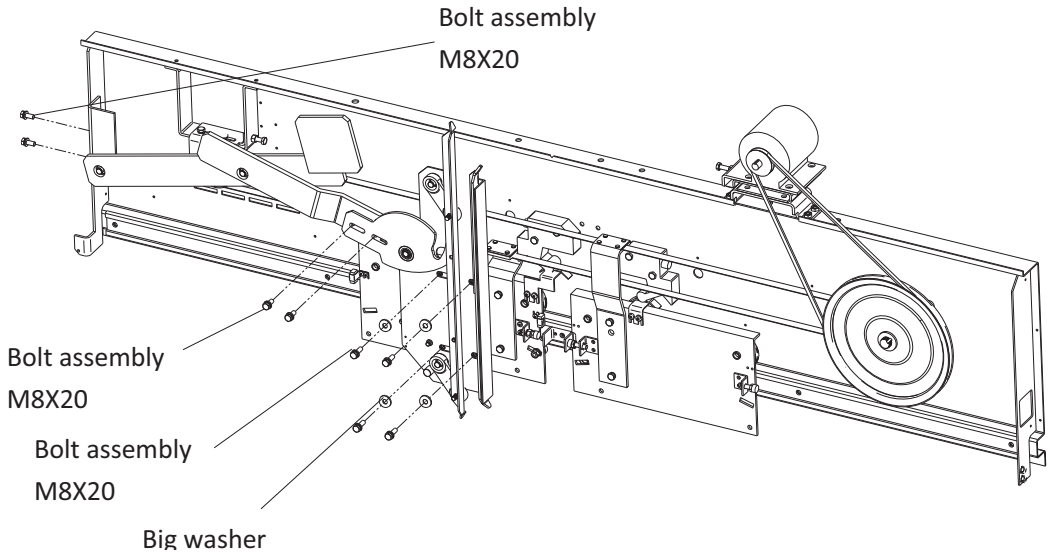


Figure 13-6

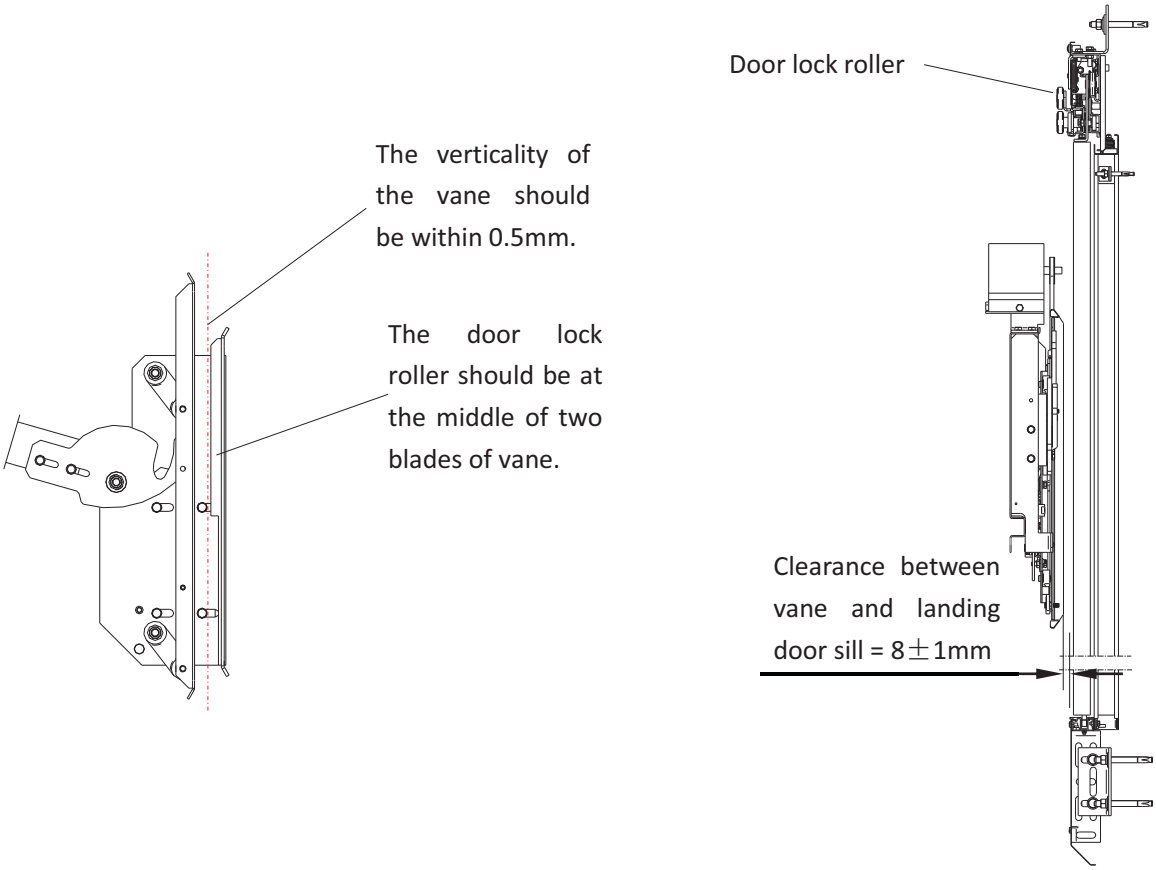


Figure 13-7

13.4 Installation of door protection device

Step	Instruction	Fig
1	Installation of light curtain.	Figure 13-8

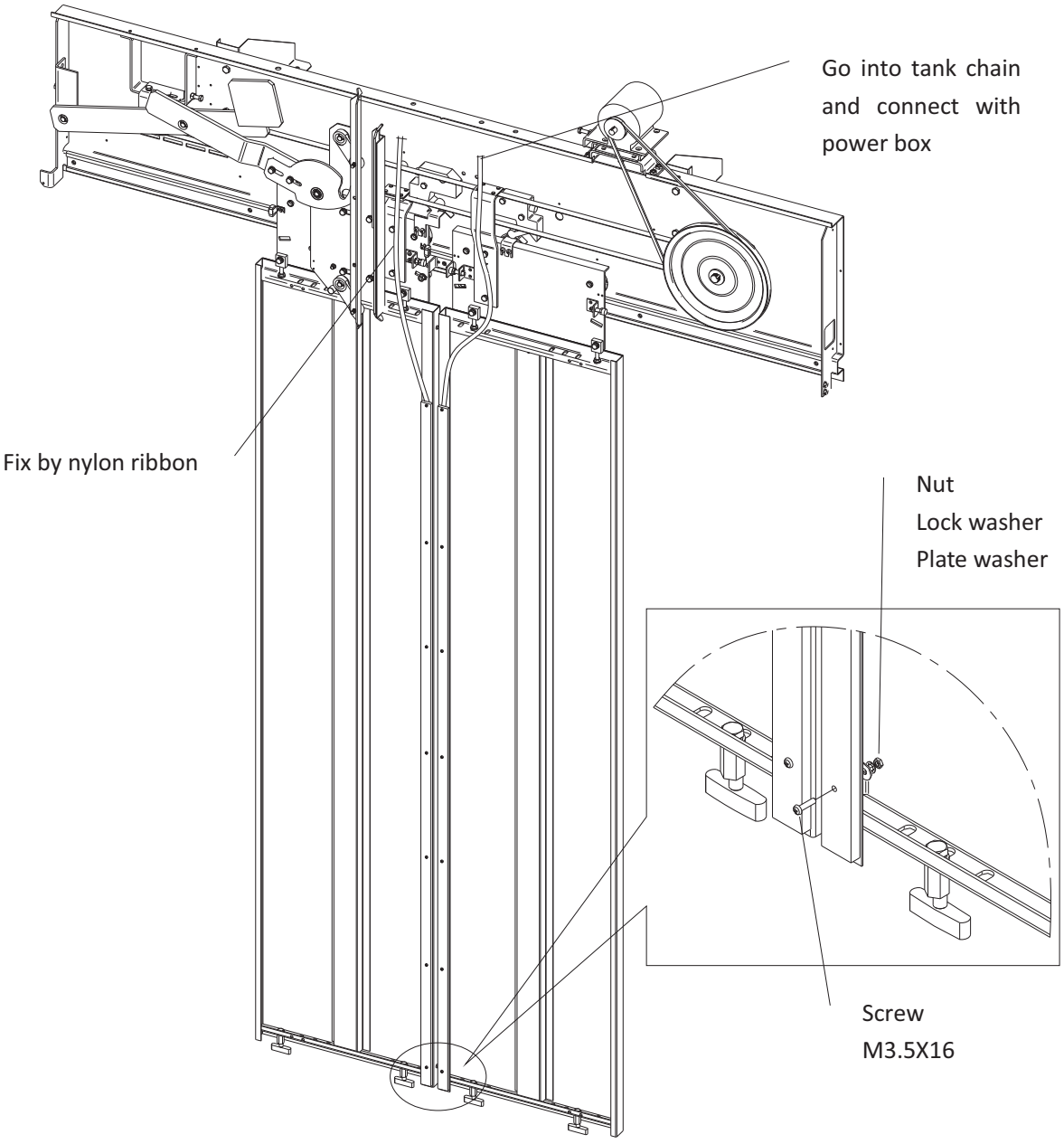
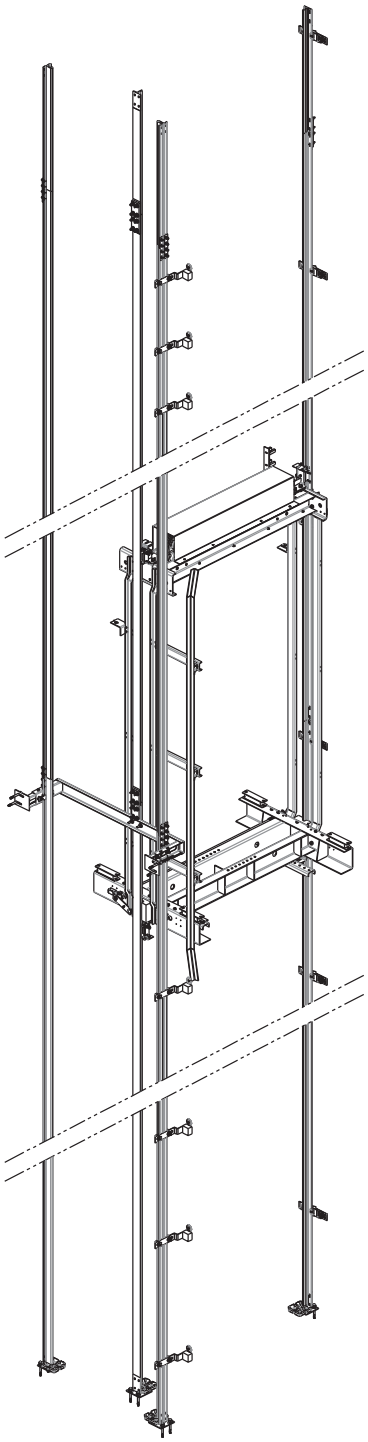


Figure 13-8

14 Installation of position reference system

Position reference system installation overview:



14.1Installation of limit switch

Step	Instruction	Fig
1	Connect the limit switch support on the guide	Figure 14-1
2	Connect the cam on the upright.	Figure 14-1
3	The switches installation dimension in the different elevator rated speed.	Figure 14-2

