Barrier Gate

User Manual

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Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
Danger	Indicates a hazardous situation which, if not avoided, will or could result in death or serious injury.
Caution	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
Note	Provides additional information to emphasize or supplement important points of the main text.

Contents

Chapter 1 Introduction **1**
1.1 Product Introduction 1
1.2 Packing List 1
1.3 Barrier Gate Overview 2
1.4 Machine Core Structure 3
1.5 Boom Pole Overview 4
1.5.1 Octagonal Straight Boom Pole 4
1.5.2 Boom Pole with Strip Light 5
1.5.3 Anti-collision Cylinder Boom Pole 6
1.5.4 Octagonal Telescopic Boom Pole 7
1.5.5 Fence Boom Pole 7
1.5.6 Folding Boom Pole 8
Chapter 2 Installation **9**
2.1 Installation Environment 9
2.2 Install Barrier Gate Host 9
2.3 Install Boom Pole 11
2.3.1 Install Octagonal Straight Boom Pole 11
2.3.2 Install Boom Pole with Strip Light 13
2.3.3 Install Anti-collision Cylinder Boom Pole 16
2.3.4 Install Octagonal Telescopic Boom Pole 18
2.3.5 Install Fence Boom Pole 20
2.3.6 Install Folding Boom Pole 24
2.4 Wiring 30
2.4.1 Connect to Power Supply 30
2.4.2 Connect to Supercapacitor Board 31
2.4.3 Connect to Access ANPR Camera 32
2.4.4 Connect to Traffic Signal Light 33
2.4.5 Connect to Anti-fall Radar 34
2.4.6 Connect to Vehicle Detector 38

2.4.7 Connect to Active Infrared Intrusion Detector 40
2.4.8 Connect to Arrow Indicator 41
2.4.9 Connect to Strip Light 42
2.4.10 Connect to Warning Light 43
Chapter 3 Parameters Configuration **45**
3.1 Remote Control 45
3.2 Set Parameters via Control Board Buttons 45
3.2.1 Button Description 45
3.2.2 Operation Procedure 46
Chapter 4 Maintenance **58**
4.1 Adjust Boom Pole Balance 58
4.2 Change Boom Pole 58
4.3 Change Spindle Rod and Spring 59
4.3.1 Spring and Spindle Rod Specifications 59
4.3.2 Change Spindle Rod 60
4.3.3 Change Spring 62
4.4 Change Machine Core 63
4.5 Left/Right Direction of Boom Pole 64
4.6 Change Left/Right Direction of Machine Core 67
A. FAQ **70**

Chapter 1 Introduction

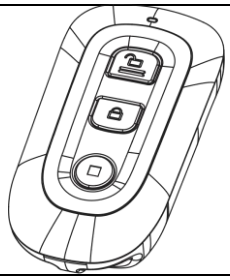
1.1 Product Introduction

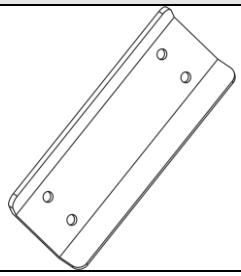
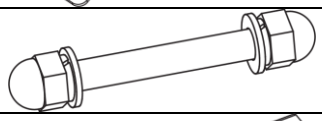
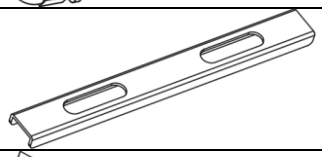
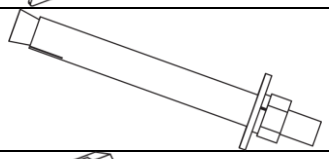
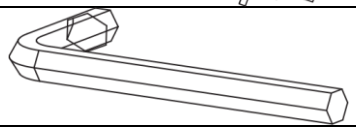
Barrier gate (hereinafter referred to as “device”) is the entrance and exit management device to limit motor vehicle passing. It can control the boom pole automatically via parking lot management system. Or you can control the boom pole via buttons on remote controller. Barrier gate is widely applicable to toll station, parking lot, the entrance and exit of community and unit, etc.

1.2 Packing List

Please check if there is any damage of the package first. Refer to the table below for the packing list of the barrier gate. According to the packing list, make sure no item is lost. After checking all the items are included, you can continue to install the device.

Table 1-1 Packing List

No.	Diagram	Name	Quantity
1		Barrier gate host	1
2		Remote controller	2

No.	Diagram	Name	Quantity
3		Chuck	1
4		Spindle rod screw set	4
5		Layer	2
6		Expansion screw	4
7		L-type wrench	1

1.3 Barrier Gate Overview

Note

The appearances of the devices vary with different models. The figure below just takes an example. Refer to the actual device for details.

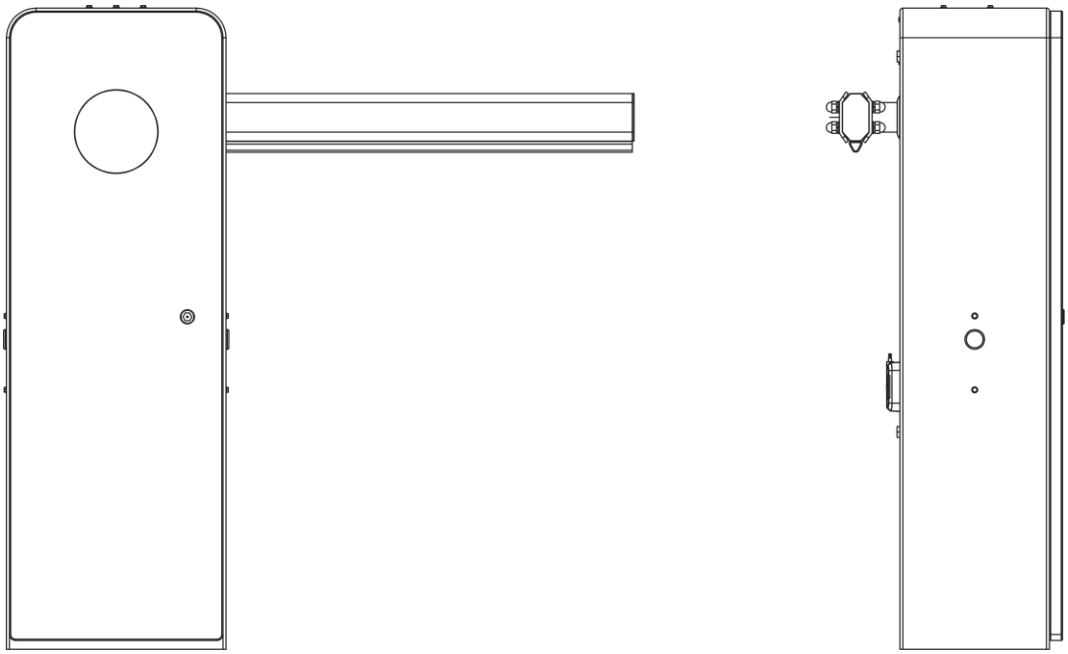


Figure 1-1 Barrier Gate Overview

1.4 Machine Core Structure

After you open the front cover, you can see the machine core of the device host.

