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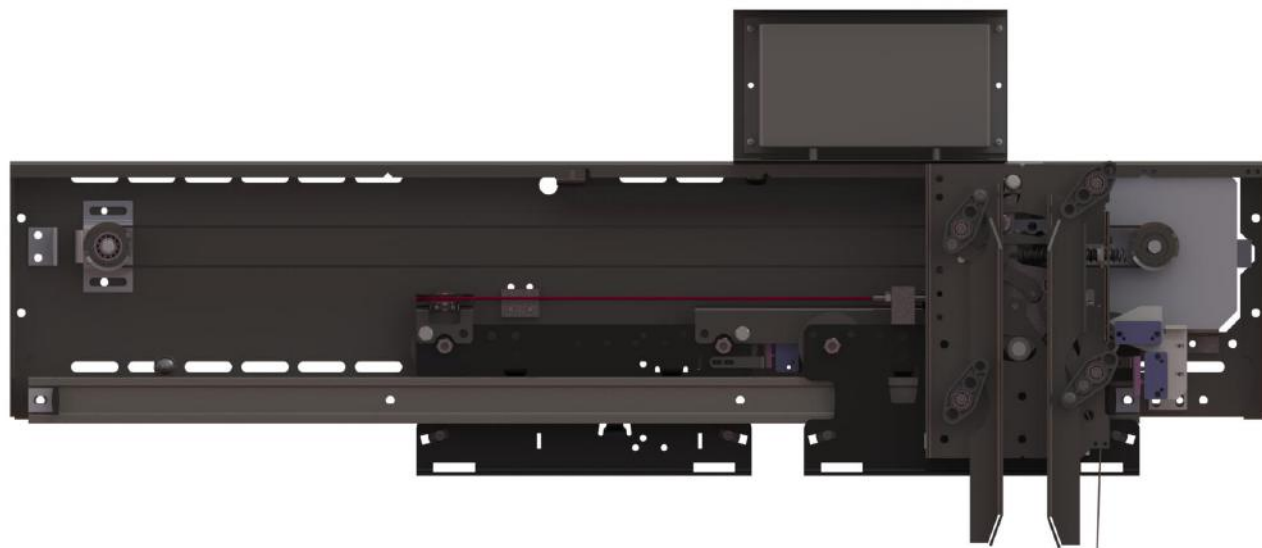
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Side opening Permanent Magnet
Variable Frequency Door Operator
— PMA2S/R-S、PMA2S/R-Z、PMA2S/R-SJ

User Manual

	使用说明书	编号：SM042-2010
	Easy-Con 旁开双折永磁变频门机	版本：第 C 版 日期：2010-2-24



User Manual

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Contents

1.	INTRODUCTION TO PRODUCTS.....	3
1.1.	TECHNICAL PARAMETERS.....	3
1.2.	WORKING CONDITIONS.....	3
1.3.	OPERATING PRINCIPLE.....	4
2.	INSTALLATION INSTRUCTIONS OF THE DOOR OPERATOR.....	5
2.1.	GENERAL DRAWING FOR THE DOOR OPERATOR INSTALLATION.....	5
2.2.	DOOR OPERATOR INSTALLATION AND ADJUSTMENT.....	6
2.2.1.	INSTALLATION OF THE MOUNTING BRACKET OF DOOR OPERATOR.....	6
2.2.1.1	STRAIGHT BEAM INSTALLATION.....	6
2.2.1.2	ROOF MOUNT	6
2.2.2.	DOOR OPERATOR INSTALLATION AND COMMISSIONING.....	8
2.2.3.	CAR DOOR PANEL INSTALLATION AND ADJUSTMENT.....	9
2.2.3.1	DOOR PANEL INSTALLATION	9
2.2.3.2	CAR DOOR ADJUSTMENT	10
2.2.4	SYNCHRONOUS DOOR KNIFE INSTALLATION AND COMMISSIONING.....	11
2.2.5	HANGING PLATE RESISTANCE ADJUSTMENT	13
2.2.6.	THE CABLING FOR THE DOOR PROTECTION.....	14
2.2.6.1	SAFE TOUCH PLATE LINE	14
2.2.6.2	SCREEN LINE	14
3.	CARE AND MAINTENANCE FOR THE DOOR OPERATOR.....	15
3.1.	PERIODIC CARE AND MAINTENANCE ITEMS FOR THE DOOR OPERATOR.....	
	ERROR! BOOKMARK NOT DEFINED.	
3.2.	ROUTINE CARE AND MAINTENANCE ITEMS FOR THE DOOR OPERATOR.....	
	ERROR! BOOKMARK NOT DEFINED.	
3.3.	SPARE PARTS FOR THE DOOR OPERATOR.....	ERROR! BOOKMARK NOT DEFINED.

1 INTRODUCTION TO PRODUCTS

PMA2S/R Side opening Permanent Magnet Variable Frequency Door Operator is a kind of door driving system driven by the permanent-magnet synchronous motor and controlled by the stepless speed regulation and frequency conversion, which can reach the best velocity curve of opening and closing the door, along with the advantages of high efficiency, reliability, simple operation and slight mechanical vibration. PMA2S/R Side opening Permanent Magnet Variable Frequency Door Operator is applicable to the door system with the clear door opening width of 600~1800mm.

