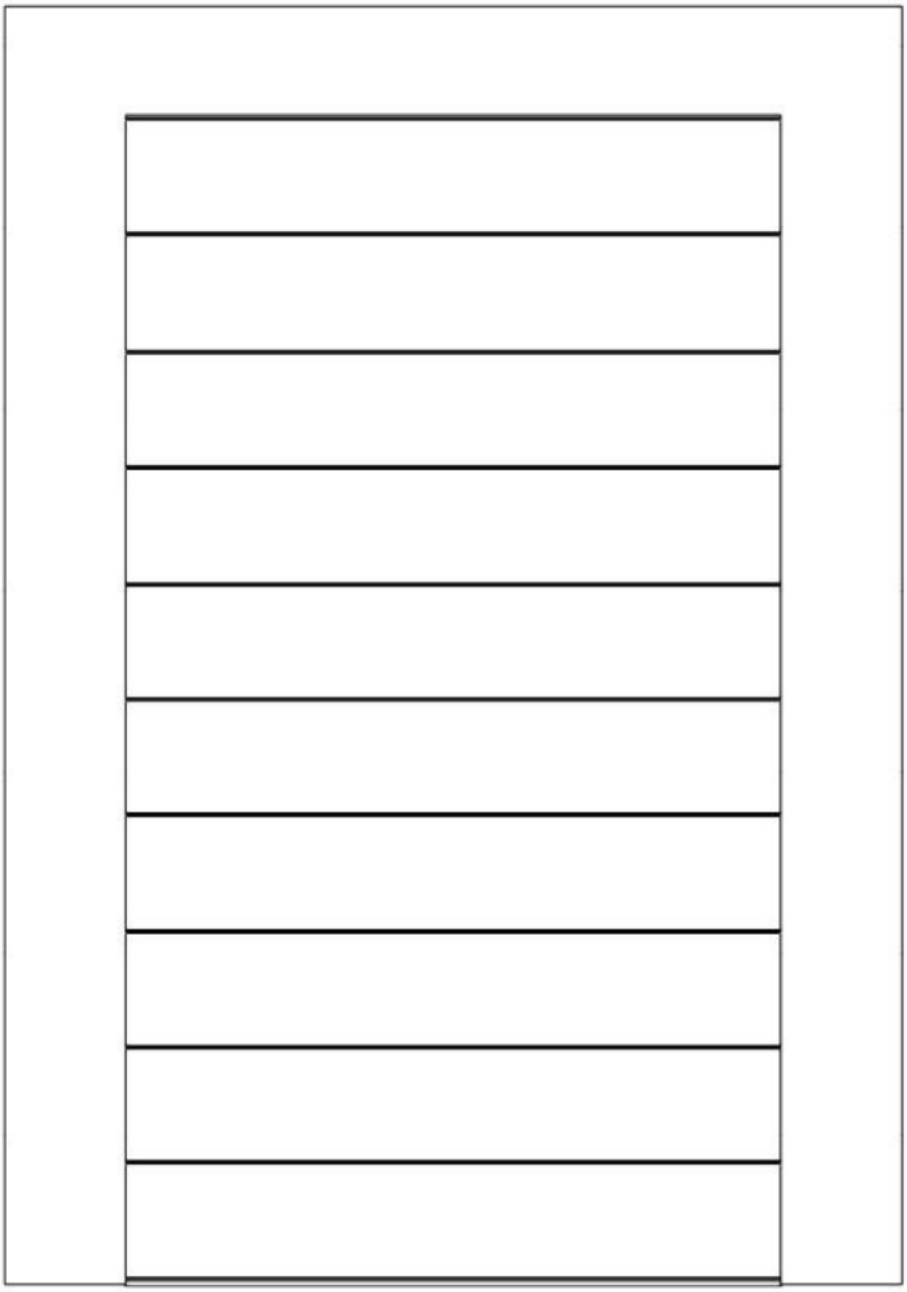
# Installation and Usage Instructions for Industrial Lift Doors



**Contents**

**-.tE tools**

spirit level


Electric drill for charging

screwdriver

Riveting gun

Electric hammer

Polishing machine


hammer

measuring tape

Vise grip pliers

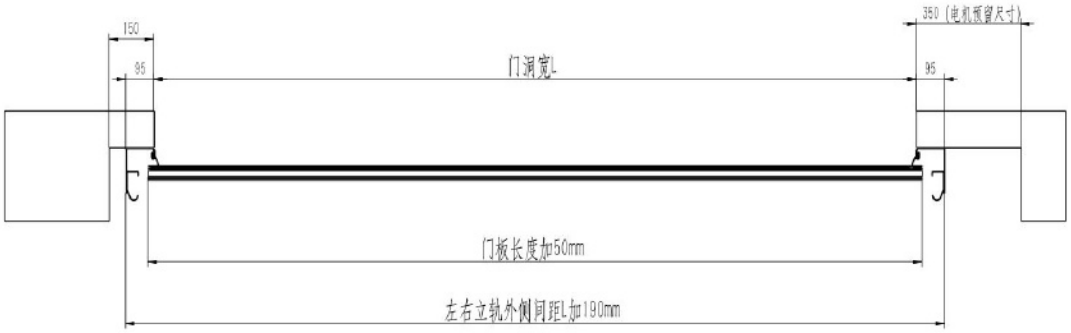
Open-end wrench

## Installation of guide rails

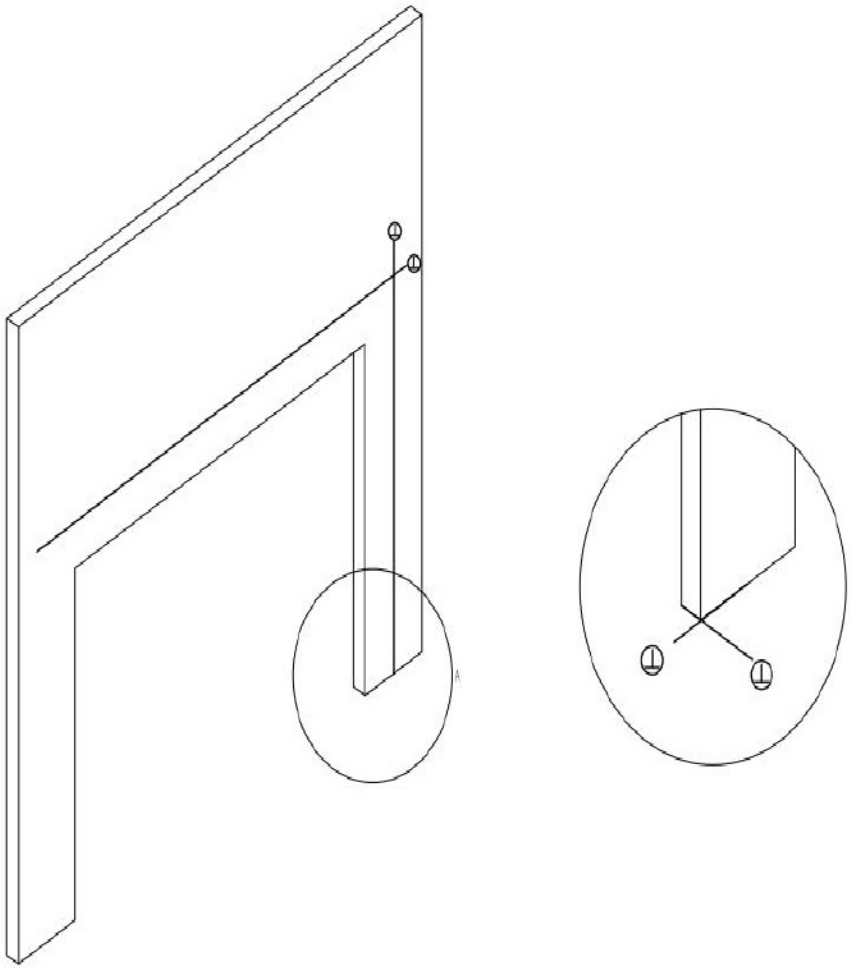
2.1 Measure whether the height and width of the door opening match the order, recheck the length of the door panel (door opening width L + 40mm), and mark the positions of the two side guard rails (see the figure).

2-inch guide rail


3-inch guide rail

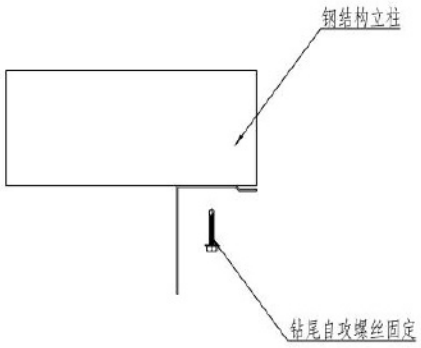


## 2.2Calibrate the vertical plane using a level (see the figure).

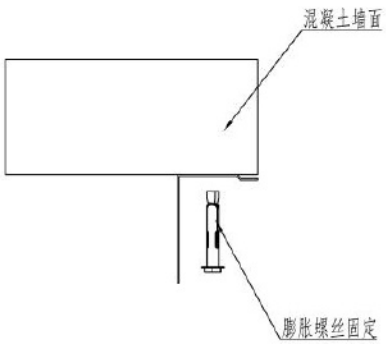


2.3 Secure and install the vertical rails, and use a level to ensure the verticality of the tracks. Fix the guard rails to the wall, using expansion screws for brick-concrete walls and self-tapping screws with drill tips for steel structures (see the figure).