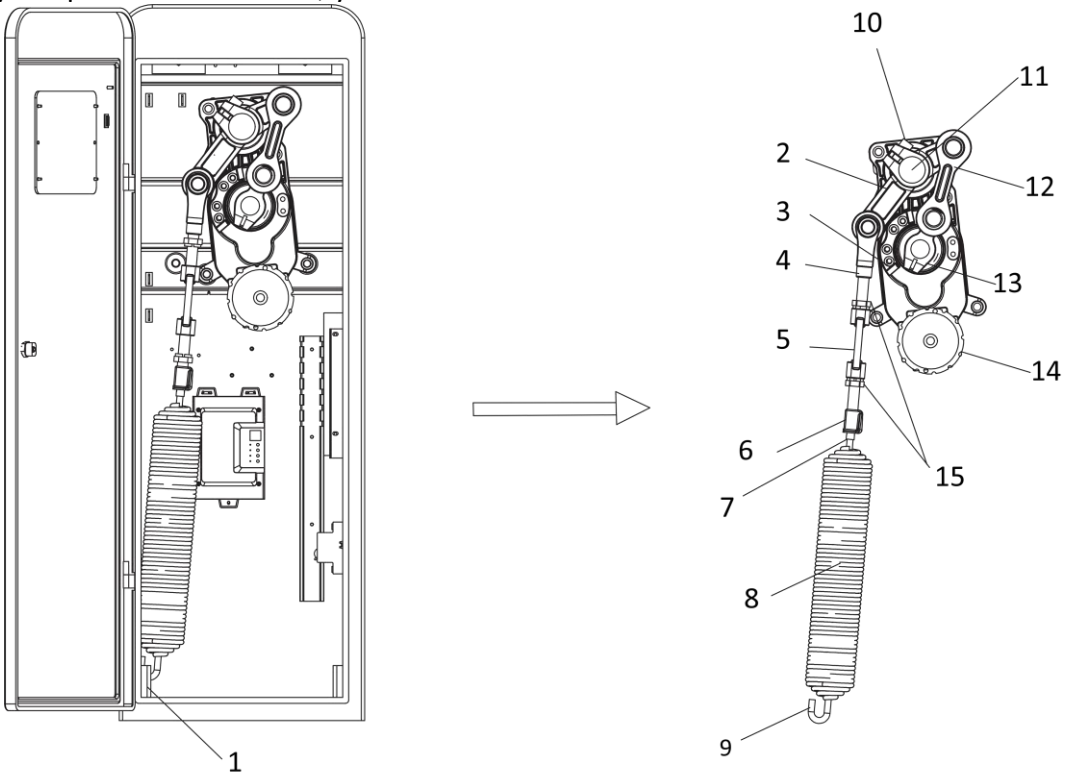


Figure 1-2 Machine Core Structure

Table 1-2 Machine Core Component Description

No.	Description	No.	Description
1	Spring hook hole	9	Spring hook
2	Rocker	10	Cap screw to tighten the output shaft
3	Machine core limited block	11	Output shaft
4	Spring upper pull rod	12	Linkage arm
5	Spring extension nut	13	Crank arm
6	Spring lower pull rod	14	Hand wheel
7	Spring pull rod	15	Lock nuts and spring washers to tighten the spring upper and lower pull rods
8	Spring		