Main features are as follows:

1. Self-learning on the rotary angle of the synchronous motor (static state)
2. Self-learning on door width
3. Demonstration on opening and closing the door automatically
4. Function of fault alarm and automatic protection
5. Optional function of sandwiching and detection.
6. Optional function of synchronous / asynchronous door vane

1.1 Technical Parameters

Input voltage: AC220V \pm 15%;

b) Frequency converter:

Rated frequency: 50/60Hz;

Output voltage: 0~220V;

Output frequency: 0~50Hzc) Motor:

c) Motor:

Rated voltage: AC100/125V;

Rated rotating speed: 180r/min;

Rated power: 43/94W

1.2 Working Conditions

- a) Altitude: With 100% of the rated current output while below 1000m;
With 95% of the rated current output while between 1000~2000m;
With 85% of the rated current output while between 2000~3000m;

-
- b)The highest average monthly relative humidity at the place of operation is 95%, and the average monthly minimum temperature is not higher than 25;
 - c)The fluctuation of the supply voltage to the rated voltage should be within the range of + 15%;
 - d)No corrosive gas, flammable gas and conductive dust in the ambient air;

1.3 Operating Principle

Side opening Permanent Magnet Variable Frequency Door Operator is powered by the permanent-magnet synchronous motor, driven by synchronous belt, and controls the door switching action via the frequency conversion and stepless speed regulation. The door hanging plate is driven by the synchronous belt and thus the car door is connected with the hanging plate and control the opening and closing function.

The utility model is characterized in that the knife is installed on the hanging plate of the door machine, and the door knife is opened and closed when the power shaft of the door knife and the synchronous belt of the machine are clamped. At the same time shaft driven plate 7 through two axis force is transferred to the two blade, so that the door to door knife knife center collapsed, to the right door to door knife knife contact hall door will open the door after the ball hall, two blades and the hall door lock ball stop limit to continue to function in shaft under the shaft drives the plate to make the pick up, pick up the roller along the lock hook, contact and disconnect the lock hook and the auxiliary hook shaft and hook each other cards and realize the normal version release, unlock the door. With the opening of the door machine, the lifting arm rotates clockwise with the board under the force of the pressure spring. The two blade clamping lock to open the door in the croquet hall.

The door closed the door: the normal machine drives the axial center door movement, because of the lifting arm with the board and the two blade holder clamping hall door lock ball, running to the door in place, put a knife touches the lifting arm shaft on the trajectory makes the lifting arm rotate clockwise, and the lifting board and card. Under the action of the driving shaft of the door machine, the shaft driven plate rotates counterclockwise to the limit. By the pressure spring guide plate pressing spring compression plate and through two axis force is transferred to the two blades and on the two door knife with two blades and open, mobile, office door closed, pick plate drives a counter clockwise, the lock hook pressure spring to spring force frame under the clockwise rotation and contact closure, clipping and the auxiliary hook hook and cross version. Closed door lock.