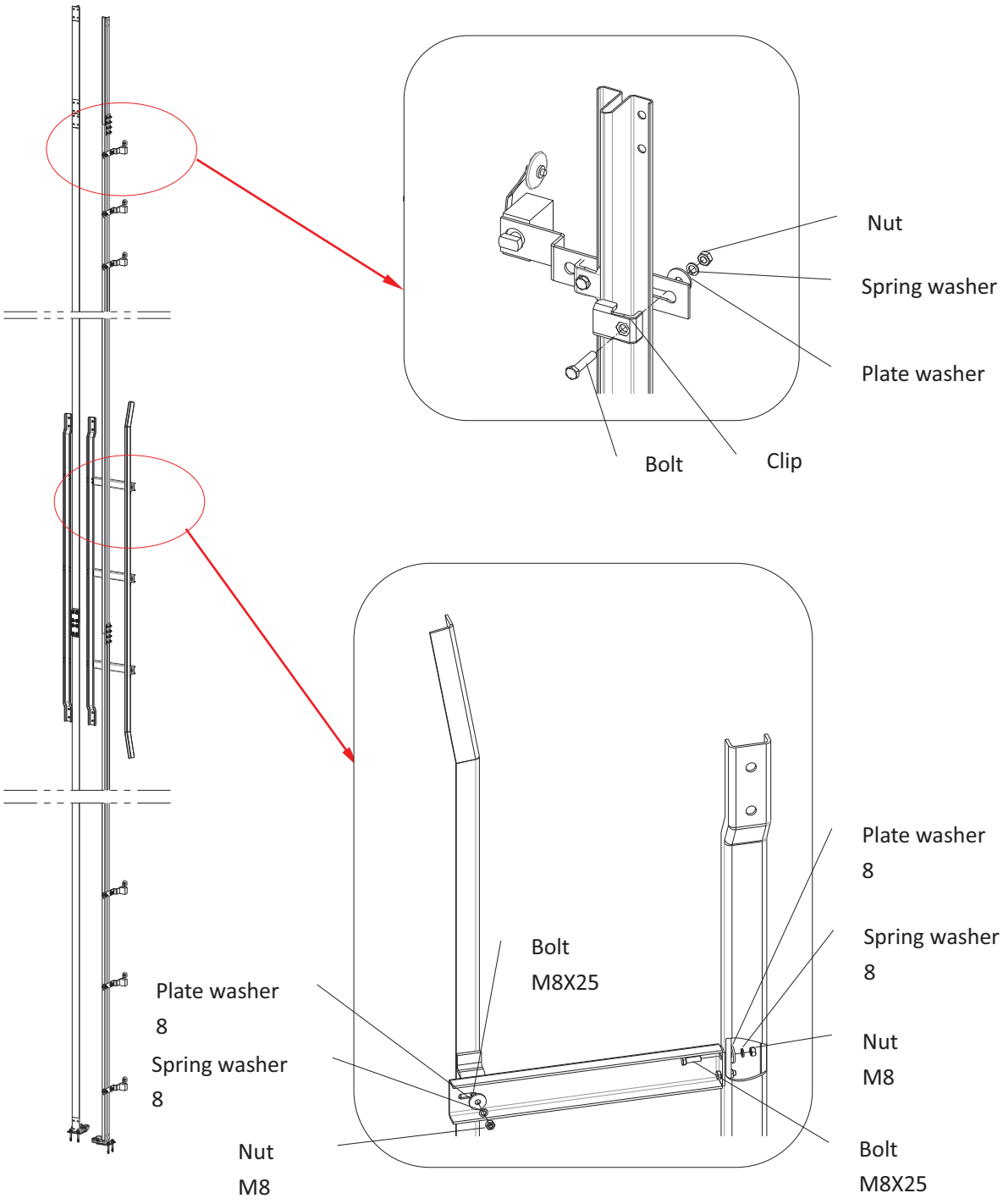


Figure 14-1

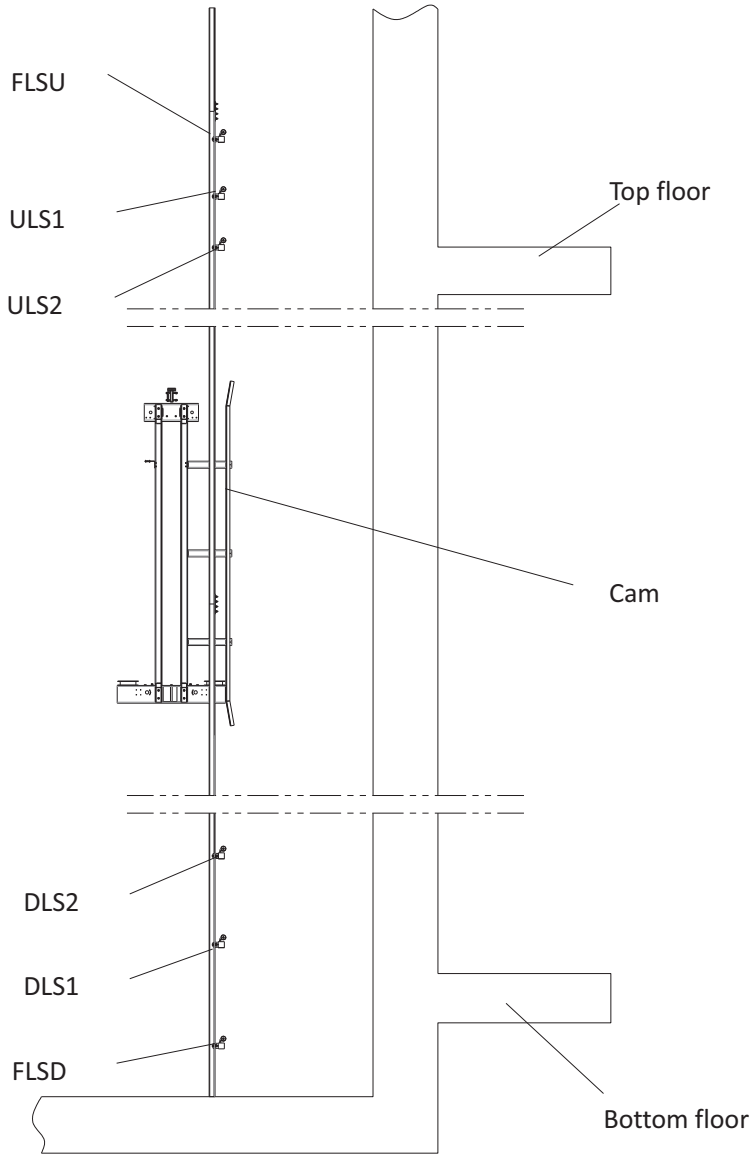


Figure 14-2

The switches installation dimension in the different elevator rated speed, shown as below. (unit: mm)

(The switches installation dimension should be the distance between the car sill and the landing door sill at this floor when the car running to the top or bottom floor in inspection speed as well as the switch switches-off.)

Speed (m/s)	**DLS2,ULS2**	**DLS1,ULS1**	**FLSD, FLSU**
1.0/1.50/1.75		-2400 mm	+150mm