1.5 Boom Pole Overview

1.5.1 Octagonal Straight Boom Pole

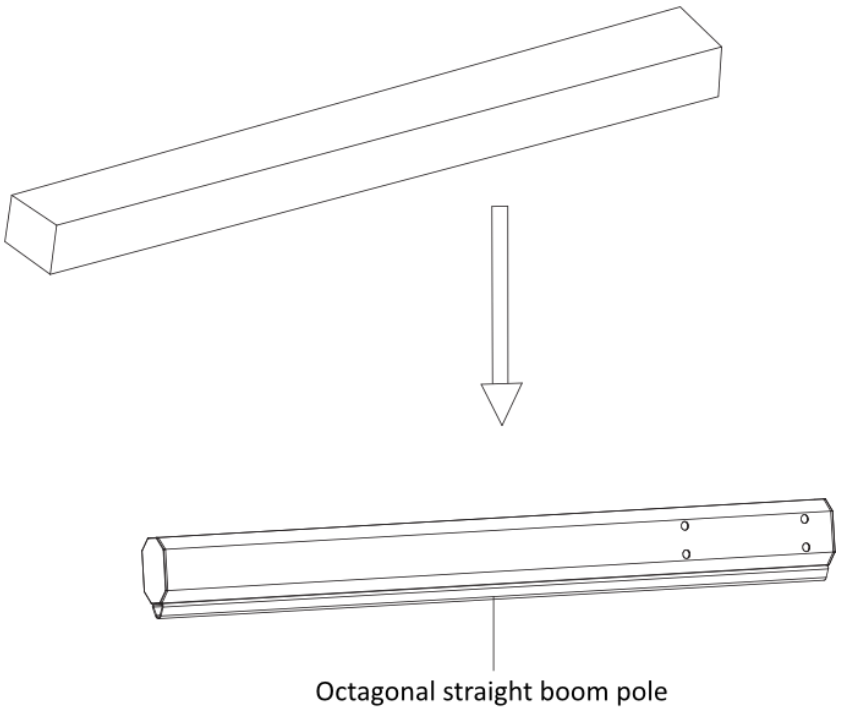


Figure 1-3 Octagonal Straight Boom Pole

Table 1-3 Octagonal Straight Boom Pole Packing List

Item	Quantity
Octagonal Straight boom pole	1

1.5.2 Boom Pole with Strip Light

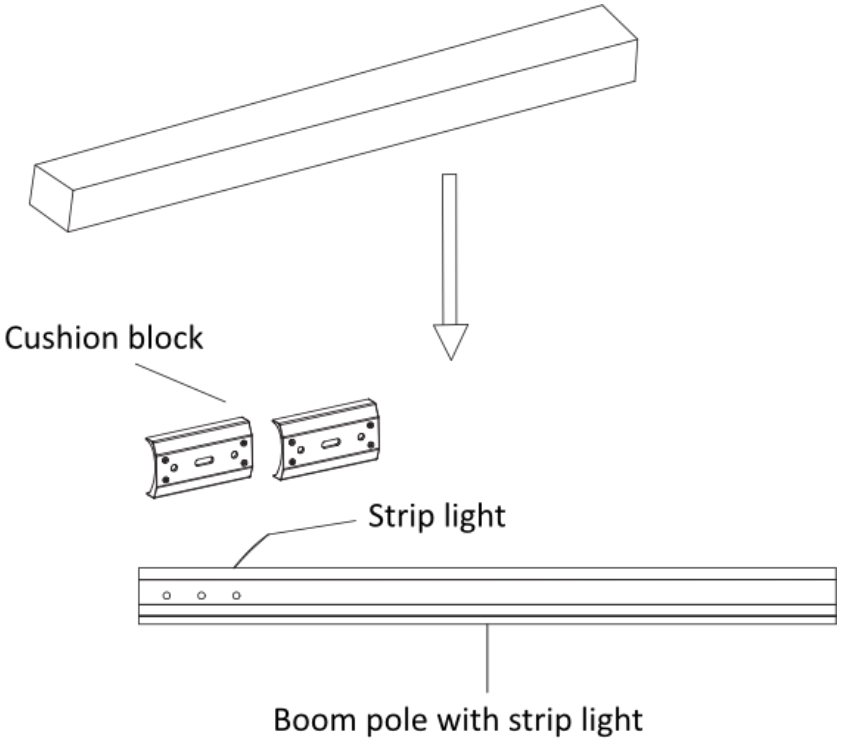


Figure 1-4 Boom Pole with Strip Light

Table 1-4 Boom Pole with Strip Light Packing List

Item	Quantity
Boom pole with strip light	1
Cushion block	2

1.5.3 Anti-collision Cylinder Boom Pole

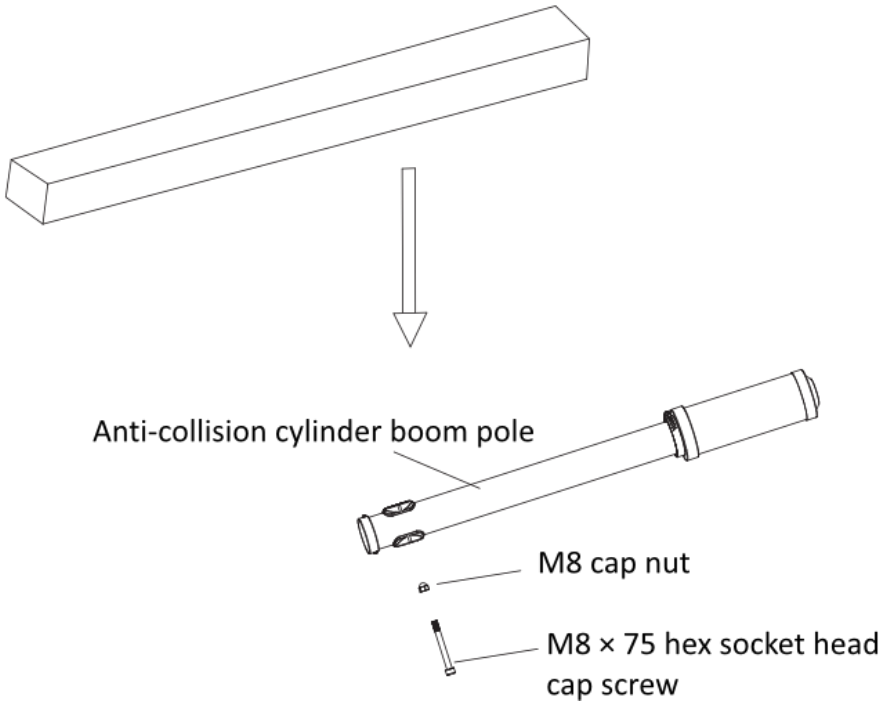


Figure 1-5 Anti-collision Cylinder Boom Pole

Table 1-5 Anti-collision Cylinder Boom Pole Packing List

Item	Quantity
Anti-collision cylinder boom pole	1
M8 cap nut	1
M8 × 75 hex socket head cap screw	1

1.5.4 Octagonal Telescopic Boom Pole

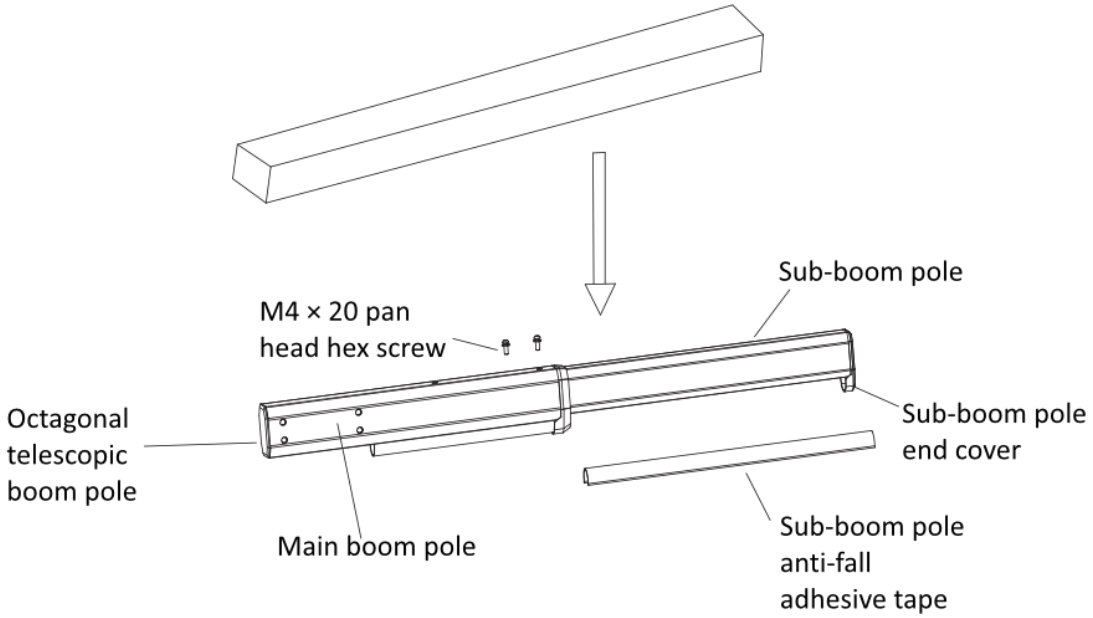


Figure 1-6 Octagonal Telescopic Boom Pole

Table 1-6 Octagonal Telescopic Boom Pole Packing List

Item	Quantity
Octagonal telescopic boom pole	1
Sub-boom pole anti-fall adhesive tape	1
M4 × 20 pan head hex screw	2