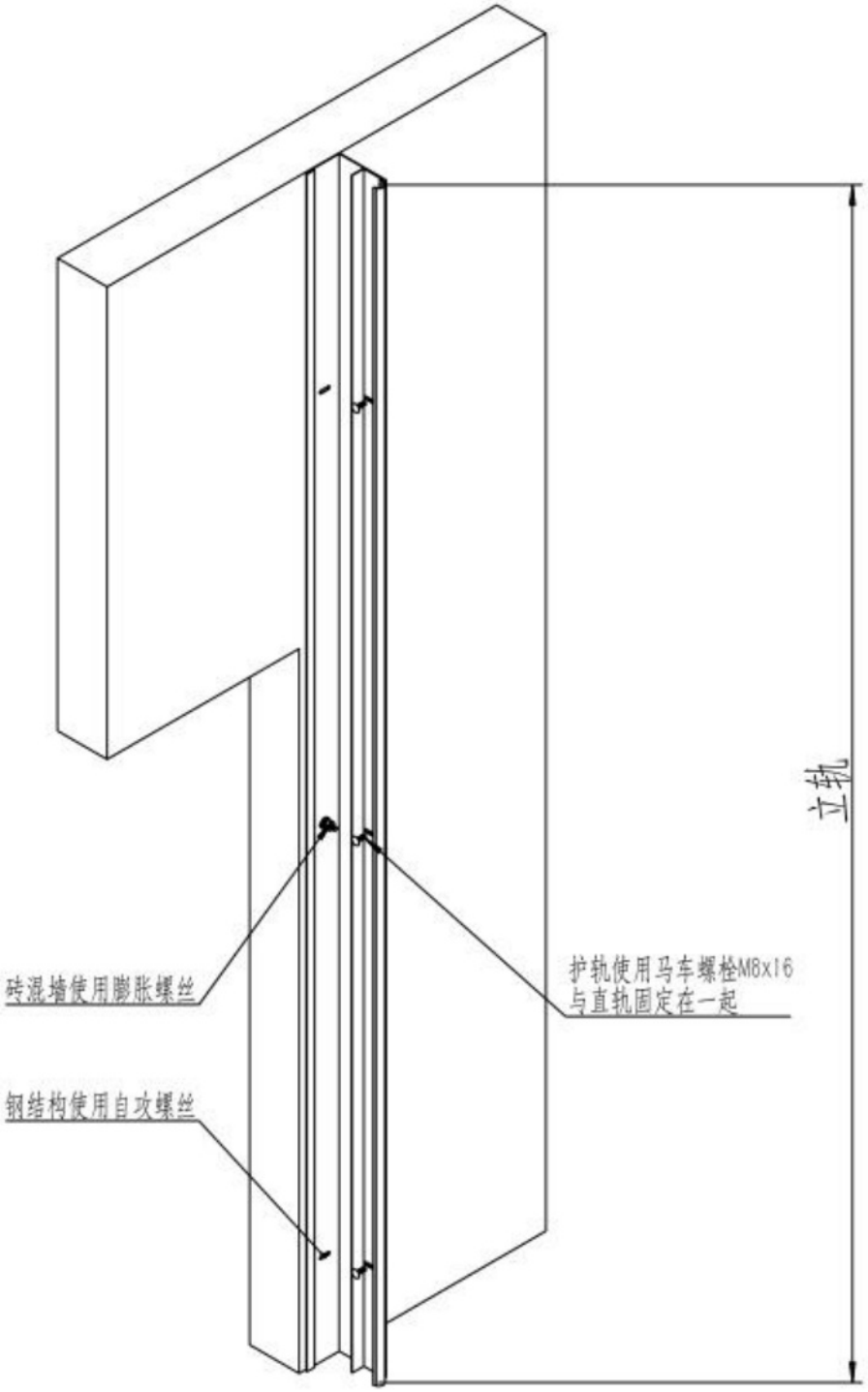
M4.8×40 自攻钻尾螺丝




M8×60 膨胀螺丝

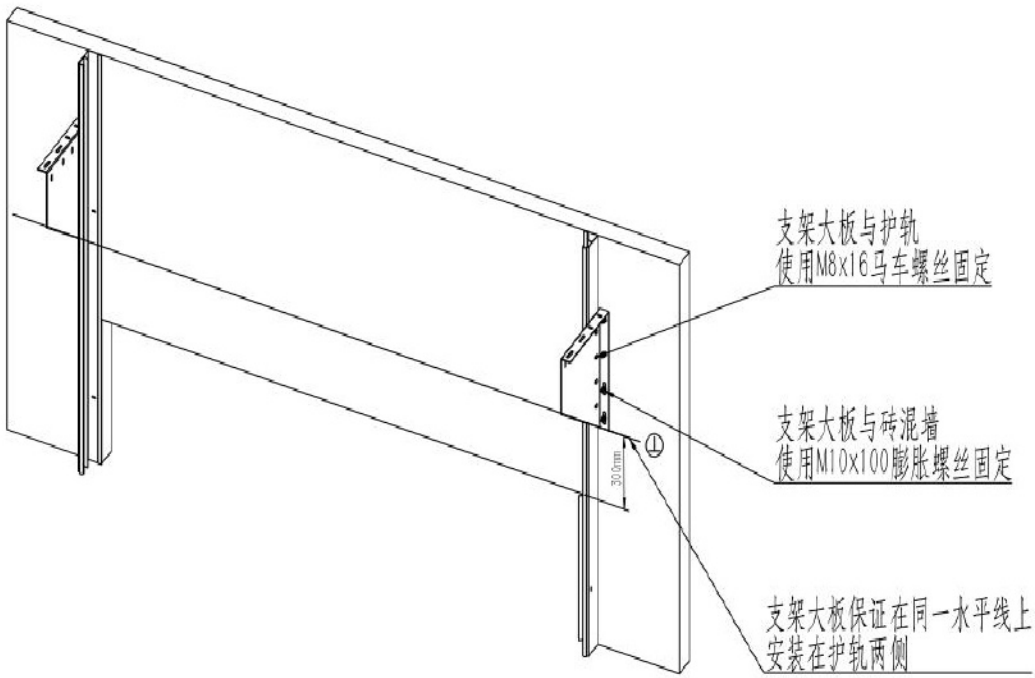



2.4 Fix the vertical lifting part's track uprights with dedicated connecting screws. The verticality of the uprights should be less than 3mm, and the distance between the left and right tracks should be ± 3mm (see the figure).


护轨
砖混墙使用膨胀螺丝
钢结构使用自攻螺丝
护轨使用马车螺栓M8x16
与直轨固定在一起

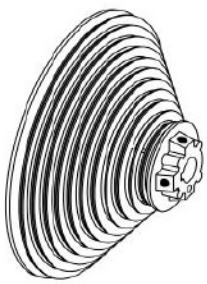
**III. Balanced System**

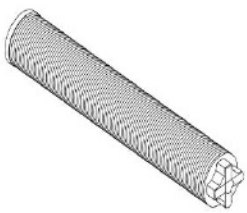
3.1 The large plates of the beam support should be kept on the same horizontal line. The installation height should be about 300mm from the bottom of the large plate to the opening. The height can be adjusted up or down according to the on-site structure.

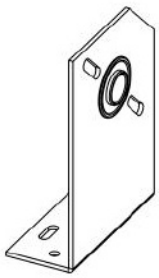



3.2 Installation of Torsion Spring

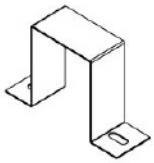
Tower wheel　　Torsion spring　　bearing bracket