2.00/2.50	-4500 mm	-2400 mm	+150mm

14.2 Installation of leveling device

Step	Instruction	Fig
1	Connect the leveling sensor on the car cross-head.	Figure 14-3
2	Connect the leveling sensor trigger plate on the guide at each floor.	Figure 14-3

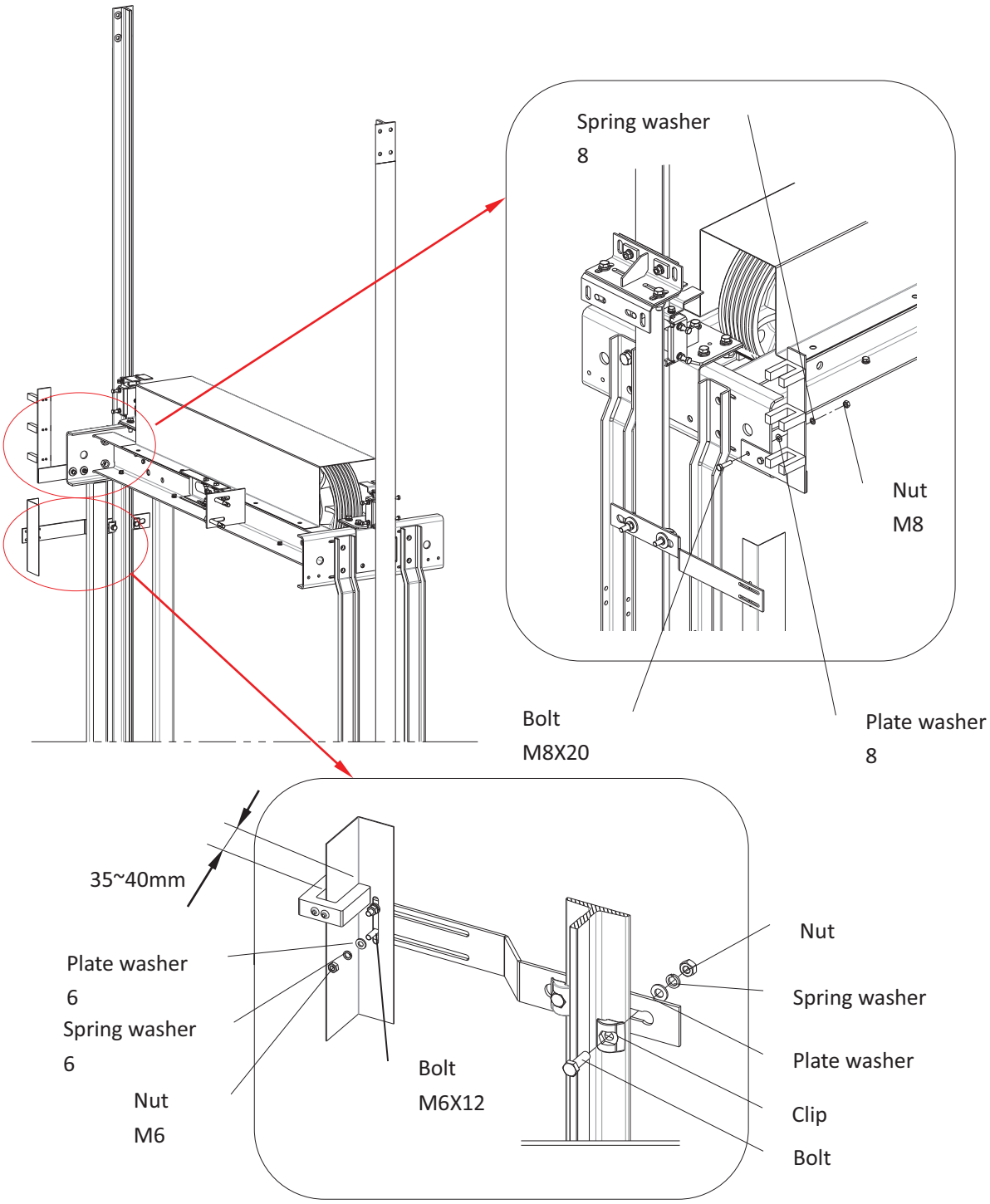


Figure 14-3

15 Installation of wiring

15.1 Installation of travelling cable

Step	Instruction	Fig
1	Fix the cable bracket on rail and sub-frame.	Figure 15-1/15-2
2	Fix the travelling cable on brackets.	Figure 15-1/15-2