1.5.5 Fence Boom Pole

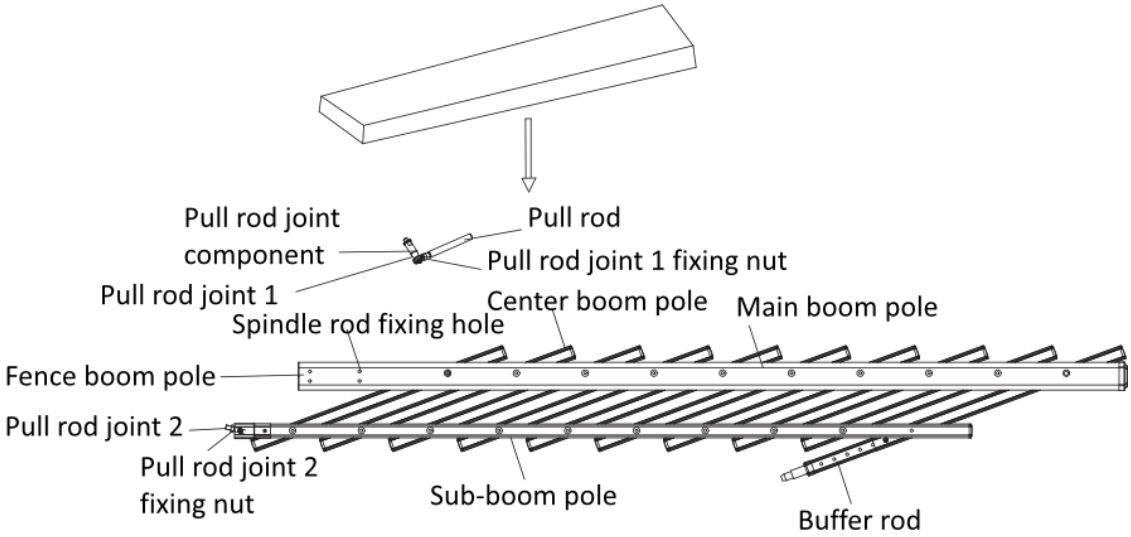


Figure 1-7 Fence Boom Pole

Table 1-7 Fence Boom Pole Packing List

Item	Quantity
Fence boom pole	1
Pull rod joint component	1

1.5.6 Folding Boom Pole

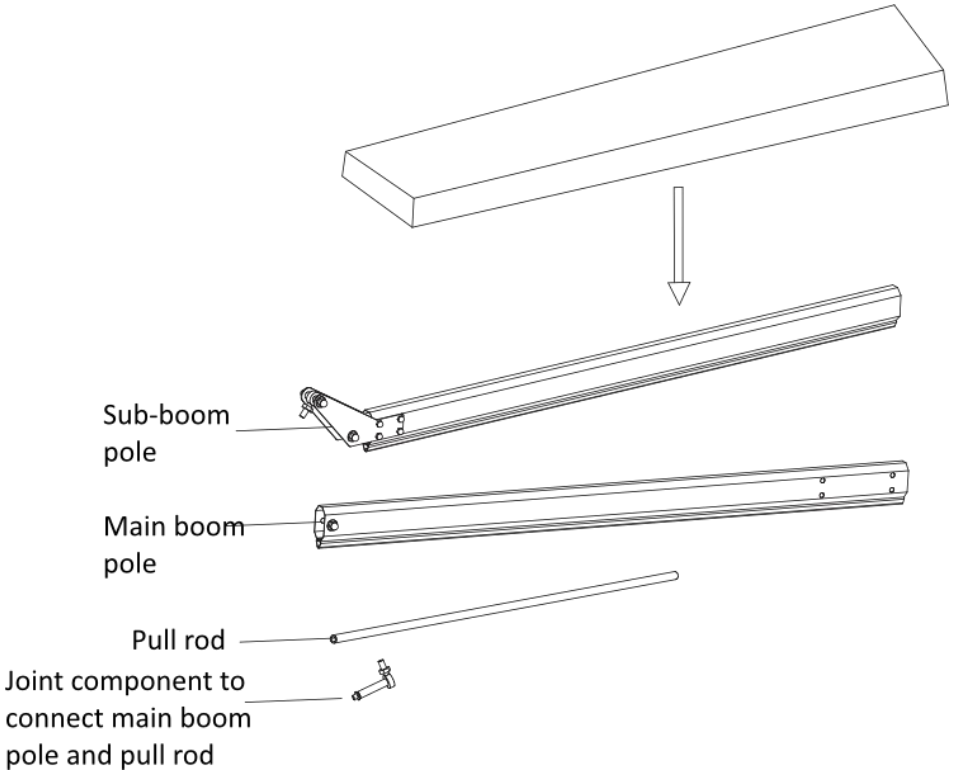


Figure 1-8 Folding Boom Pole

Table 1-8 Folding Boom Pole Packing List

Item	Quantity
Sub-boom pole	1
Main boom pole	1
Pull rod	1
Joint component to connect main boom pole and pull rod	1

Chapter 2 Installation

2.1 Installation Environment

The installation position of the barrier gate should meet the customer's requirements and the following requirements.

- The installation space should be large enough to guarantee the boom pole can rise or fall normally.
- Install the barrier gate on horizontal ground.
- Installation surface requirements:
  - If no base is installed, the installation surface must be firm enough to fix the host to guarantee the barrier gate can run stably.
  - If base is needed, it is recommended to install the base with quick setting cement. The base should be horizontal. The height should be no more than 200 mm. The length and width of base should be larger than those of the actual barrier gate installation surface.
- If the barrier gate is anti-collision, the boom pole will flick 90° in reverse direction if it is impacted. Make sure there is no obstacle in the range.
- Bury the cables before installation. The conduit should be 50 mm higher than the ground to avoid the gathered water on the ground to enter into the cable and cause short circuit.

2.2 Install Barrier Gate Host

Follow the steps below to fix the host of barrier gate.