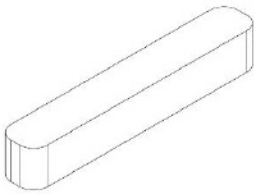


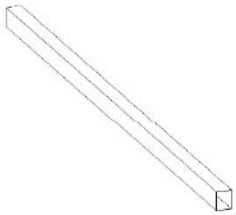


实心轴　　连轴器　　抱箍

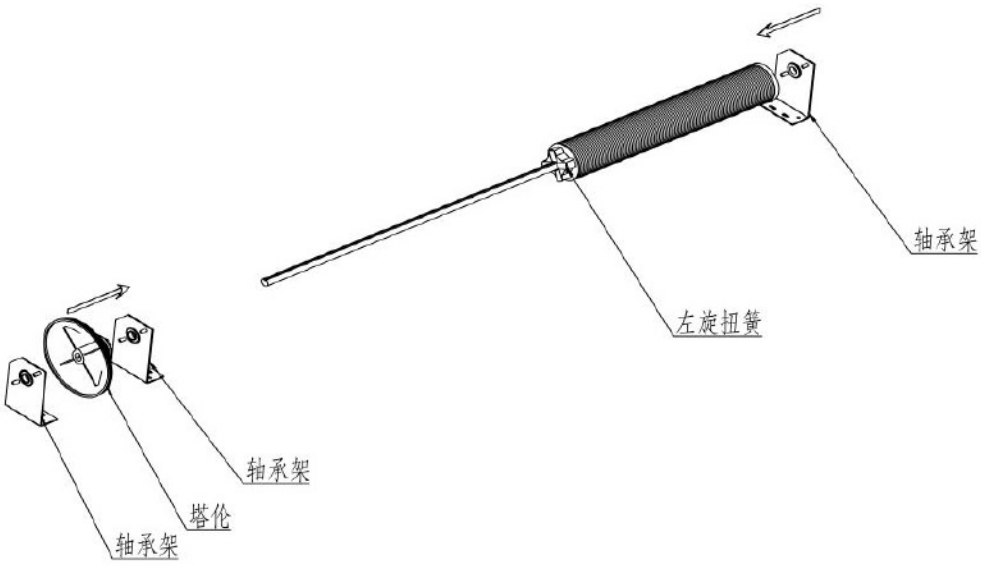


平键　　大梁管

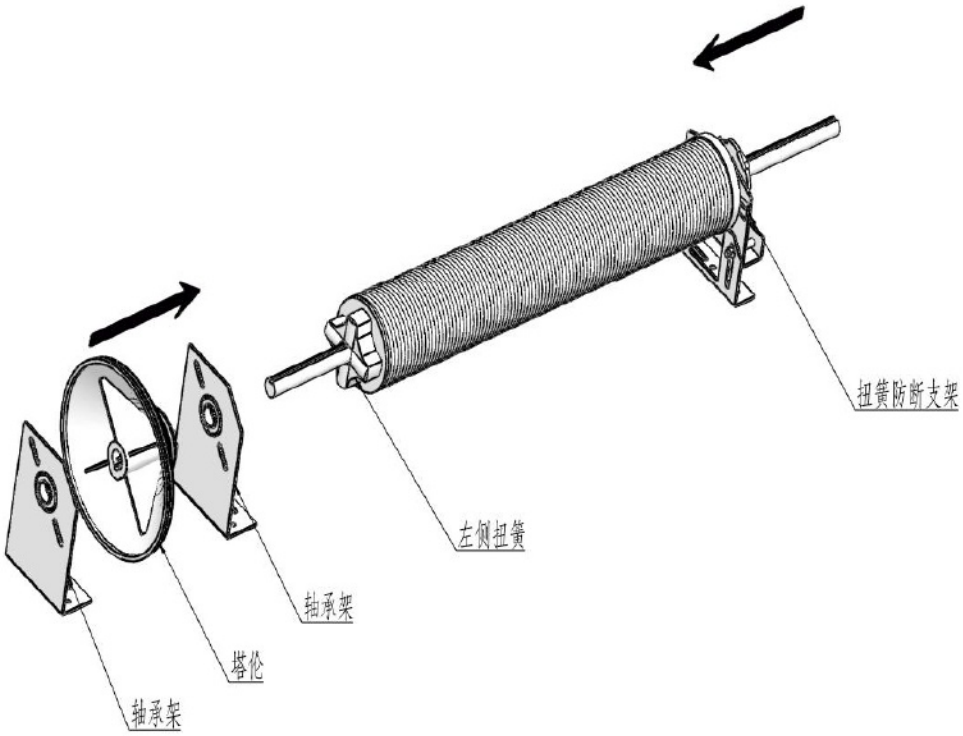


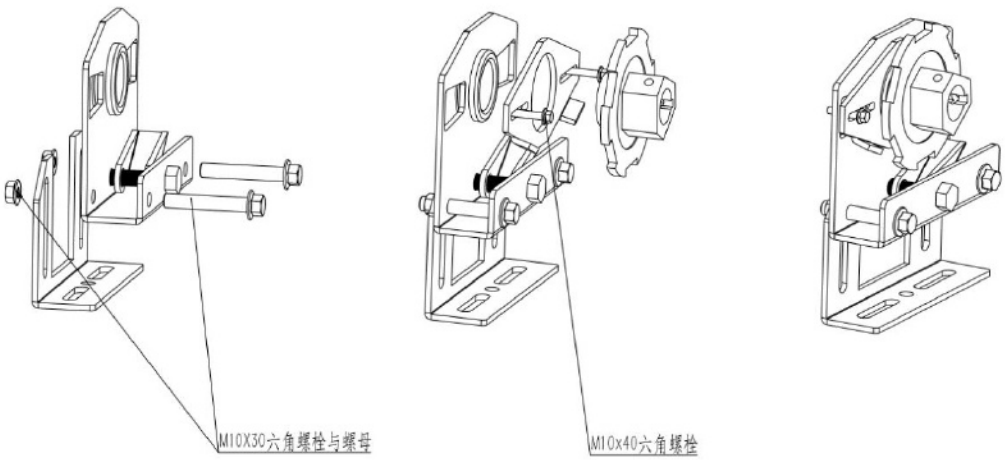


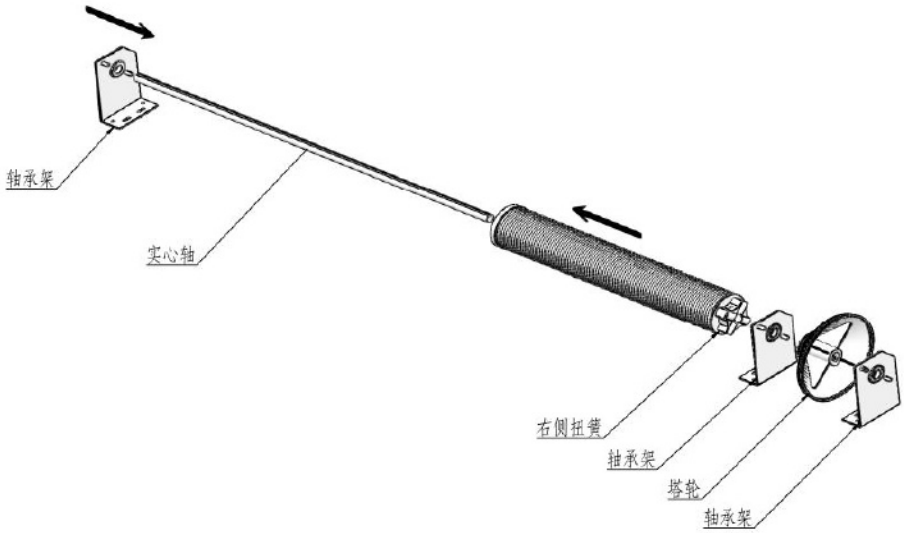
3.3 According to the number of configured shaft frame seats, install the torsion spring and the tower wheel into the shaft in the direction of the arrow using solid shafts of ф25.4 or ф31.75.



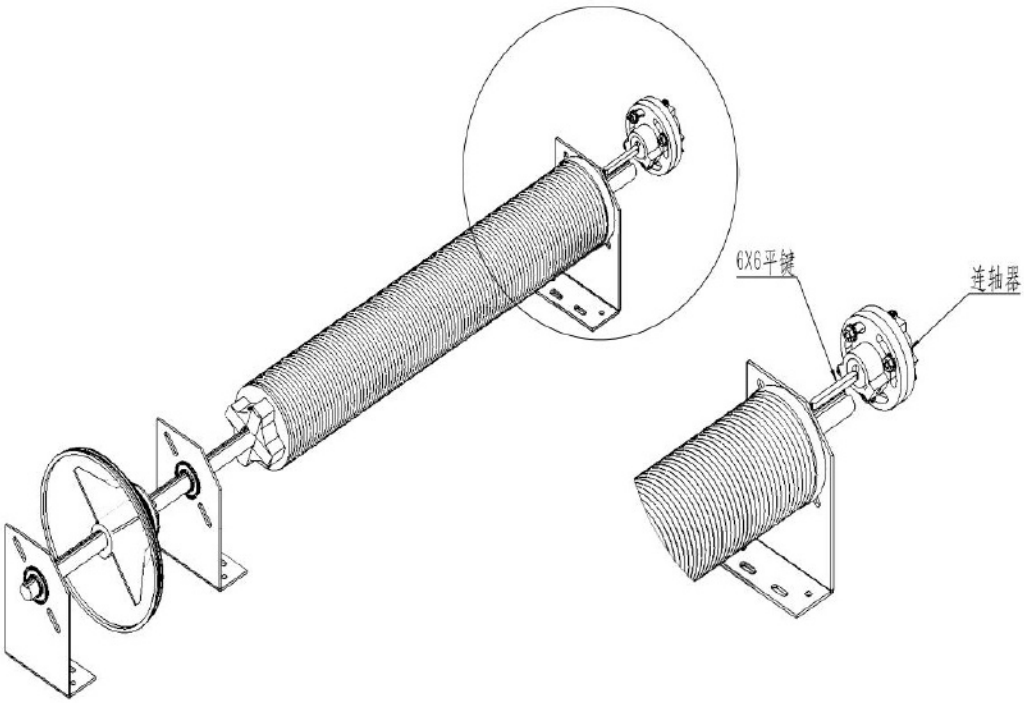
# Installation method of torsion spring anti-breakage bracket