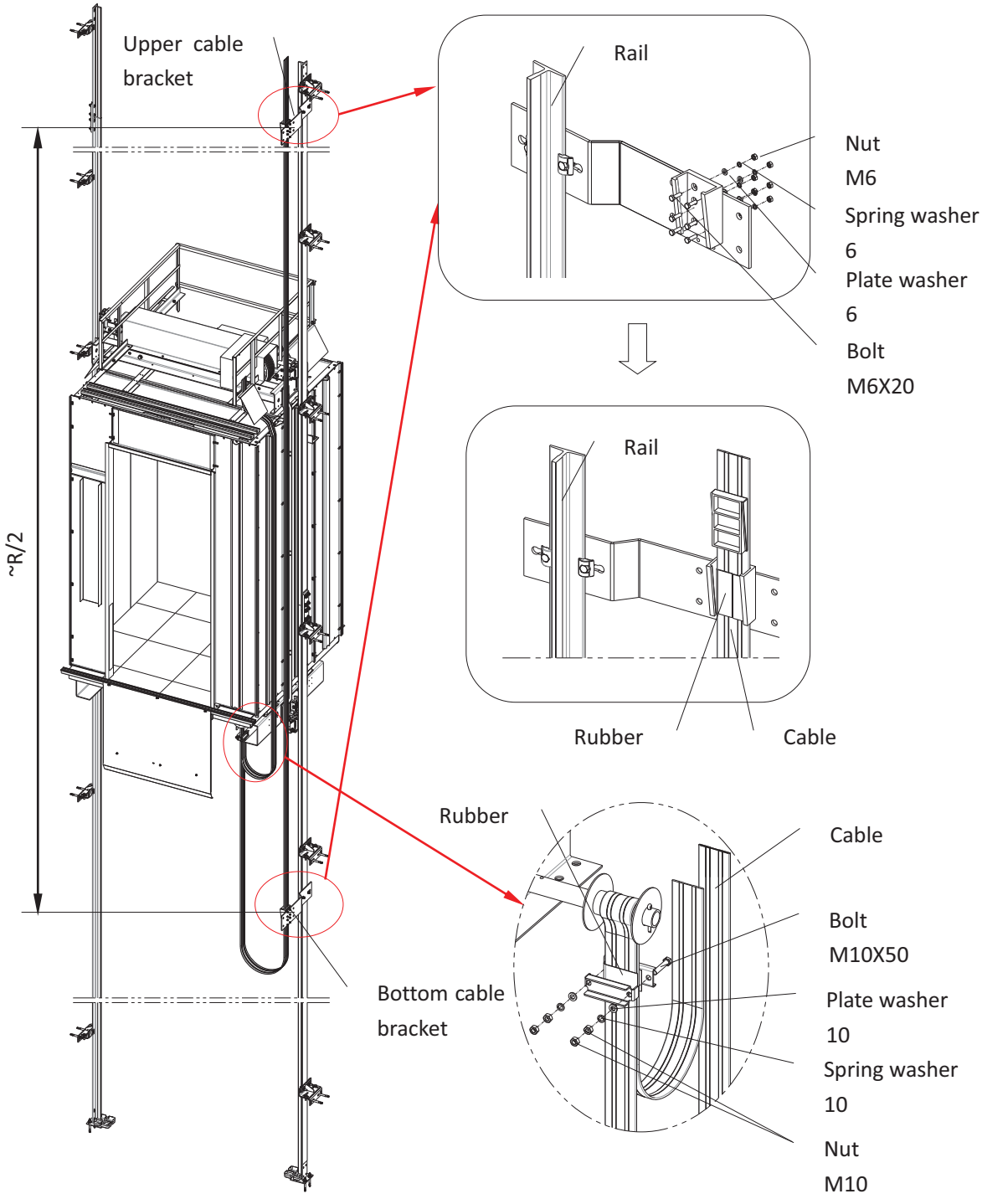


Figure 15-1

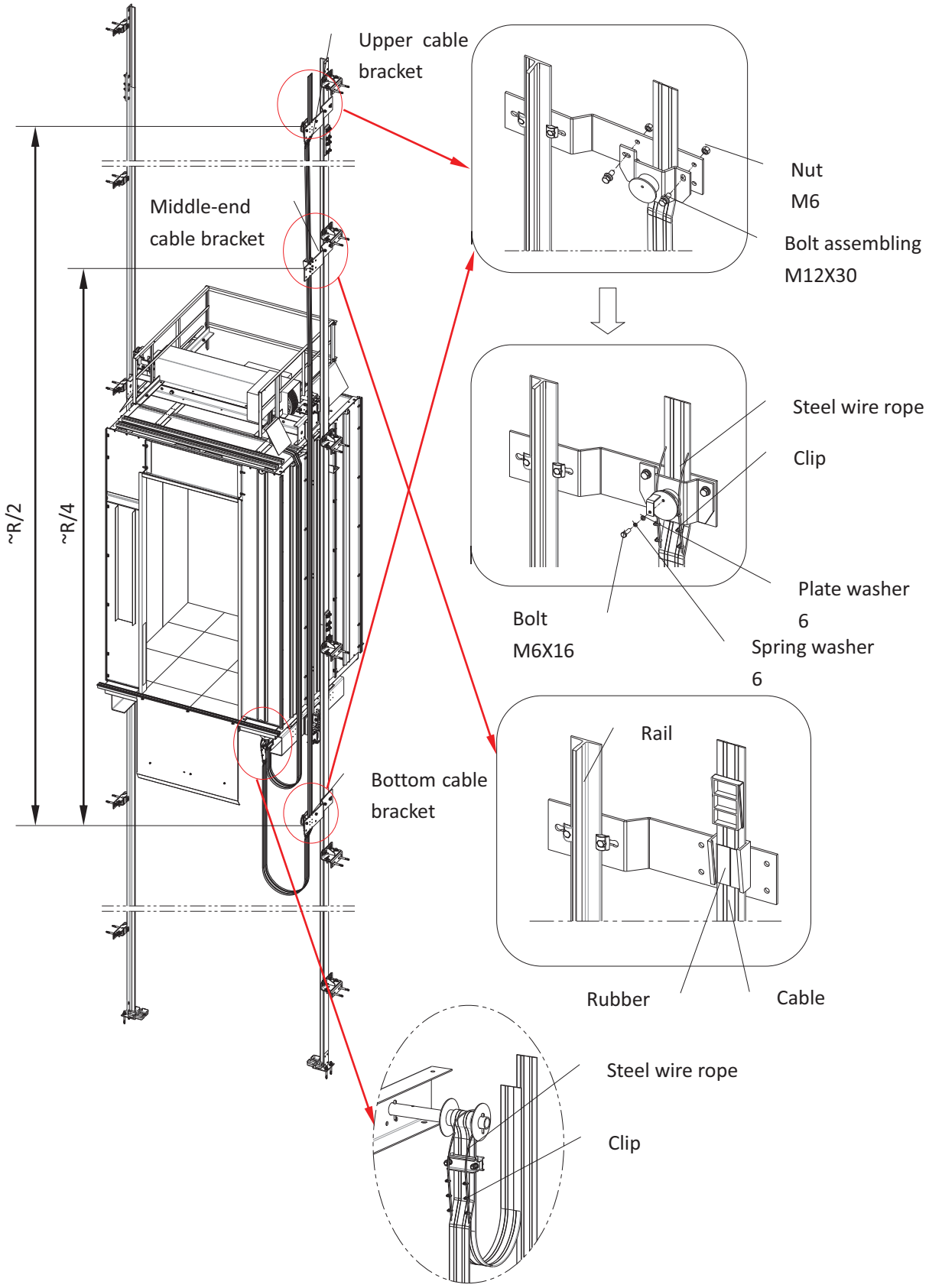

Upper cable bracket
Middle-end cable bracket
Bottom cable bracket
~R/2
~R/4
Nut
M6
Bolt assembling
M12X30
Steel wire rope
Clip
Plate washer
6
Bolt
M6X16
Spring washer
6
Rail
Rubber
Cable
Steel wire rope
Clip

Figure 15-2

15.2Installation of hoistway wiring

Step	Instruction	Fig
1	Fix the hoistway wire on the wall.	Figure 15-3

1. Hall fixtures, door locks and other branches of cable should be fixed at both ends and corner.

2. The distance between hoist-way wires and car parts should be more than 20mm.

3. The ground wire of door lock must be connected to the main ground wire in hoist-way.

4. The hoist-way wire should be fixed well, cables should be roughly perpendicular. All the grounding system must be in connection.