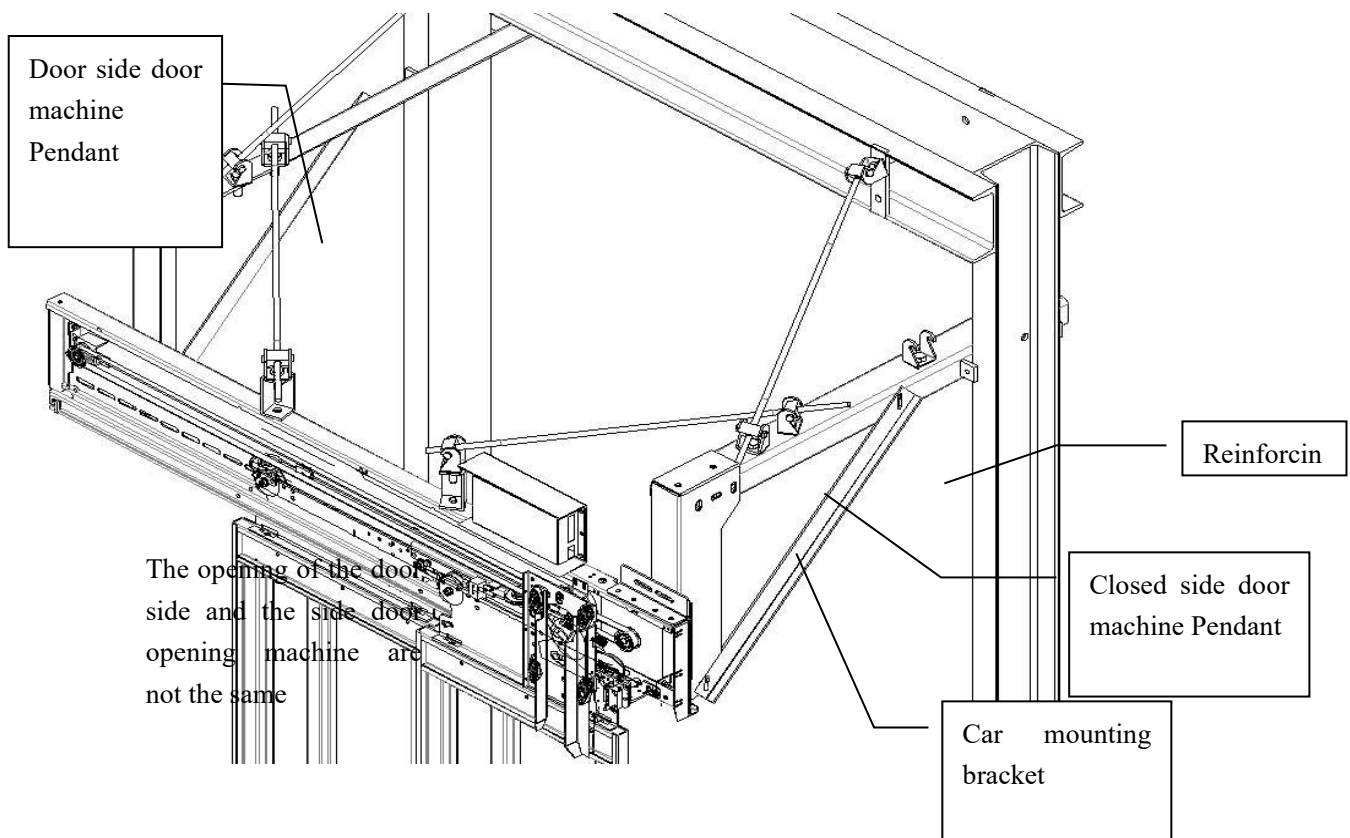


Fig. 2-1 General drawing for the door operator installation

2.2 Door Operator Installation and Adjustment

2.2.1. Installation of the Mounting Bracket of Door Operator

2.2.1.1 Straight Beam Installation

Install two cross bars on the straight beam of the car respectively with fastening bolts, and adjust the bolts until the straight beam is firmly fastened. Fix the two ends of two pull rods to the cross bar and the straight beam respectively via the drag hook and then fasten them with nuts. Install the two mounting plates to the door operator respectively and fasten them with the bolts. Refer to Fig. 2-2

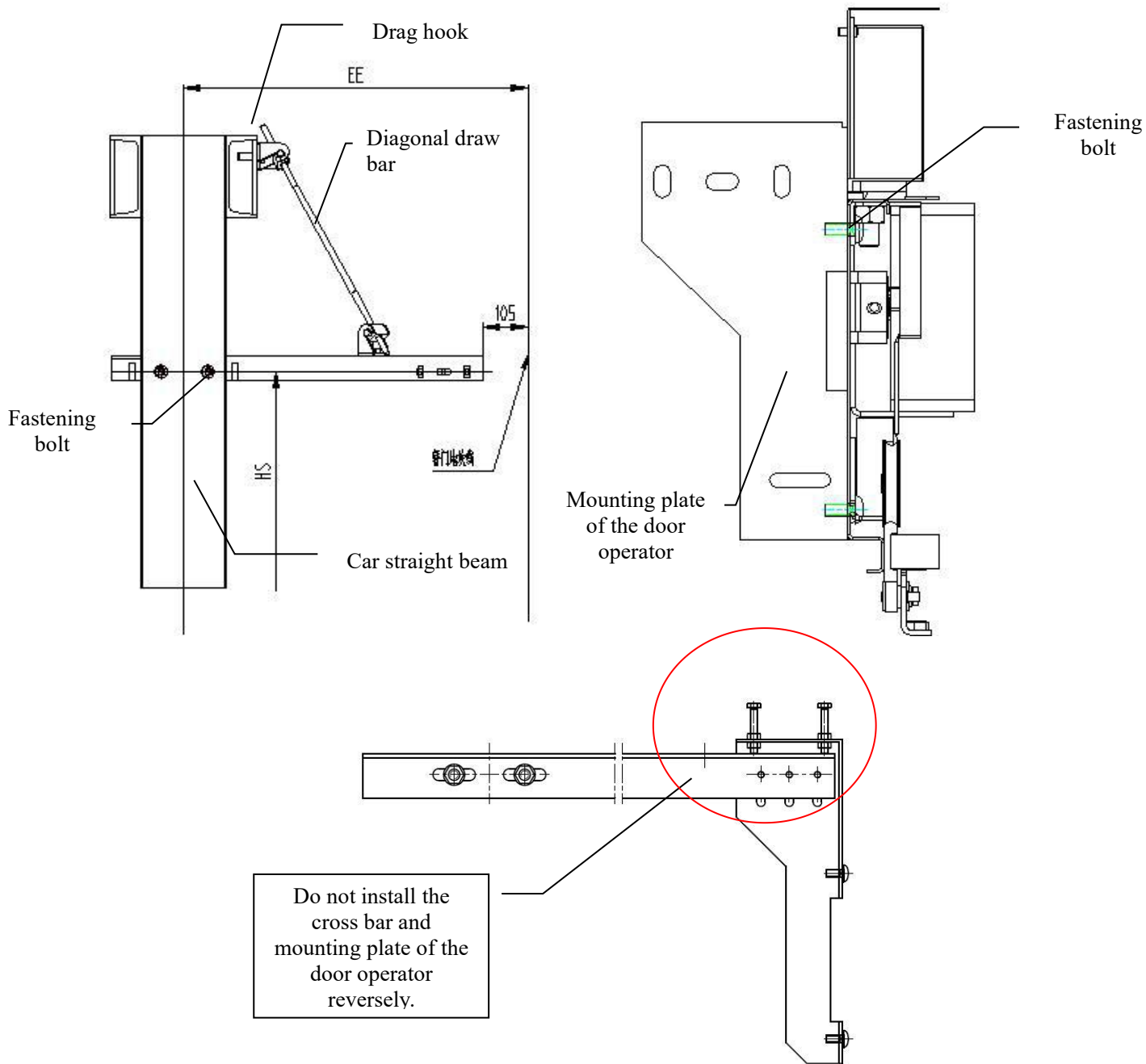


Fig. 2-2 Installation of door operator cross bar and pull rod

2.2.1.2 Car Top Installation

Fasten the car top mounting bracket of the door operator with the door operator by fastening bolts, and make the bracket fixed in the C-shaped notch on the car top. Refer to Fig. 2-3