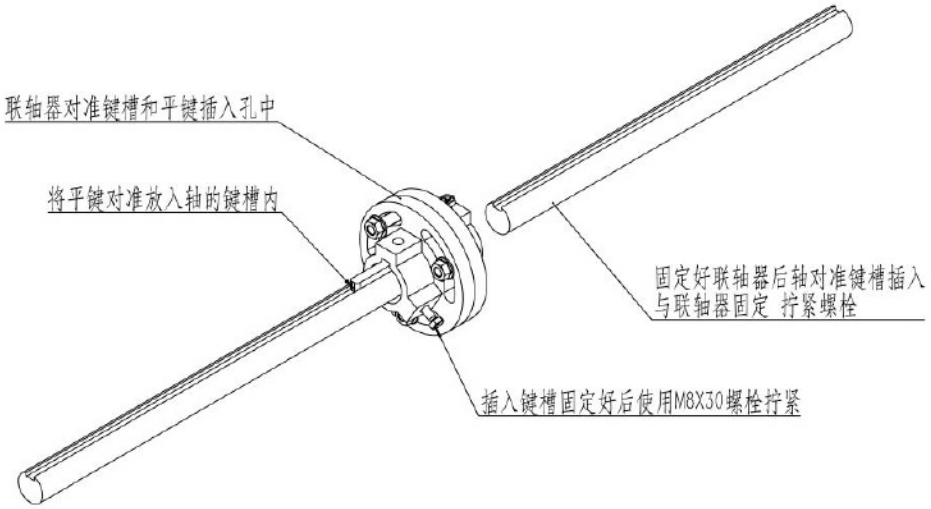


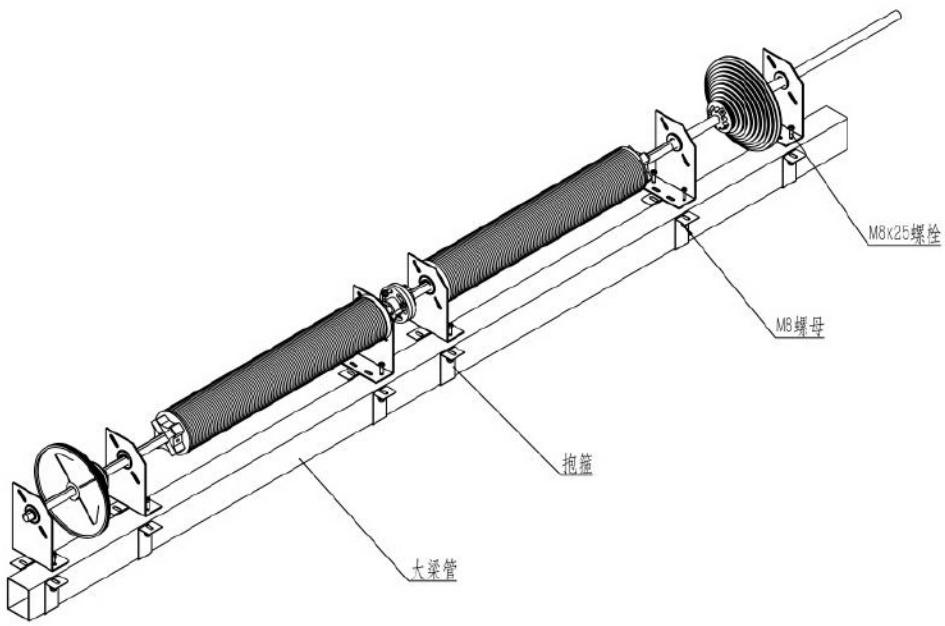



After the torsion spring tower wheel is installed, insert the 6×6 flat key into the keyway of the shaft, align the coupling with the keyway and the flat key insertion hole, and then tighten it with an M8×30 bolt.

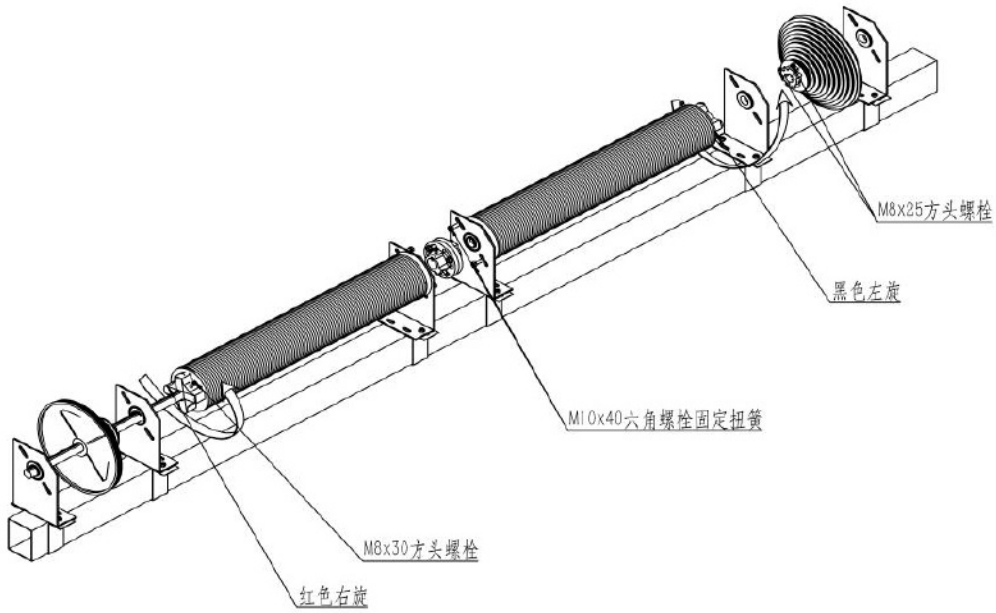




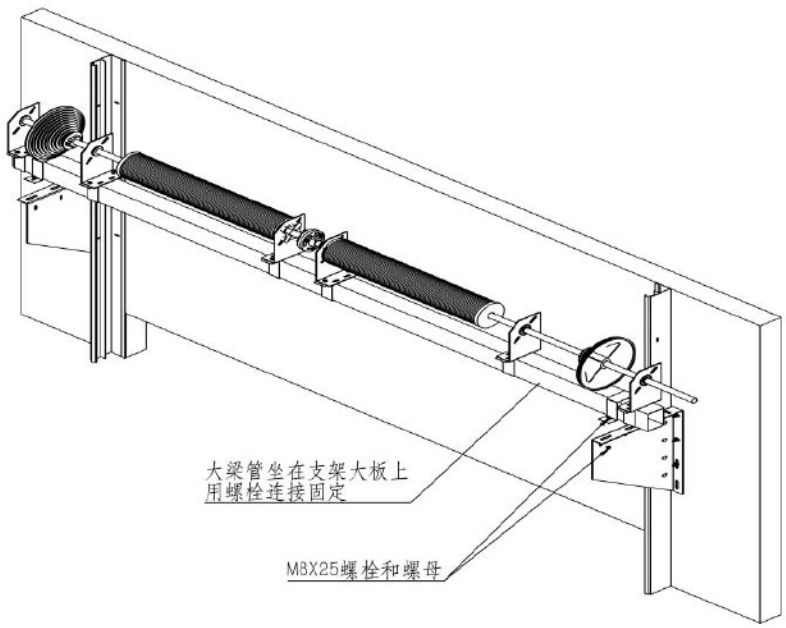

After the coupling is installed, install the assembled balancing system onto the main beam pipe and fix it tightly to the bearing frame with M8×25 bolts and clamps.



3.6 Use M8×30 bolts to connect the torsion spring with the load-bearing plate. Tighten the screws until they do not come loose. Use M8×25 bolts to fix the pulley to the shaft. Tighten the screws until they do not come loose.