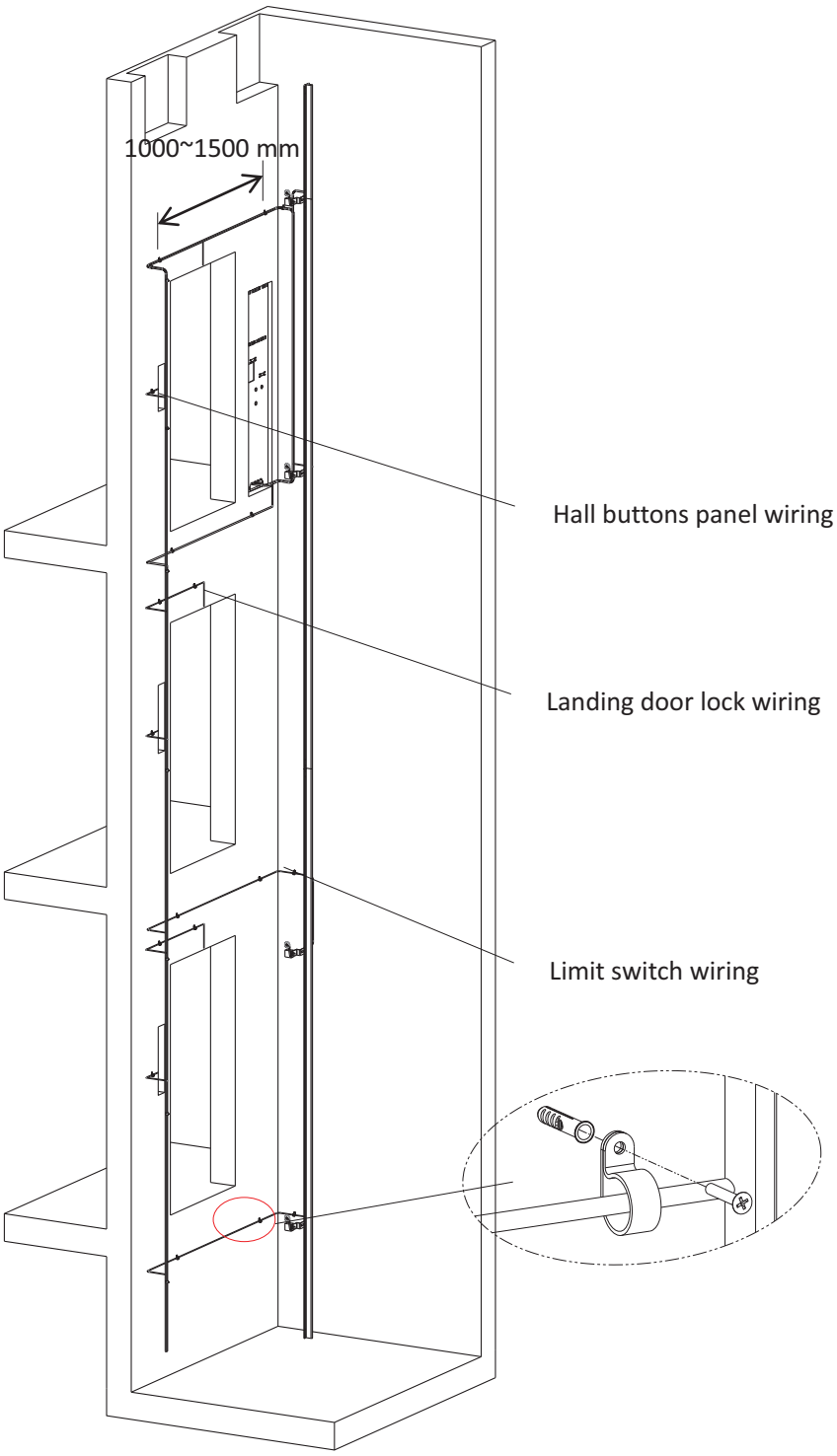
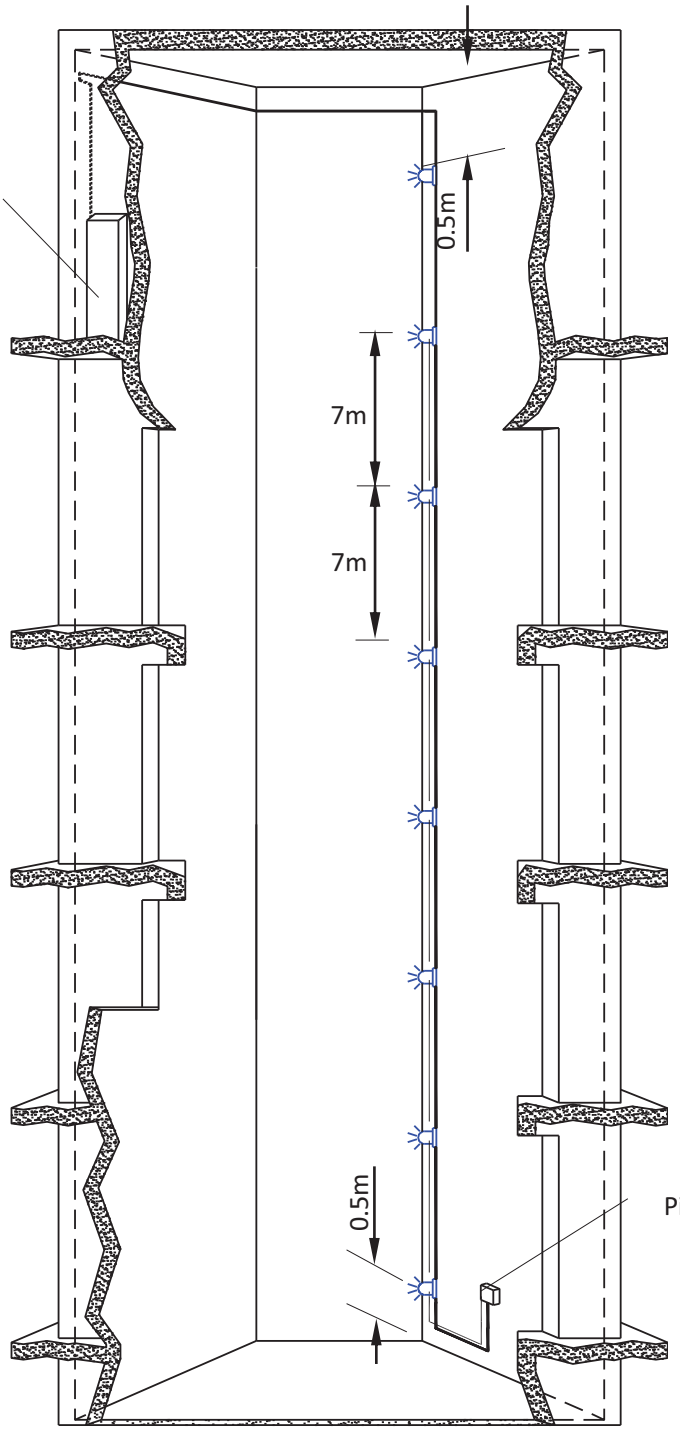


Figure 15-3

15.3 Installation of hoistway light

Step	Instruction	Fig
1	Fix the lamp on wall and connect wiring.	Figure 15-4



The wiring fixed on the hoistway wall, the method is same with hoistway wiring.