Steps

1. Mark the positions of holes on the refuge island as shown below. The hole depth is approx. 120 mm.

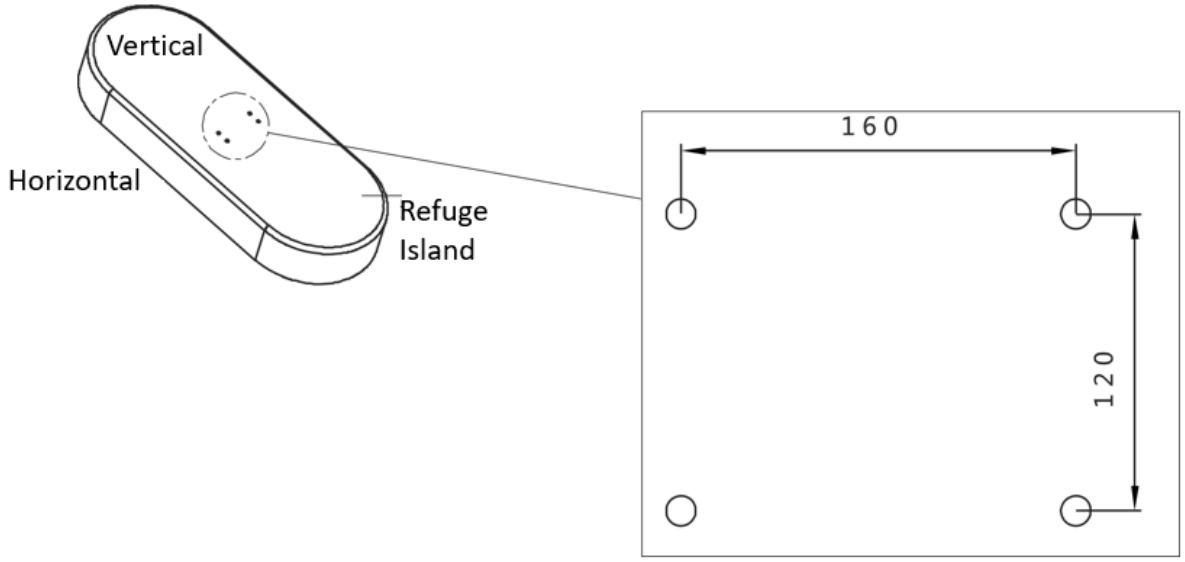


Figure 2-1 Mark Position

Note

The suggestions for positions of holes:

- The holes in vertical direction should be near to the switch.
- If the entrance/exit is unidirectional, the holes should be in the horizontal center of the refuge island. If the entrance/exit is bi-directional, the holes in the horizontal direction should be far away from the entrance/exit.

2. Punch the four M12 × 150 expansion screws in the package into the marked positions on the refuge island, and fasten the nuts to make the screws expand to grip the ground. Then unfasten the nuts.

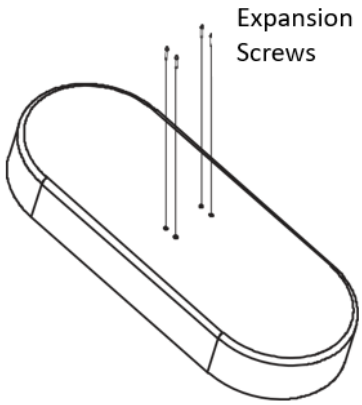


Figure 2-2 Install Expansion Screws

3. Turn the L-type wrench clockwise to open the front cover.

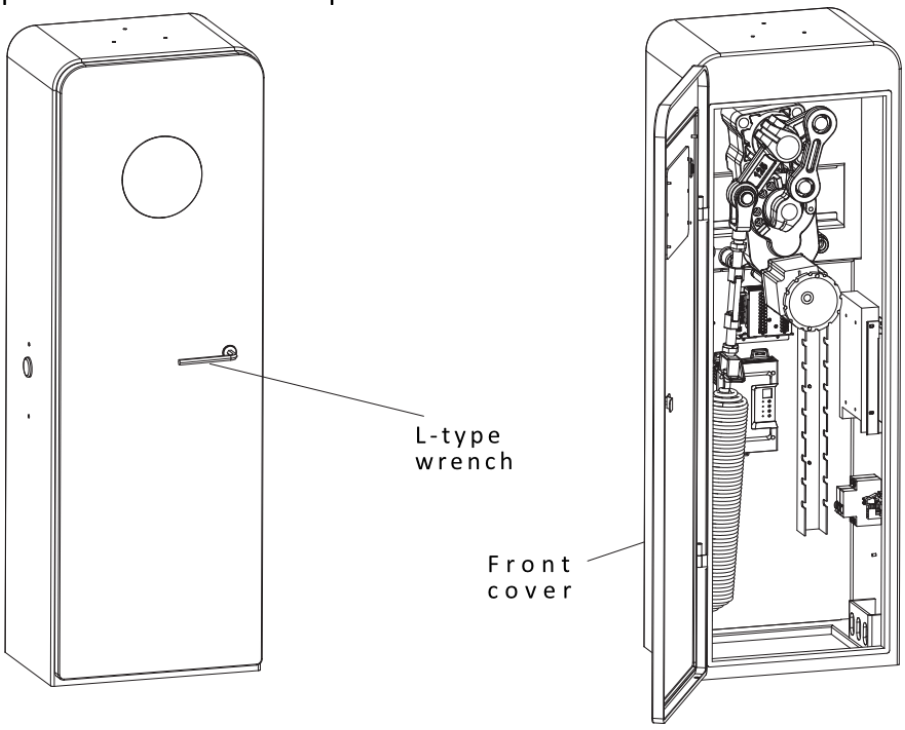


Figure 2-3 Open Front Cover

4. Fix the host.
   1) Put the layers on the host bottom and keep them perpendicular to the barrier gate's switch.
   2) Put the host on the positions of expansion screws on the refuge island to make the screws pass through the layers. Keep the layers perpendicular to the barrier gate's switch.
   3) Fasten the expansion nuts on the screws to fix the host.