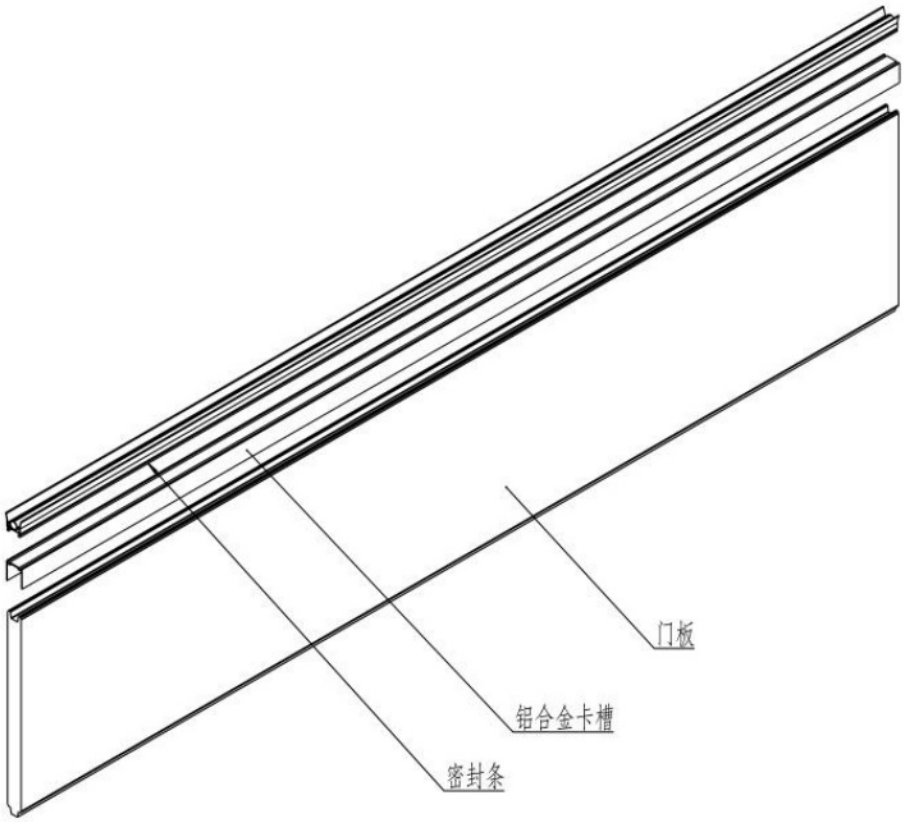



After the main beam pipe is properly connected to the balance system, place it on the large plate of the support and secure it with a clamp. Then, use M8×25 bolts and nuts to fix and tighten it.

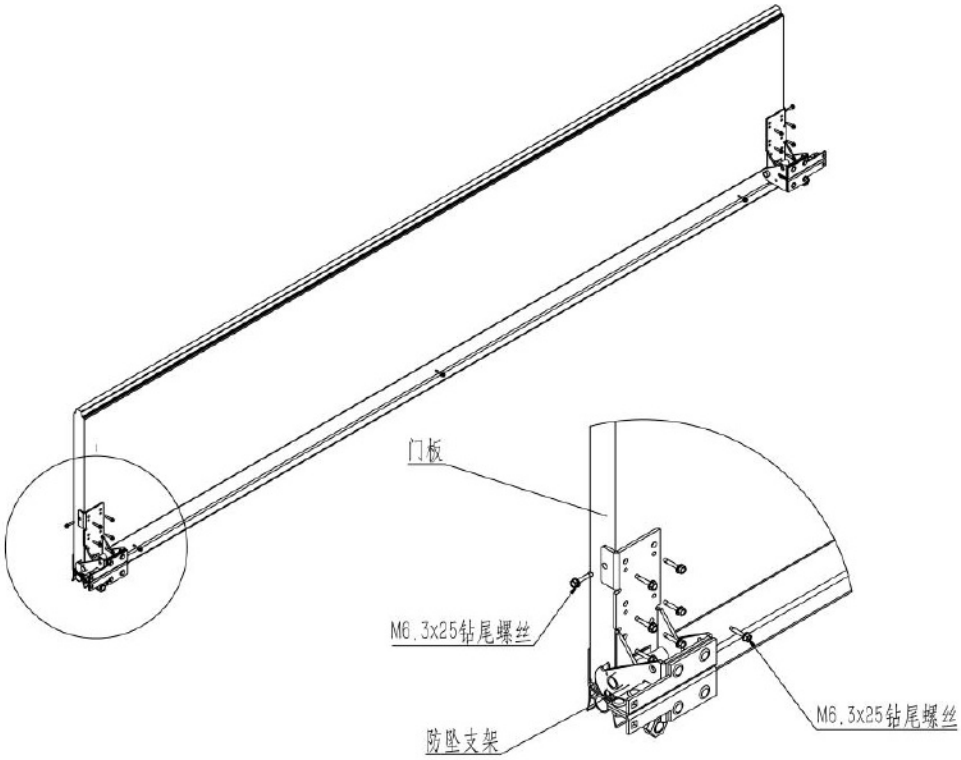


**IV. Installation of Door Panels**

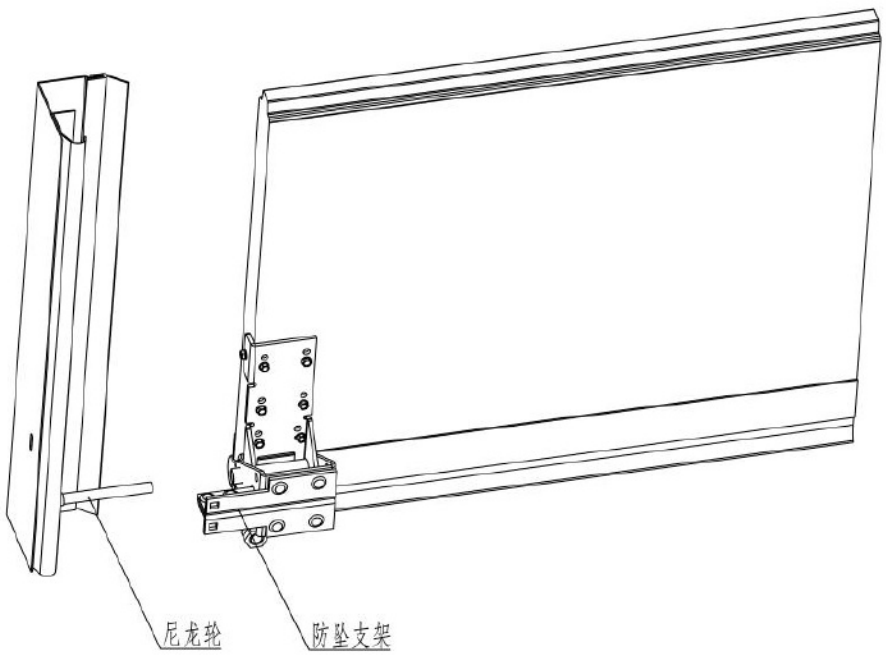
4.1 First, install the bottom door panel. Before installation, attach the aluminum alloy channel to the door panel, and then install the bottom door panel seal strip onto the aluminum alloy channel.



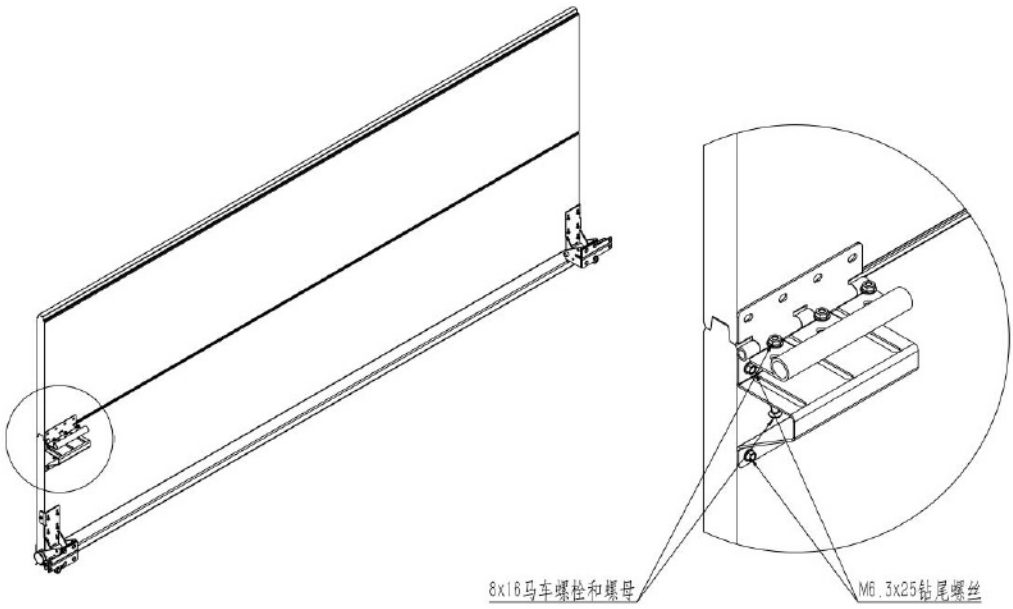

4.2 Place the door panel into the track and let it rest on the ground, ensuring that both ends of the door panel are at the same level. Install the anti-drop devices on both sides and fix the anti-drop brackets with M6.3×25 drill tail screws.