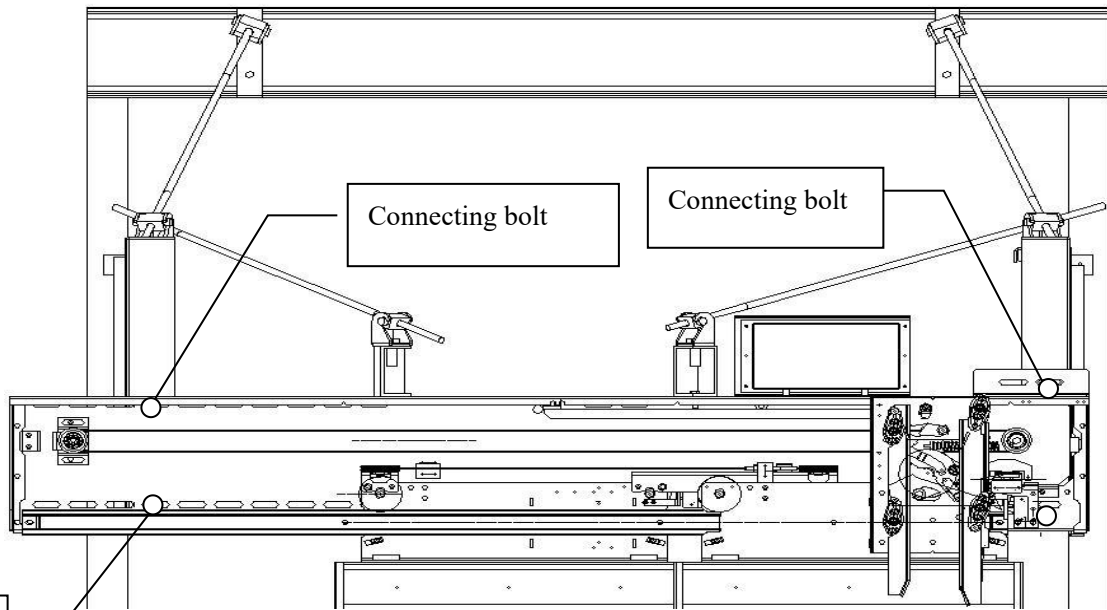


Fig. 2-4 Door operator straight beam installation diagram

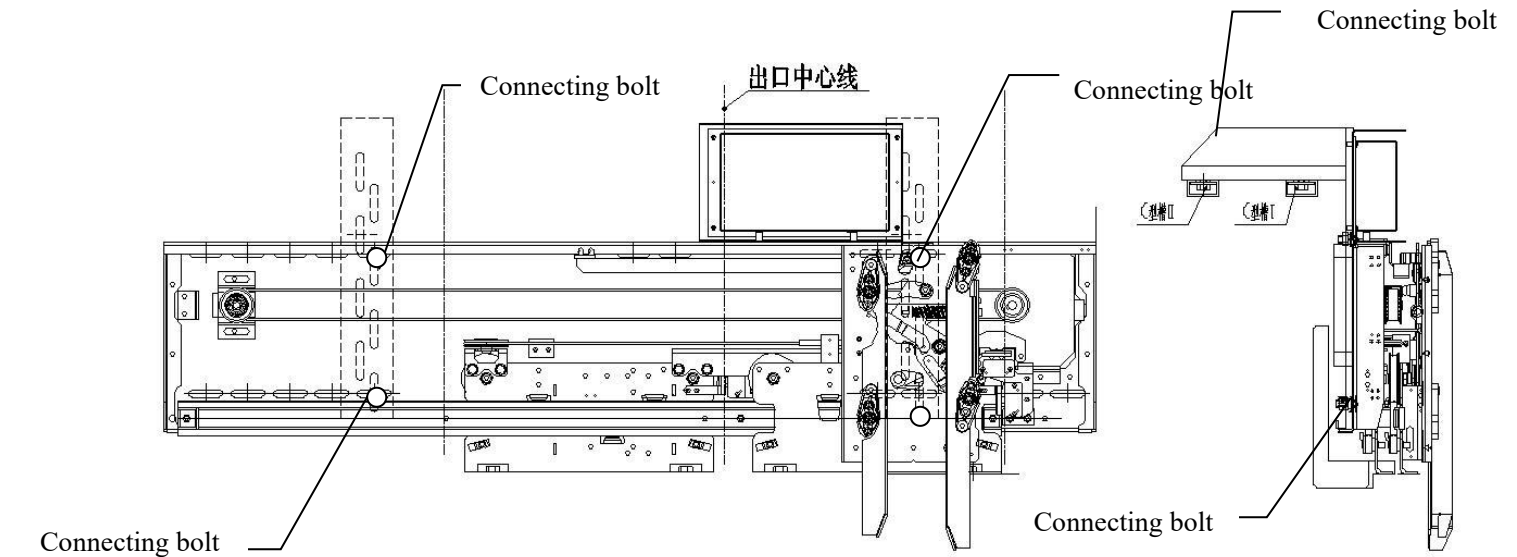


Fig. 2-5 door machine top installation diagram

2.2.3 Car Door Panel Installation and Adjustment

2.2.3.1 Car Door Panel Installation

First install the door slide block, see Fig. 2-6. Then adjust the clearance between the low-relying pulley and the guide rail within 0.2~0.5mm..Measure with the feeler gauge. Refer to Fig. 2-7