Figure 15-4

15.4Installation of pit wiring

Step	Instruction	Fig
1	The drawing for pit wiring.	Figure 15-5

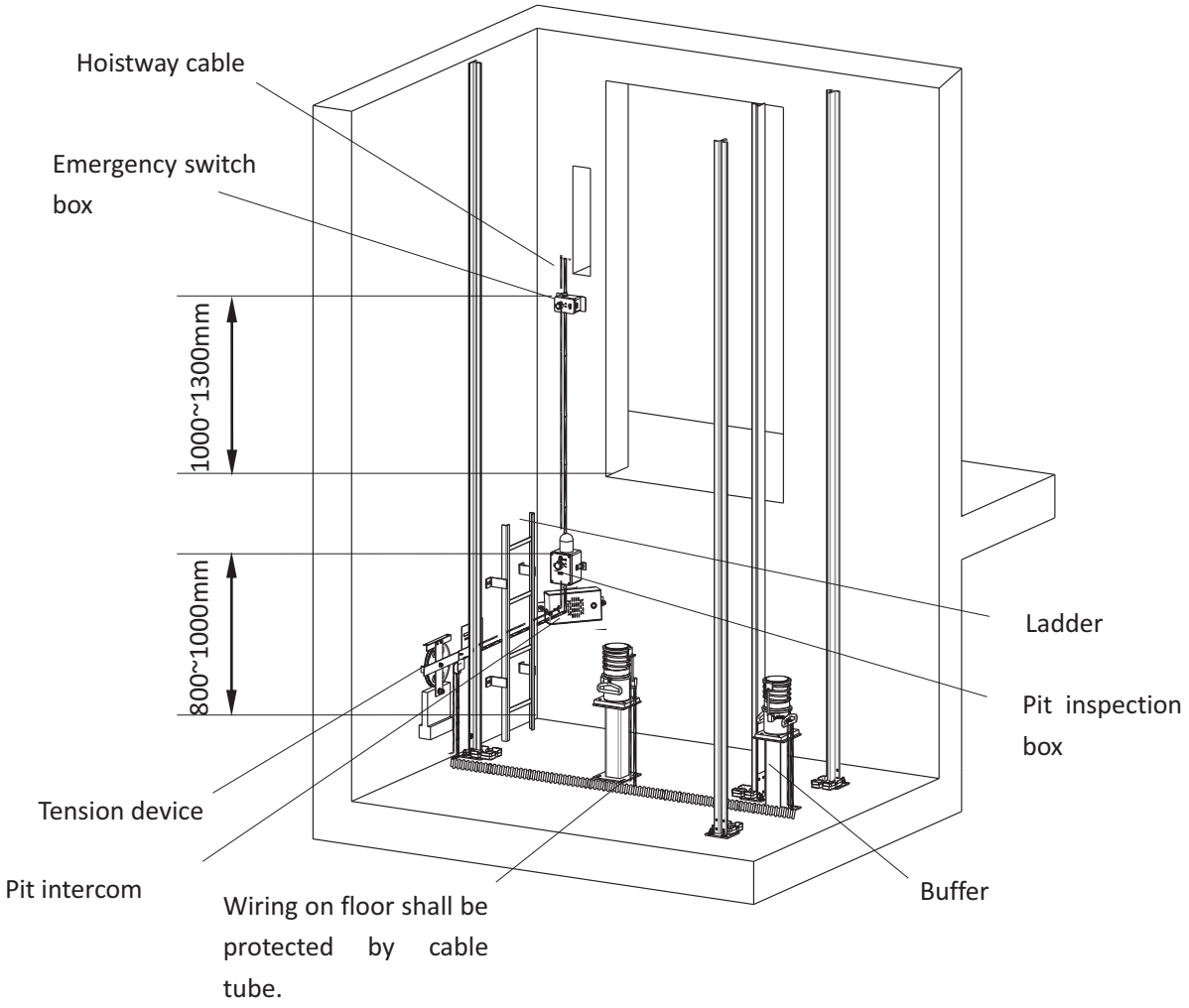


Figure 15-5

15.5Installation of car wiring

Step	Instruction	Fig
1	Connect car device wiring to junction box. Fix the wiring on the car by nylon ribbon.	Figure 15-6

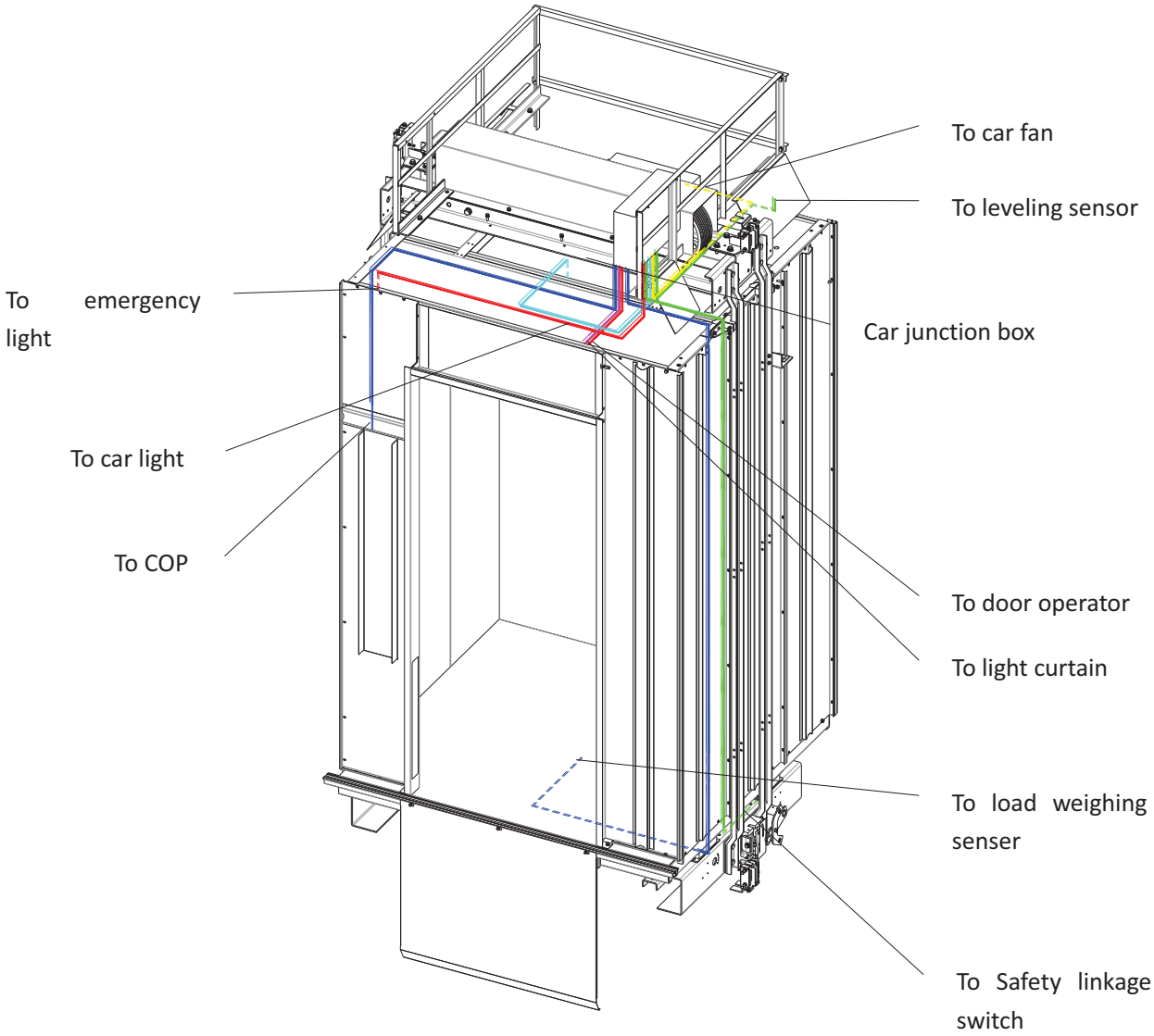


Figure 15-6

15.6Installation of inter-communication device

Step	Instruction	Fig
1	The drawing for inter-communication device.	Figure 15-7
2	Connect interphone car bottom unit on toe guard.	Figure 15-8