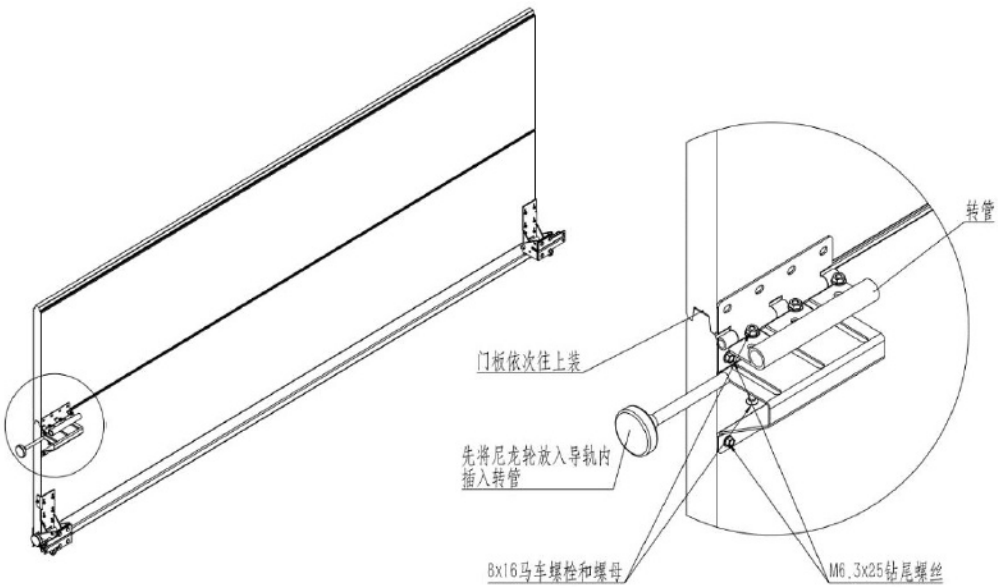

After the anti-fall bracket is fixed, insert the nylon wheels into the guide rail and then into the anti-fall bracket.



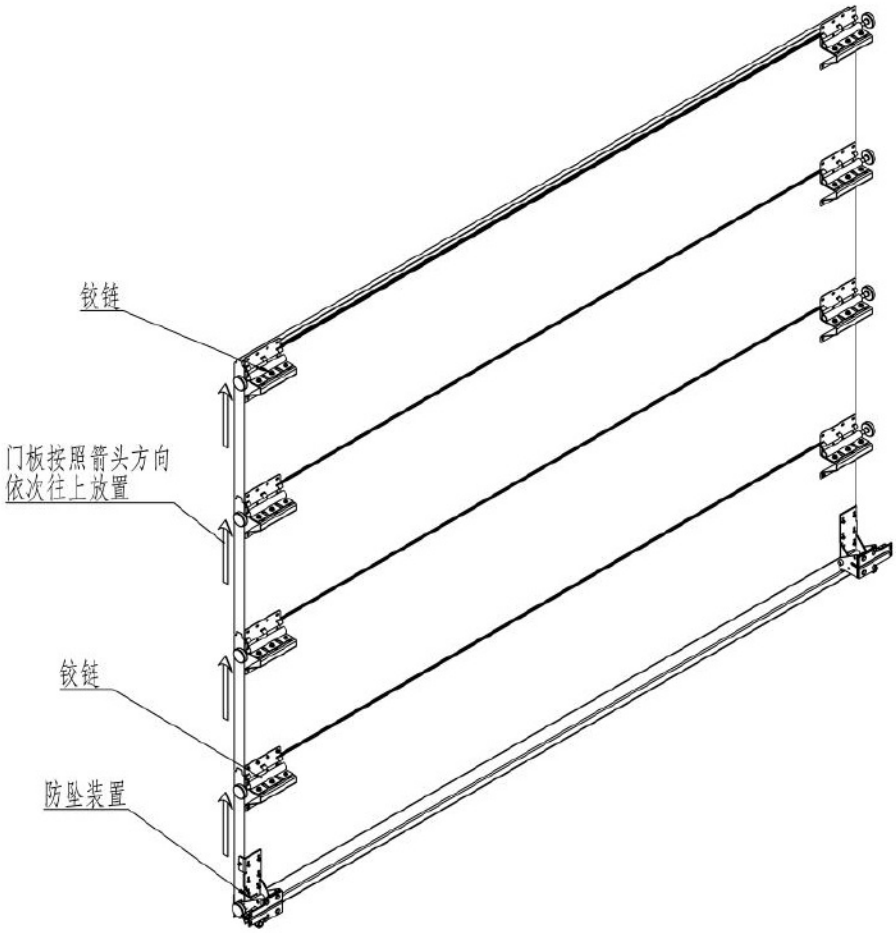
4.4 Ensure that both ends of the door panel are at the same horizontal level. Install adjustable hinges and fix them to the door panel using M6.3×25 drill tail screws.



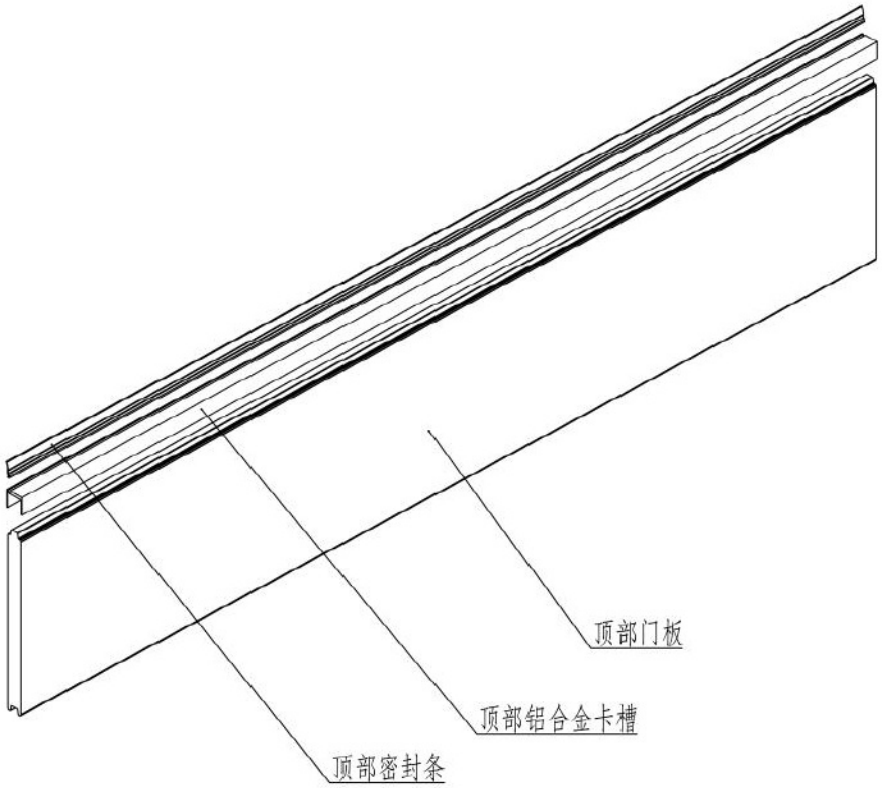

After the adjustable hinges are installed, insert the nylon wheels into the guide rail and connect them to the adjustable hinges. Secure them with 8×16 carriage bolts and nuts.



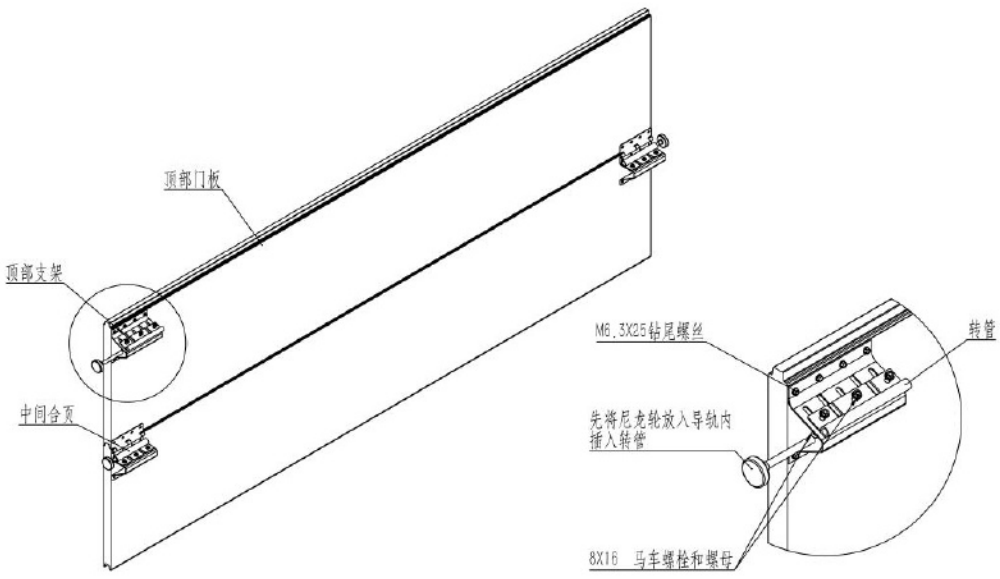
After the adjustable hinges are installed, align the second door panel at both the top and bottom ends, ensuring verticality. Install the adjustable hinges and rollers, and proceed to install each subsequent door panel from bottom to top until the last one is in place.