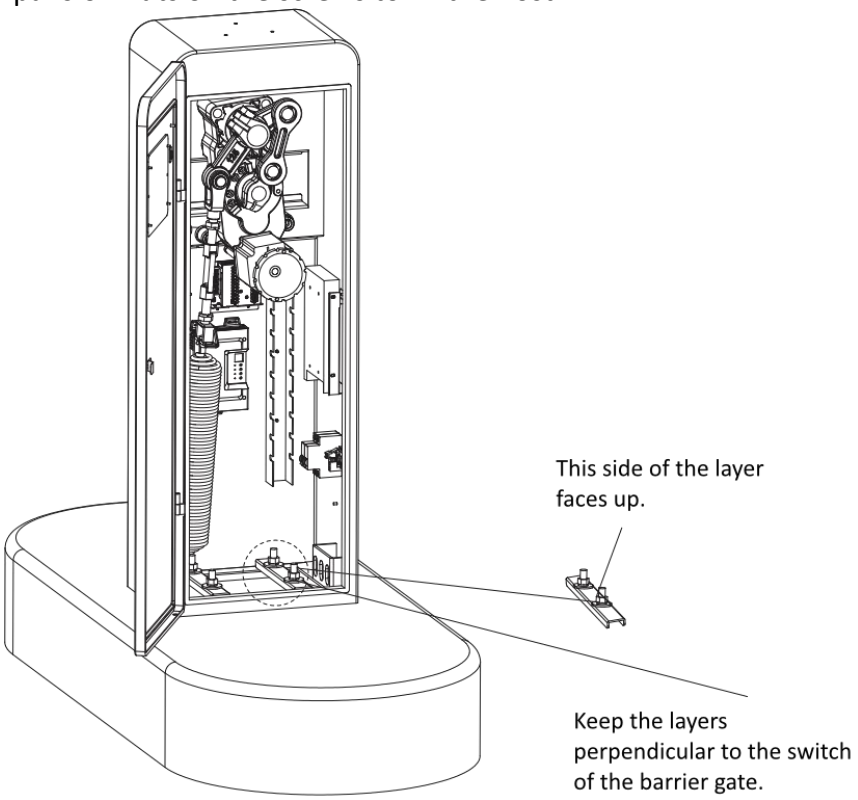


Figure 2-4 Fix Host

Danger

Keep the supporting bracket of the boom pole vertically upward to avoid accident caused by accidental rotation.

2.3 Install Boom Pole

2.3.1 Install Octagonal Straight Boom Pole

Steps

1. Unscrew the cap nuts, spring washers, and flat washers on the other sides of the four assembling bolts. Save the components and parts for the following installations.

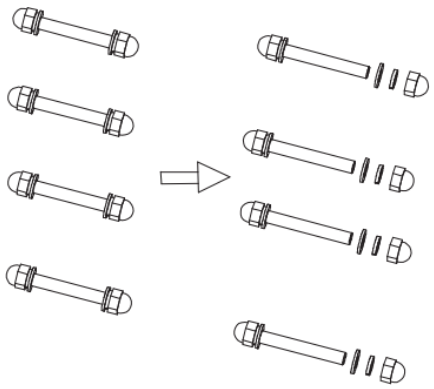


Figure 2-5 Unscrew Assembling Bolts

2. Install the chuck to the boom pole with the bolts as shown in the figure below.

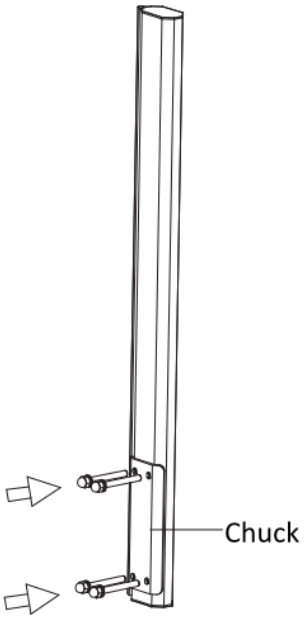


Figure 2-6 Install Chuck

3. Install the boom pole to the spindle rod and fasten the other ends of the bolts with the disassembled spring washers, flat washers, and cap nuts.

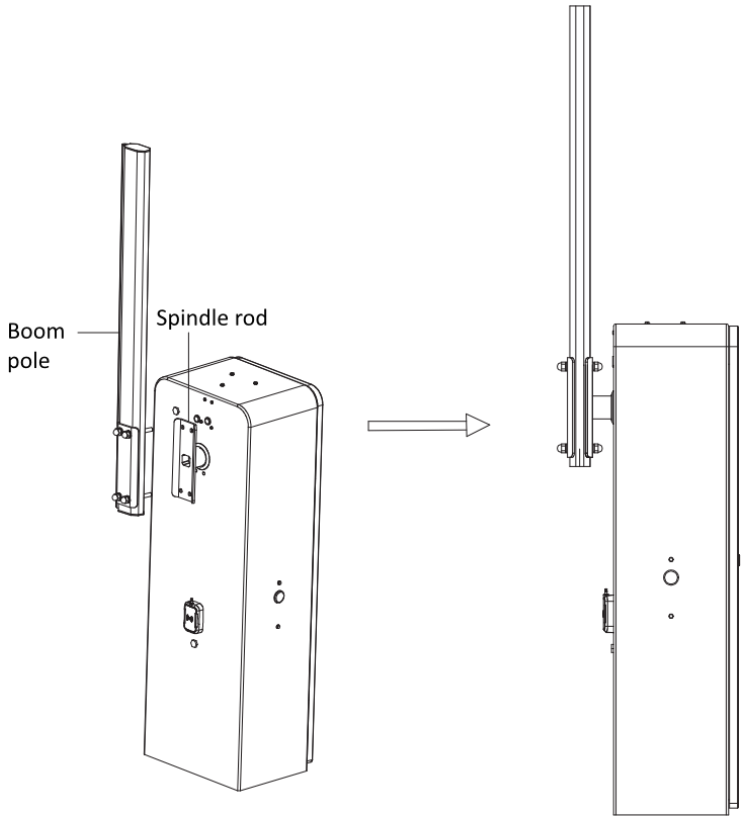


Figure 2-7 Fix Octagonal Straight Boom Pole

2.3.2 Install Boom Pole with Strip Light

Steps

1. Unscrew the cap nuts, spring washers, and flat washers on the other sides of the four assembling bolts. Save the components and parts for the following installations.

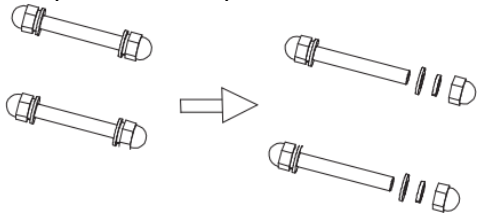


Figure 2-8 Unscrew Assembling Bolts

4. Install the chuck and two cushion blocks to the boom pole with the bolts as shown in the figure below.

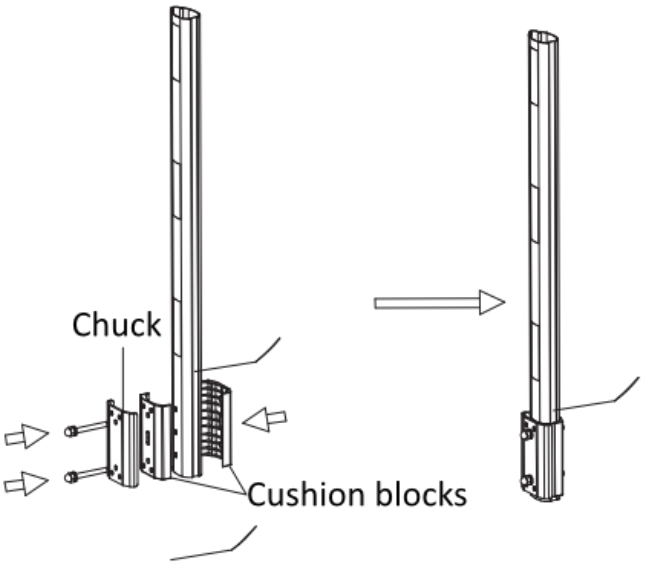


Figure 2-9 Install Chuck and Cushion Blocks

5. Install the boom pole to the spindle rod and fasten the other ends of the bolts with the disassembled spring washers, flat washers, and cap nuts.