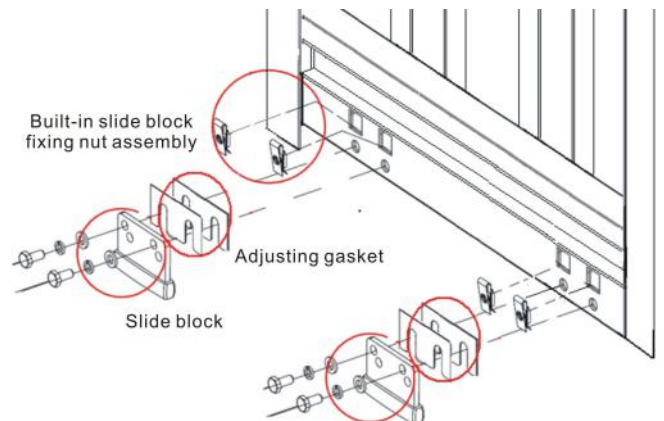


Fig. 2-6 Door slide block installation

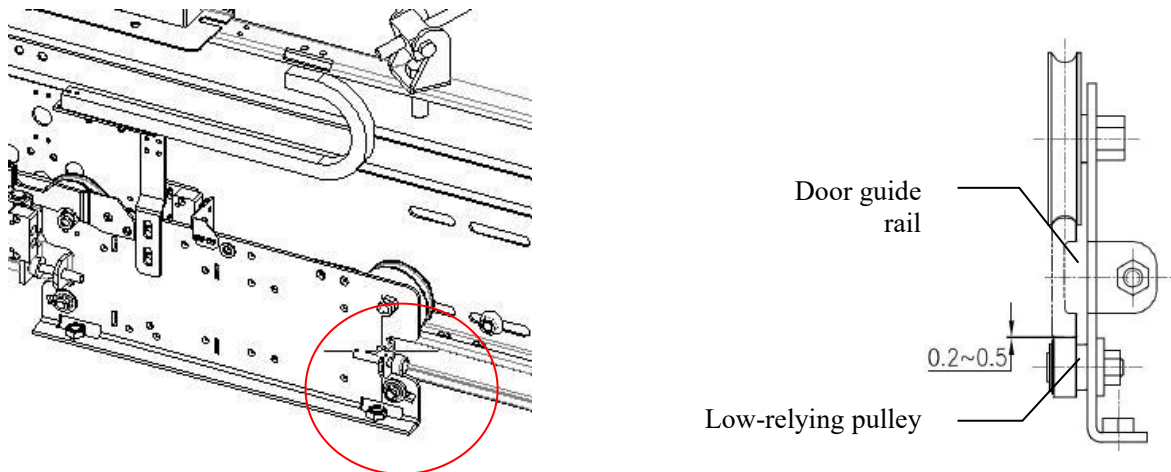


Fig. 2-7 Adjustment of hanging plate low-relying pulley

For car door panel installation, refer to Fig. 2-8

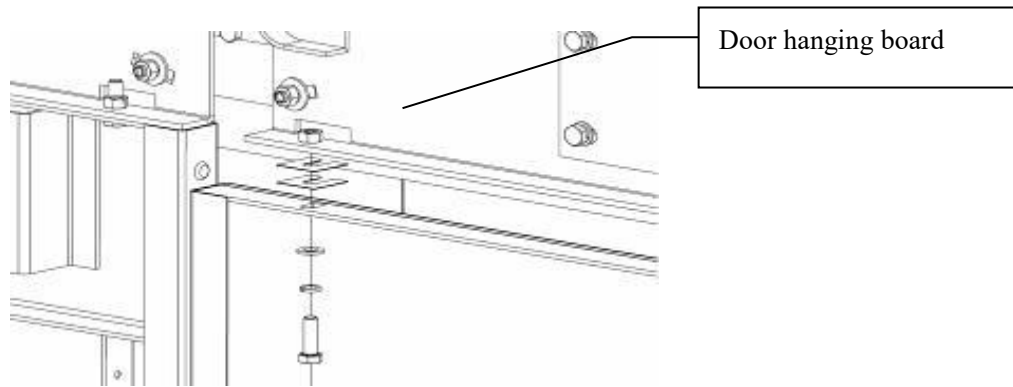


Fig. 2-8 Car door panel installation

2.2.3.2 Adjustment of Car Door Panel

1. Use the plumb to check and adjust the perpendicularity of the door panel, and control the error from the upside and downside of the door within 1mm. See Fig. 2-9 Main view of the car door panel installation.

2. The car door sill and the lower end of the gap is 4-6mm, slow car door and small side (car front) clearance, clearance between the car door and fast and slow car door for 4-6mm (on both sides of the gap is not greater than 1mm); see 2-10 door assembly side view and figure 2-12 car door assembly plan.

3 the difference between the fast car door panel and the slow car door panel is 20mm, the deviation is not more than 2mm. See Figure 2-11 car door assembly main view and figure 2-12 car door assembly view.

4 when the door is closed, the fast car door panel and the front wall of the car wall, as well as the difference between the slow car door panel and the front wall of the car is 20, and the deviation is not more than 2mm. See Figure 2-12 car door assembly view