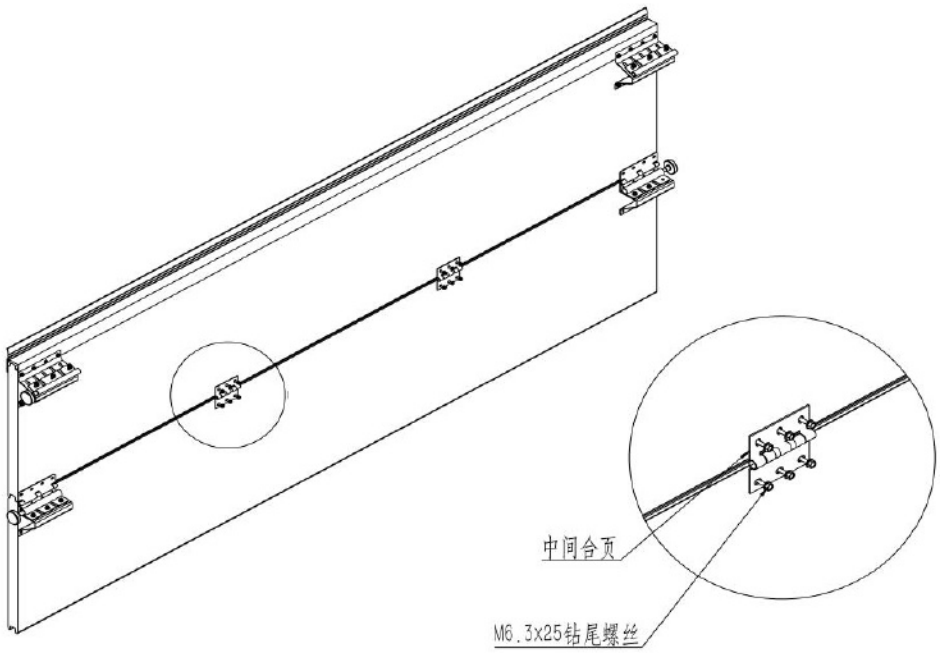

4.7 Installation of the last door panel: First, install the aluminum alloy channel on the top door panel, and then install the top sealing strip onto the aluminum alloy channel.




After the sealing strip is installed, install the top bracket on the door panel, ensuring that the top and bottom ends are aligned and the verticality is maintained. Then place the nylon wheels in the guide rail and connect them to the hinges.

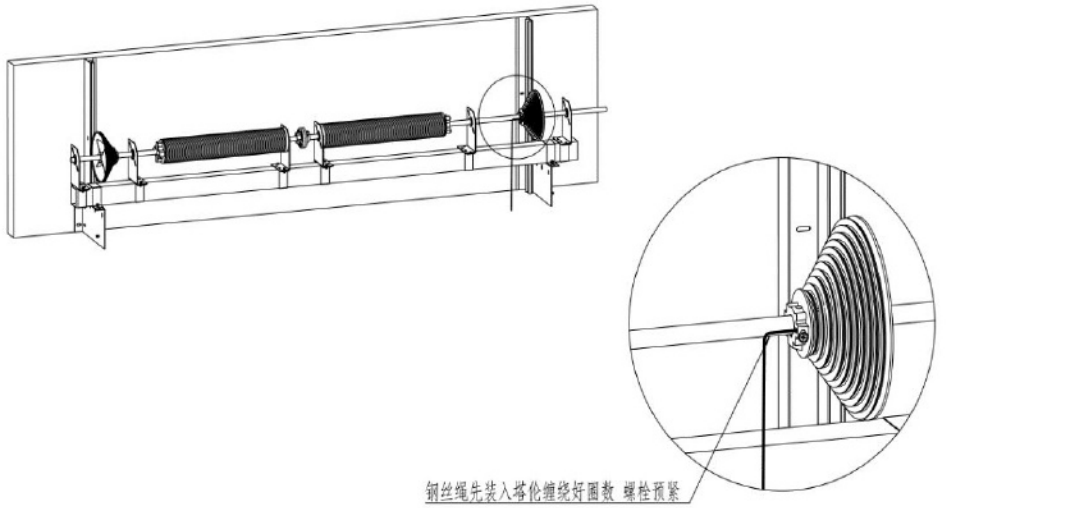


4.9 According to the equal division requirements, measure the position of the middle hinge accurately and ensure that the upper and lower hinges are on the same vertical line. Fix them with M6.3×25 drill tail screws to complete the hinge installation. Note: The axes of the edge hinges and the middle hinge must be on the same vertical line.

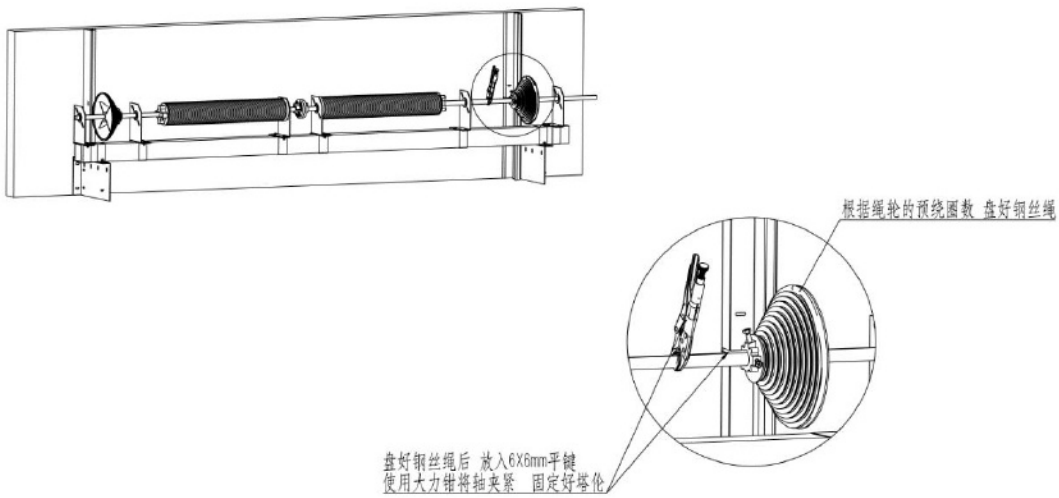



**V. Fixing the Steel Wire Rope**

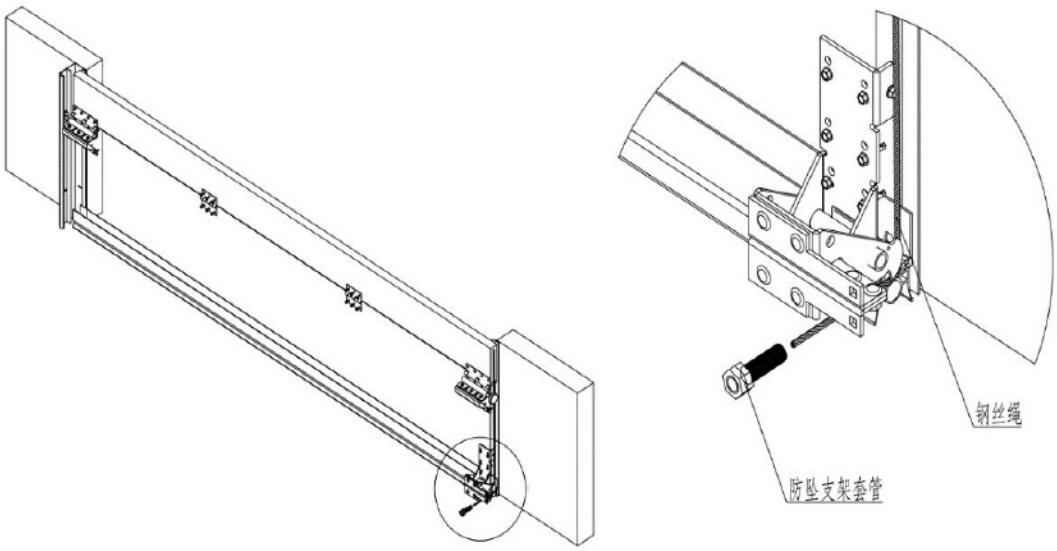
5.1 According to the label design instructions: First, load the steel wire rope into the tower wheel and secure it with a lock.




5.2 According to the number of pre-wound turns of the steel wire rope on the rope wheel, coil up the steel wire rope. Insert a 6x6mm flat key at the starting point of the steel wire against the side of the guard plate. Tighten the locking screw to fix the rope wheel and ensure that the tightness of the steel wire ropes on both sides is consistent.