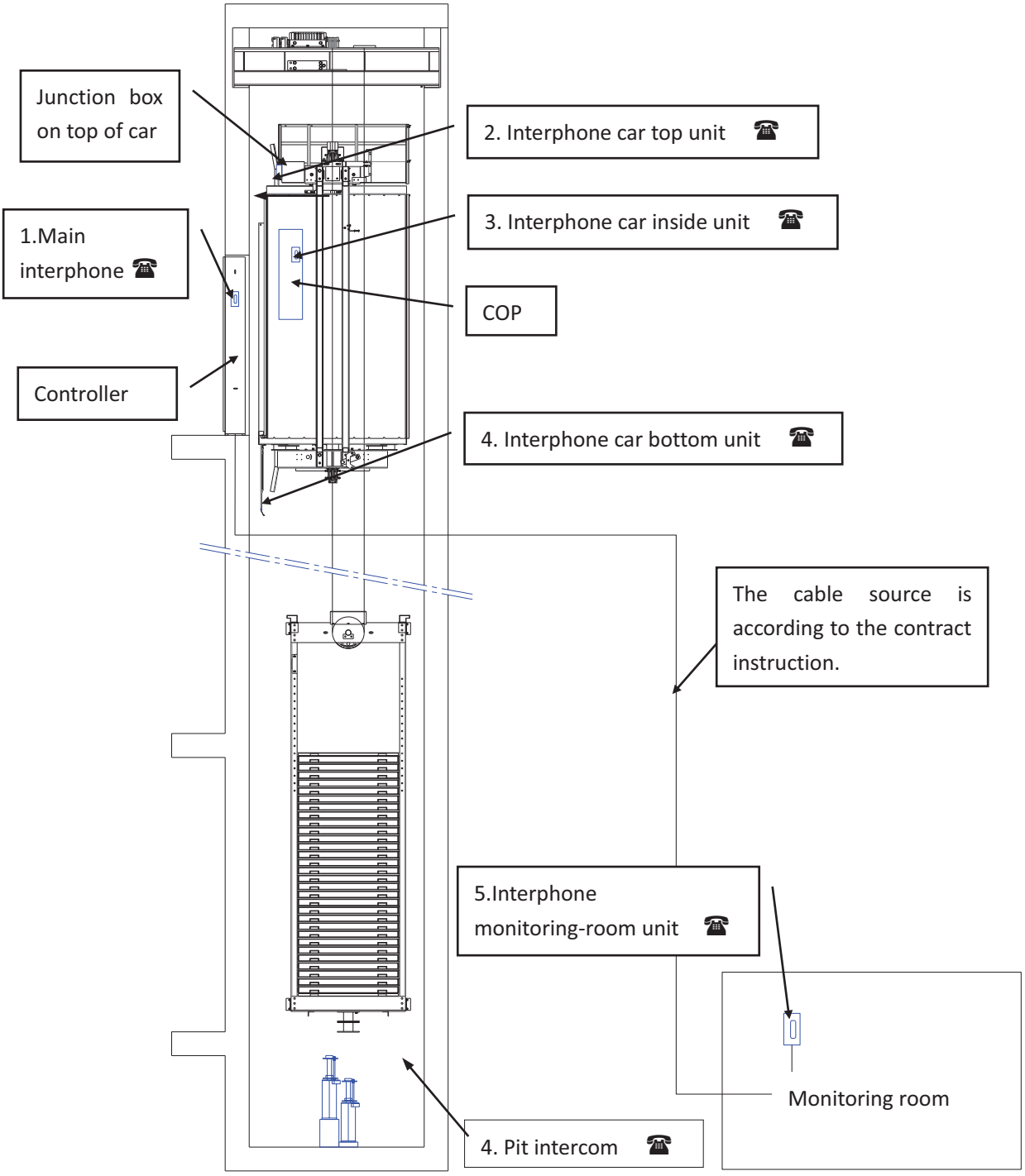


Figure 15-7

16 Installation of human interface device

16.1Installation of car operation panel

Step	Instruction	Fig
1	Connect the car operation panel on the car panel.	Figure 16-1

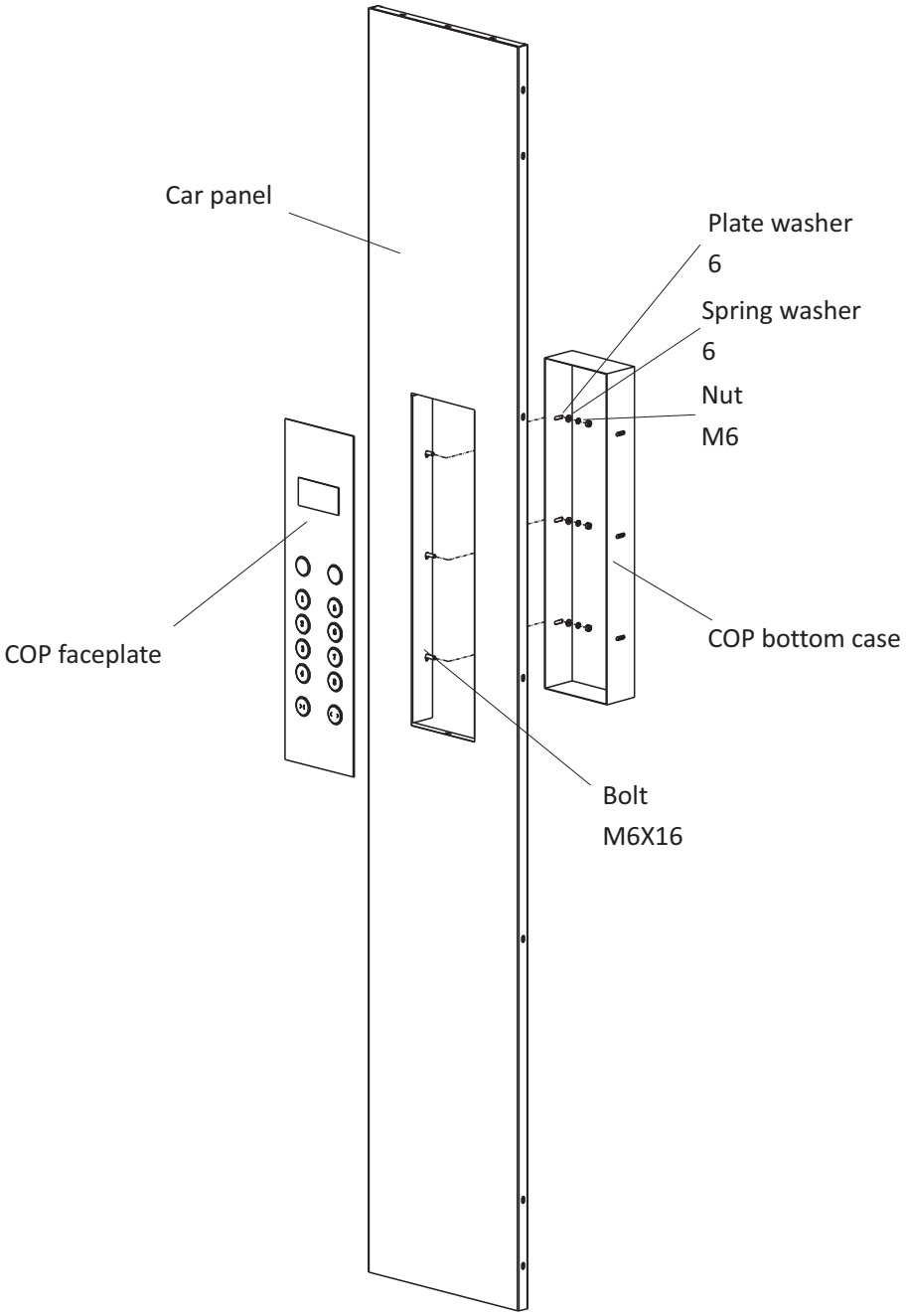


Figure 16-1

16.2Installation of hall buttons panel

Step	Instruction	Fig
1	Connect the hall buttons panel on the well wall by cement.	Figure 16-2