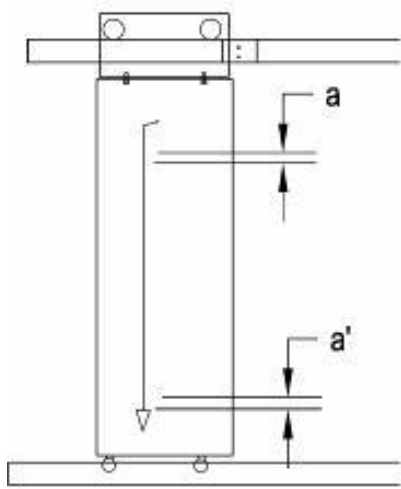


Fig. 2-11 Main view of the car door installation

$$a'-a \leq 1\text{mm.}$$

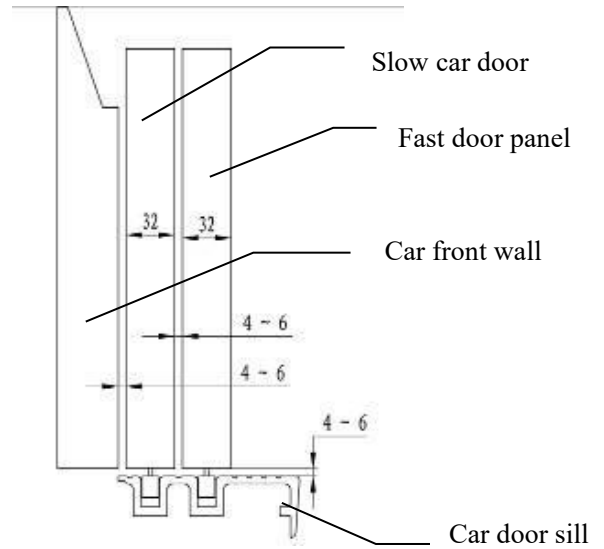


Fig. 2-12 Top view of the car door installation

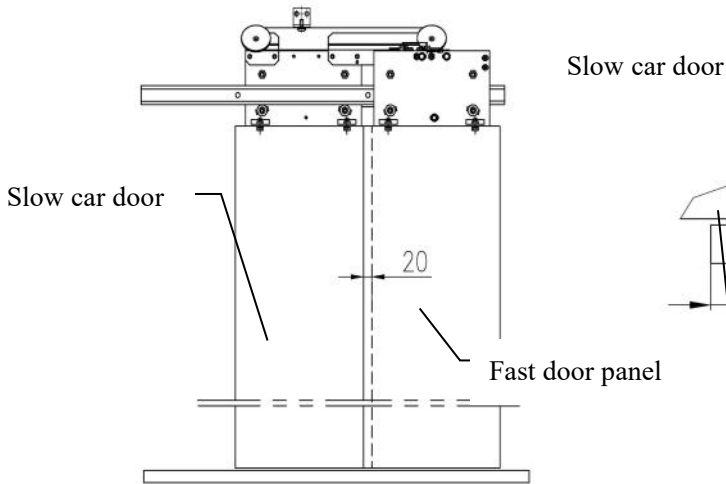


Fig. 2-11 Main view of the car door installation

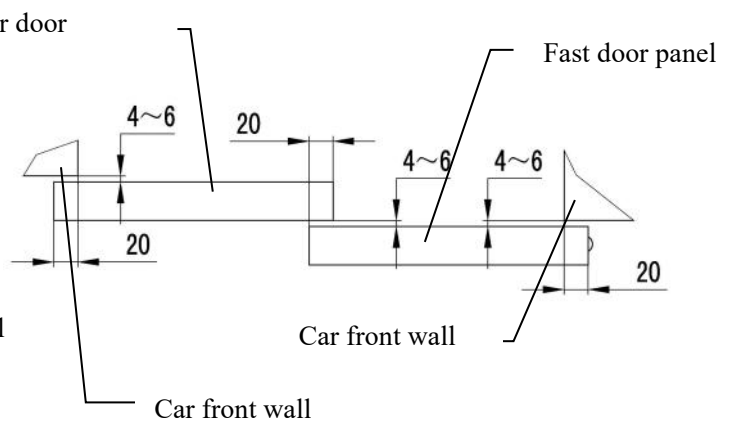


Fig. 2-12 Top view of the car door installation

5. After the completion of the adjustment, fasten all bolts, push the car door by hand to make sure the door slide freely.

6. When the car door is fully open, keep the car front wall parallel with the car door.

2.2.4 Installation and debugging of synchronous door knife

Synchronous door knife hanging plate installed on the door machine, machine head on the door knife block, see figure 2-13.2,

a. The clearance between the door vane and the sill for the landing door is 5-10mm (pay attention to the clearance between the door vane and housing of the upper sill).

b. The clenching amount between the door vane and the lock pulley of the landing door shall be 5~10mm. And at the landing position, the door lock pulley shall be in the middle of the two door vanes and the pulley shall not bump against the blades when the elevator runs.

c. The perpendicularity of the door vane shall be within 0.5mm and the space between the two blades shall be 83mm when the car door is fully closed.

d. pay attention to adjust the height of the upper and lower height of the knife blade, so as to make the door knife unlocked. .