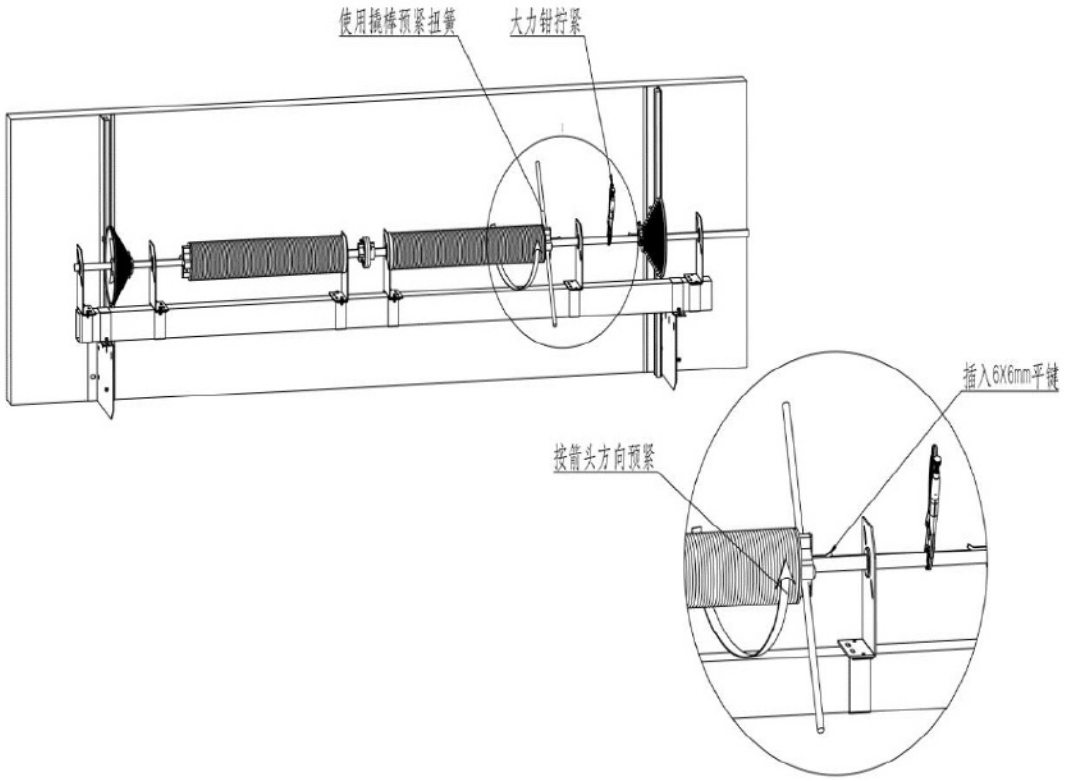


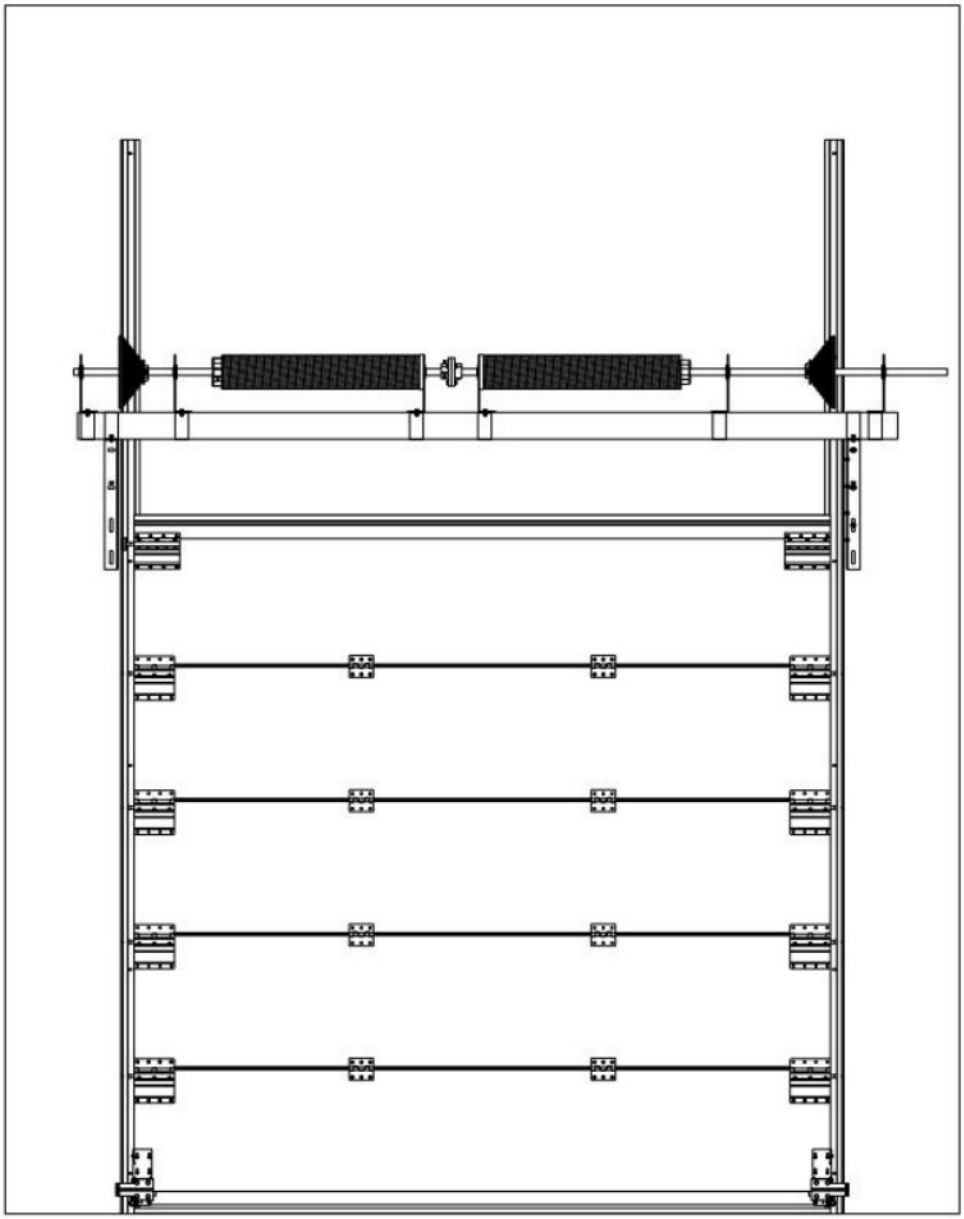

After the rope pulley is securely fixed, the steel wire rope is threaded through the anti-fall bracket sleeve and then the anti-fall bracket is fastened with a lock.




**VI. Spring Preload Force**

6.1 Use a vise to firmly hold the shaft in place to keep the wire rope taut and prevent the shaft from rotating when the spring is tightened. The spring should be pre-tensioned according to the design number of turns indicated on the label. Once the pre-tensioning is complete, insert a 6X6mm flat key, lock the fixing screws, and then release the vise. The pre-tensioning of the spring is now finished.


使用撬棒预紧扭簧
大力钳拧紧
插入6X6mm平键
按箭头方向预紧



## VII. Check the balance of the lift door body

If the door can be easily lifted manually and does not slide down automatically when stationary, it indicates that the balance system is installed properly. If it slides down automatically, the spring needs to be adjusted.

If the preload force is too small, or conversely, if the automatic preload force is too large, make fine adjustments to the spring preload force as necessary, then ensure the balance of the door body and check that the steel wire rope does not rub against or interfere with any obstacles within the working area, which could cause wear on the steel wire rope.

## VIII. Electrical Control Installation and Commissioning

8.1. The door opener should be firmly fixed without any looseness. The wiring must be carried out in accordance with the building construction standards and electrical standards. The conduit should be securely and vertically fixed to the wall. The control box should be installed on the wall at a height of 1400mm from the ground where the operation of the door can be observed.

8.2. According to the working voltage of the door opener (220-380V), connect the power supply and conduct the limit position adjustment (the limit positions are divided into electronic and mechanical types) to achieve the optimal opening and closing positions. The adjustment is completed.

8.3. Self-inspection: Check whether the upper and lower limit positions of the door body operation are accurately in place. Ensure that the slide track is unobstructed and free from jamming. Inspect whether the safety airbag or infrared protection device is in good condition.

## IX. Daily Maintenance and General Troubleshooting

9.1 Regularly check whether the opening and closing positions of the door opener have shifted to ensure the limit switches are accurate and reliable. Check the tightness of the steel wire rope to ensure the door body is balanced well. Regularly inspect the condition of the airbag switch and replace the battery if necessary.

9.2 Regularly lubricate all operating components, such as the working surface of the spring track, the bearings of the shaft frame and pulley, the manual device, and the conveyor chain, etc., to maintain the best operating condition of the door. Professional maintenance personnel should be called in for inspection and repair when necessary.

**9.3 Common faults**

| Fault description | Possible reasons | Elimination method |
|---|---|---|
| The power indicator LED on the control box is flashing, but the motor is not working. | Power supply phase loss and phase sequence mismatch | Check the three-phase 380V and adjust the phase sequence. |
| The door closing indicator light keeps flashing and the door cannot be opened or closed electrically. | Due to the protective switch inside the manual mechanism not resetting automatically | Pull the manual chain up and down gently until the door-closed indicator light goes out. |
| The door has been closed properly and the door-closed indicator light remains on. | The door closing limit switch is excessively forward. | Re-adjust the door closing limit switch. |
| Motor locked rotor | The torsion spring's torque is insufficient, and the power supply is loose with a missing phase. | Adjust the spring tension and check the circuit. |
| Do not handle unknown situations on your own. Please call professional maintenance personnel. | | |