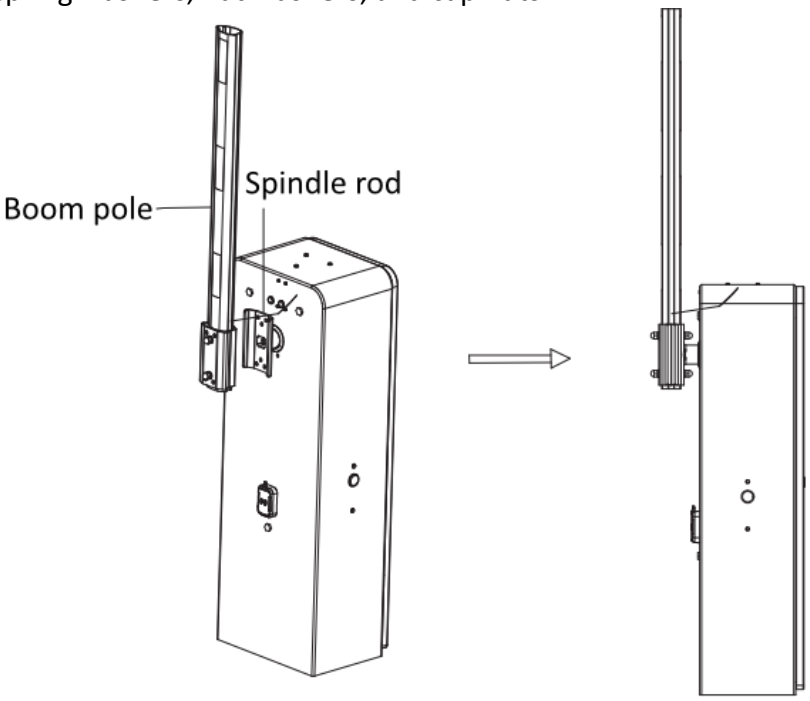


Figure 2-10 Fix Boom Pole with Strip Light

6. Remove the rubber plug of the cable hole on the host.

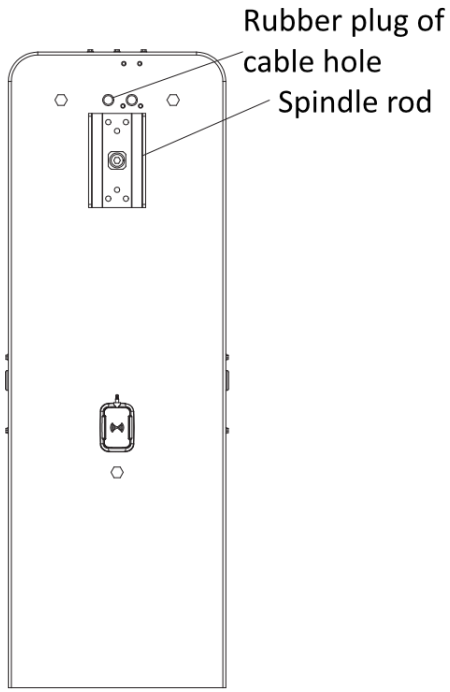


Figure 2-11 Remove Rubber Plug

7. Wire the strip light cable.
   1) Take the M12 white waterproof joint out from the accessory package.
   2) Fix the waterproof joint to the cable hole on the host with the fixing nut.
   3) Remove the waterproof cover from the joint, and thread the strip light cable through the waterproof cover, waterproof joint, and fixing nut.
   4) Pull the strip light cable in the internal host until the white rolling strip limit block on the strip light cable nears to the waterproof cover.
   5) Power off the device. Rotate the boom pole to check if the strip light cable length is appropriate. Fasten the waterproof cover to the joint after the length is appropriate.