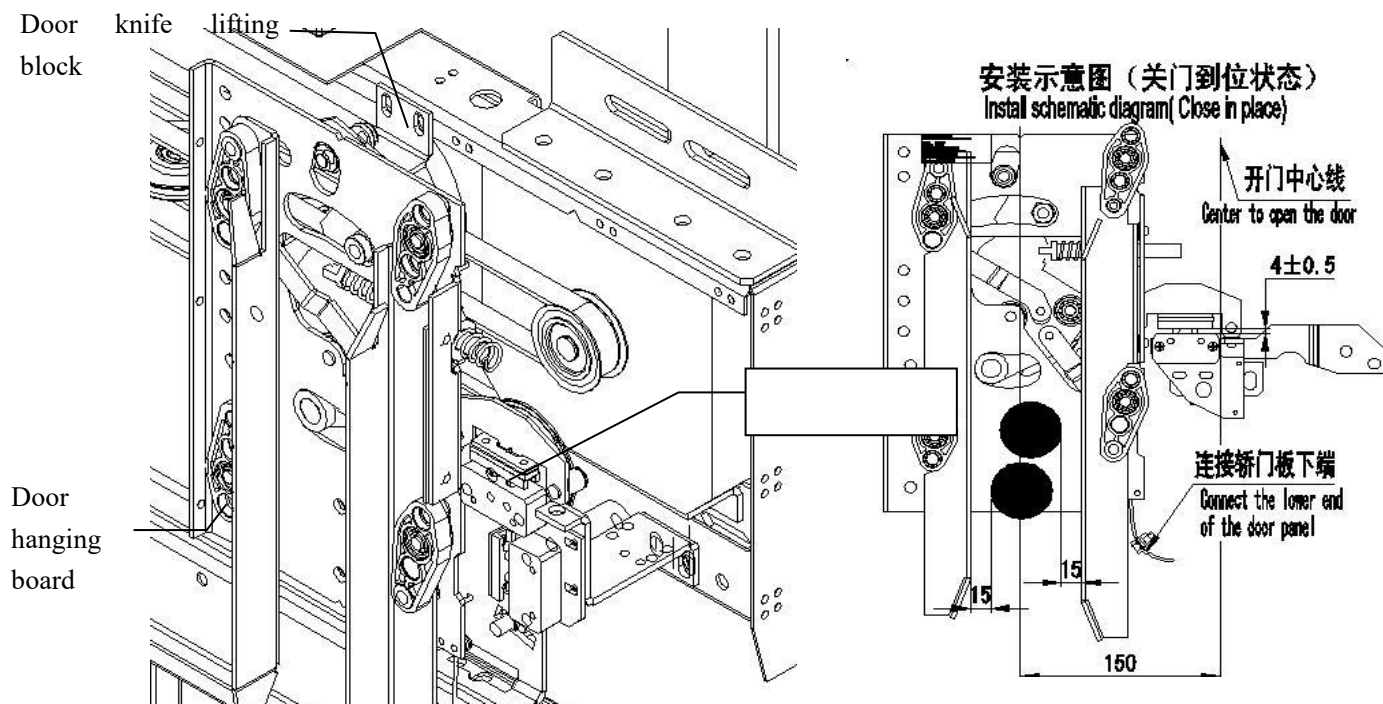


Fig. 2-13 synchronous door knife installation

2.2.5 Plate resistance adjustment

When there is too much resistance, according to the figure 2-14 hanging plate roller and the guide rail gap to 0.1 ~ 0.3mm, can make the door switch smooth.

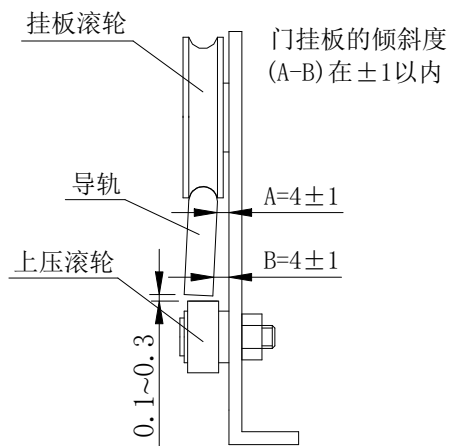


Fig. 2-14 door plate adjustment

2.2.6 The Cabling for the Door Protection

2.2.6.1 The Cabling of the Safety Shoe

Line requirements:

1 cable pull down type tie tied in the car door, and along the tank chain bracket through the tank chain, connected to the top of car safety circuit wiring box. The back pull tie tie; according to figure 2-15 safety line

2 the distance from the lower end of the safety contact plate to the lower end face of the door panel shall be greater than 10mm and the distance between the lower end of the safety contact plate and the lower end face of the door panel shall be kept at a distance of 10 - 20mm.

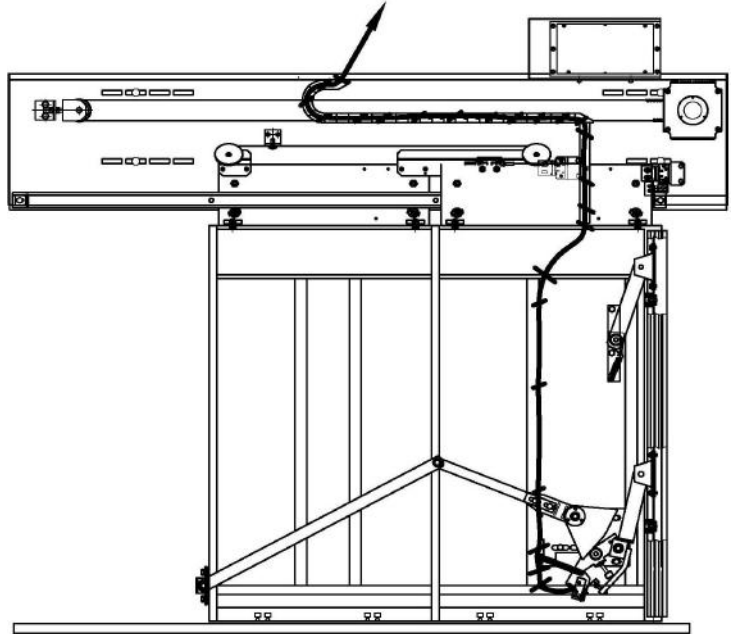


Fig. 2-14 safe touch line

2.2.6.2 The Cabling of the Light Curtain

Line requirements:

1 is installed on the car door quickly on the screen, along the cable car door and tank chain bracket, through the tank chain, received the car top terminal box, and pull down type tie fastened; installed in the car on the front wall of the screen, with a pull down type tie fixed in the car on the front wall. On top of the car and connected to the junction box. Figure 2-16 screen line

The lower end of the lower end of the fixed bracket 2 screen flush, screen fixed bracket lower end face to face the door under the distance should be greater than 10mm; two in the screen when the door is closed the distance should be kept 10 20mm; all screen assembly holes should be fixed and the door leaf.