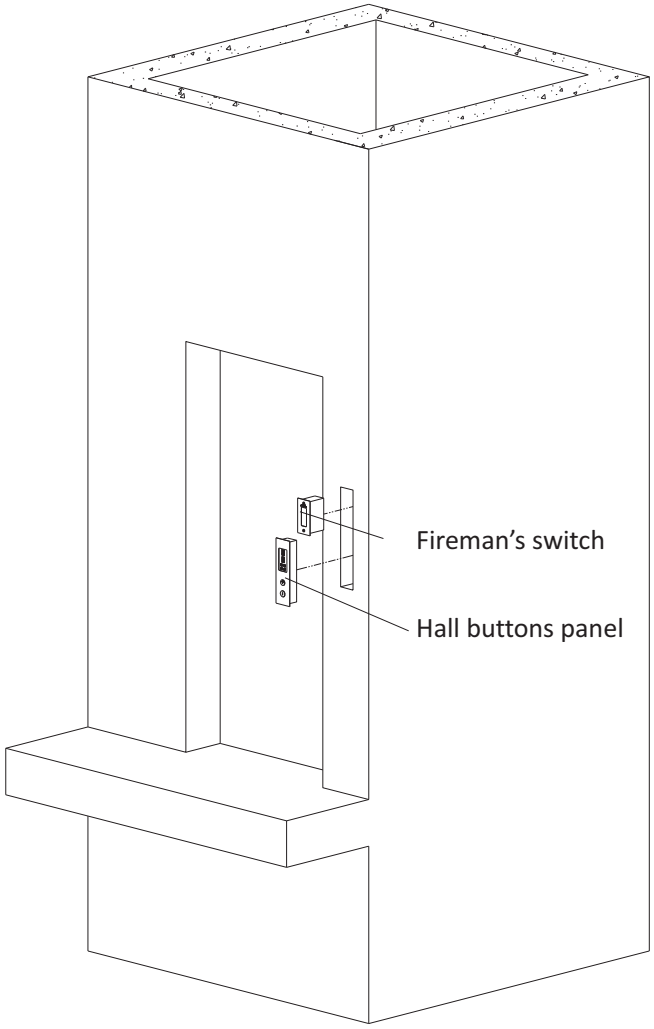


Figure 16-2

17 Installation of compensation chain

Step	Instruction	Fig
1	Connect the compensation chain under car sub-frame and counterweight frame.	Figure 17-1

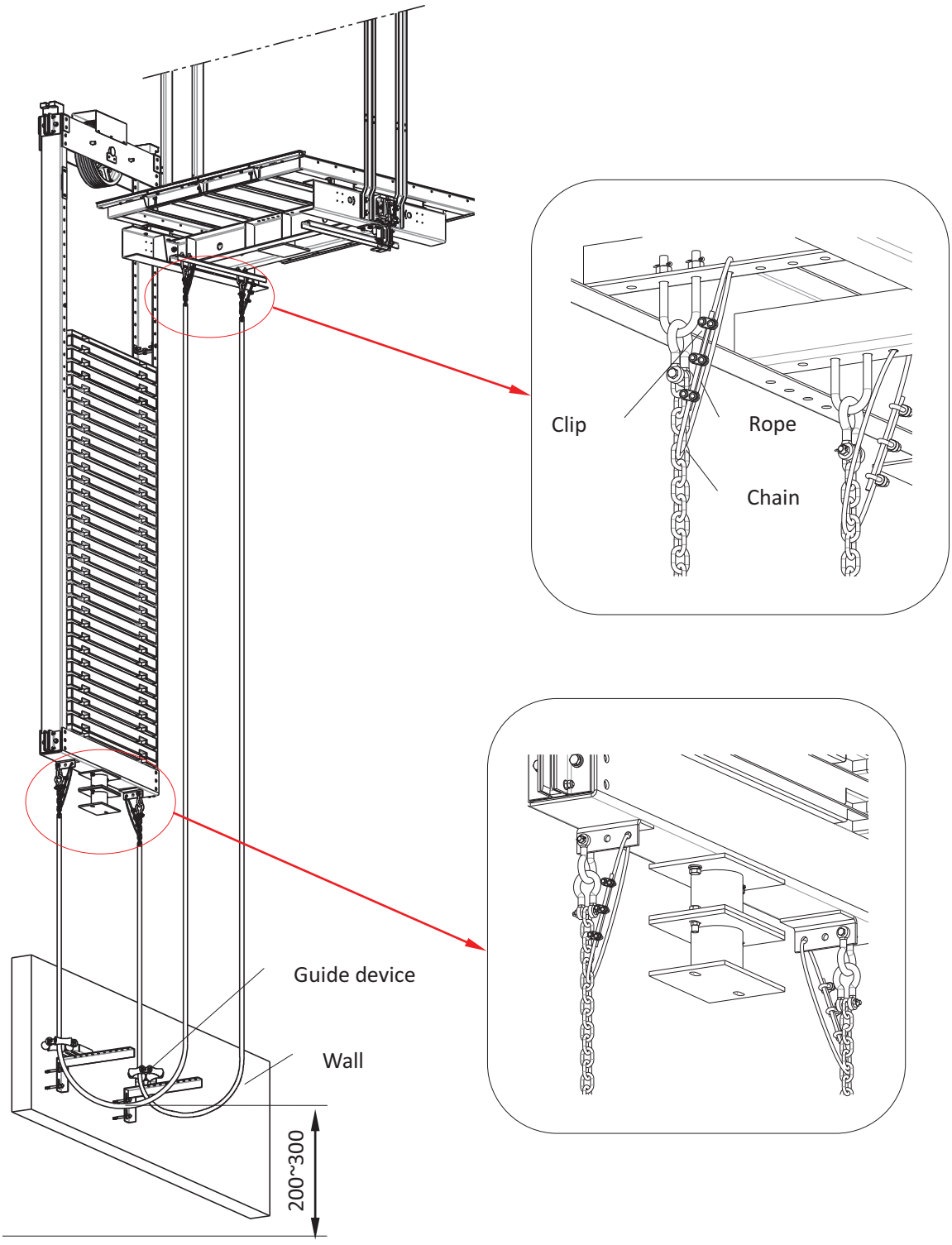


Figure 17-1

Annex

Tightening torques of bolts

Thread M	Tensile stress area A_s [mm^2]	8.8 Zn chromated
		Tighten torque [Nm]
3	4.96	1.07
4	8.65	2.52
5	13.99	5.01
6	19.84	8.55
8	36.10	20.6
10	57.30	40.8
12	83.20	70.7
16	155	173
20	242	338
24	349	583
30	555	1150
36	809	2000