3 screens installed must be grounded, grounding wire connected by a screw and a car door, and back to pass with the top line.

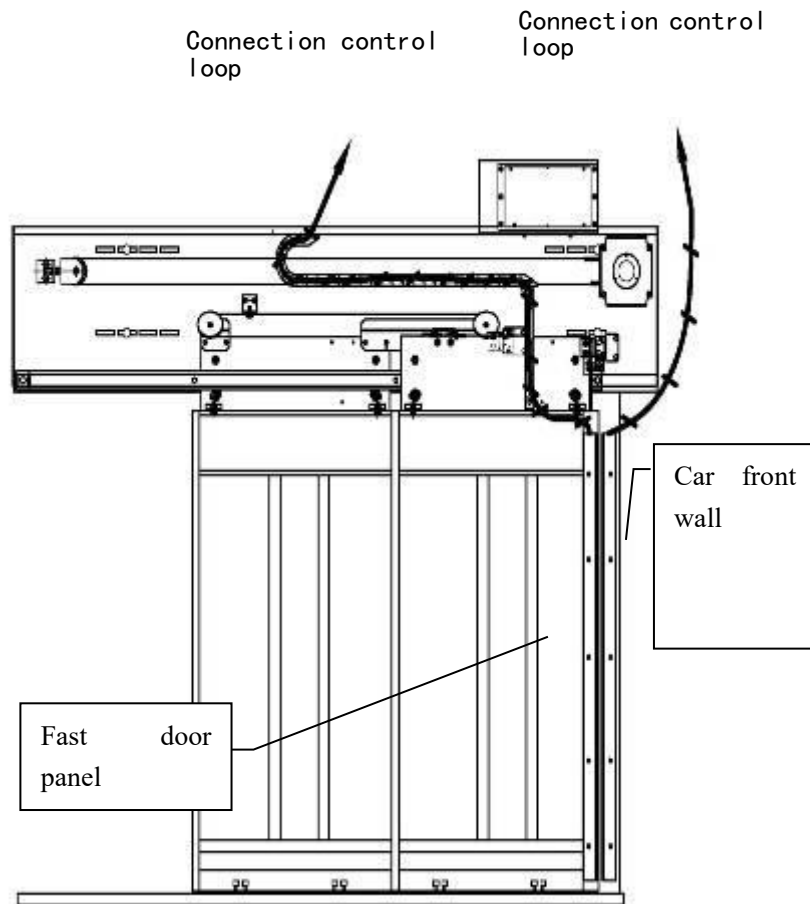


图 2-16 光幕走线

3. Care and Maintenance for the Door Operator

3.1 Periodic Care and Maintenance Items for the Door Operator

During the elevator maintenance, wipe the door guide rail and add lubricating oil to the guide rail. Meanwhile,

check the abrasion loss of pulleys in the hanging plate and adjust or replace the one whose loss is over 1.5mm.

a) Regular adjust the tightness of the synchronous belt, see Fig. 3-1 for the requirements about the tightness of the synchronous belt.

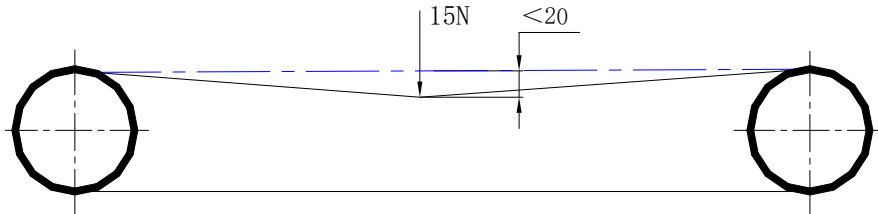


Fig. 3-1 Requirements for the tightness of the synchronous belt

Routine Care and Maintenance Items for the Door Operator

- a) Check if the door opens and closes stably and if there is any abnormal noise during the operation.
- b) Regular inspect the tightness of all fastening parts.

If any problem is detected during the above processes, please take measures immediately so as to keep the normal operation of the door operator.

Door machine spare parts

Serial number	Name	Figure No.	Number	Remarks
1	2.3N.M door motor	650103.1-11 (001)	1	Power 43W for 2.3N.M motor, power 94W for 5.0N.M motor,
	5.0N.M door motor	650103.1-11 (002)		
2	Controller component	650103.3-2(001)	1	
3	Hanging wheel	650100.5A.2(001)	4	
4	Lower guide wheel	500100.2A.5	4	
5	Contact switch plug	650103.1.16-2(001)	3	
6	Contact switch socket	650103.1.18-2(001)	3	
7	Synchronous belt	650103.1-6(--)	1	001-011 corresponds to JJ700-1200, each 50 files, such as 650103.1-6 (005) corresponding to the 900 door
8	Guard chain	650103.1-4(--)	2	JJ=700750 corresponds to 002800850 corresponding to the 00410001050 should be 00511001150 to 0061200 should be 003900950 to 007
9	Stopper	500100.6.1(001)	4	
10	Door knife assembly	650103.2(--)	1	001-011 corresponds to JJ700-1200, each 50 files, such as 650103.2 (005) corresponding to the 900 door
10	Synchronous door knife	650105.2(--)	1	With car door lock function number 001, no car door lock function number 003