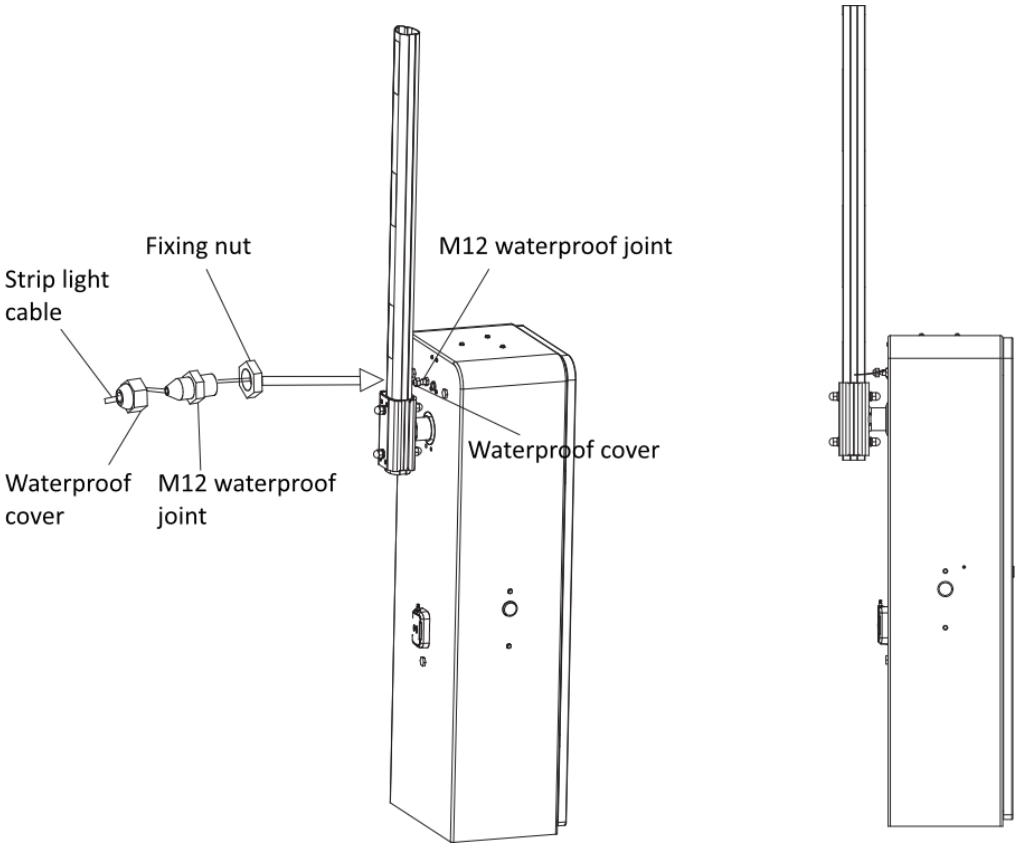


Figure 2-12 Wire Strip Light Cable

2.3.3 Install Anti-collision Cylinder Boom Pole

Steps

1. Stuff the boom pole in the spindle rod aslant as shown in the figure below. Align the installation hole on the boom pole with that on the spindle rod.

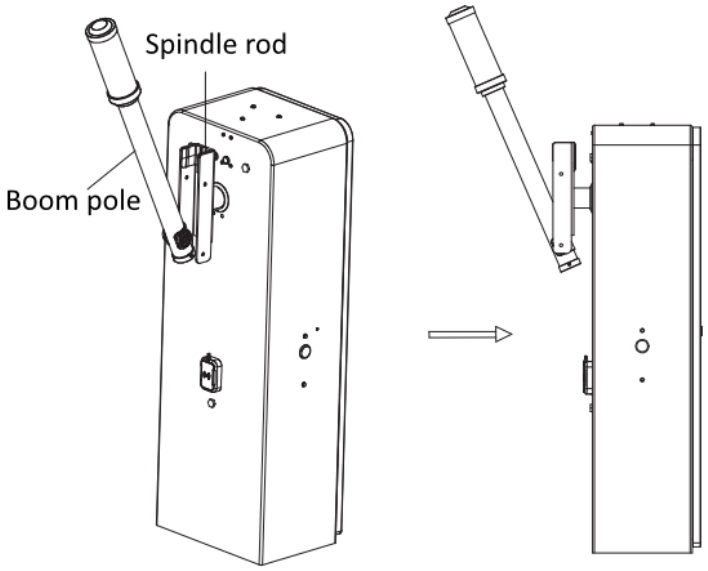


Figure 2-13 Stuff Boom Pole Aslant

2. Insert the M8 × 75 hex socket head cap screw into the installation hole, and push the boom pole into the spindle rod quickly according to the directions as shown in the figure below.

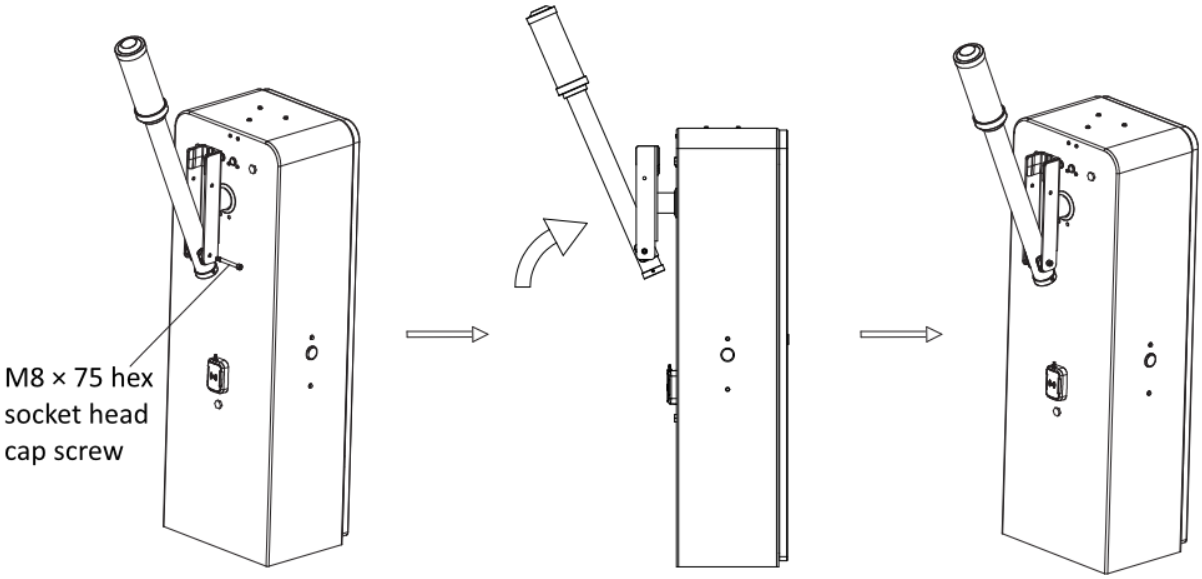


Figure 2-14 Install Anti-collision Cylinder Boom Pole

3. Fix the M8 cap nut to the screw to fix the boom pole.

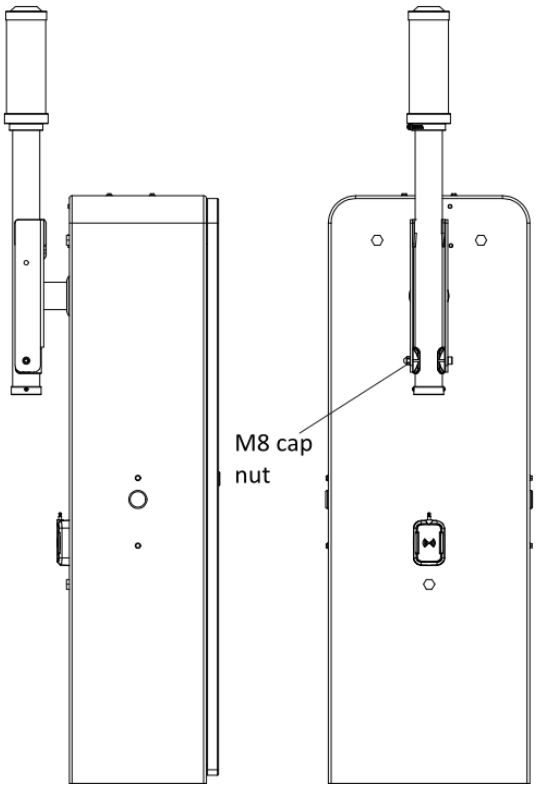


Figure 2-15 Fix Boom Pole

2.3.4 Install Octagonal Telescopic Boom Pole

Steps

1. Install the octagonal telescopic boom pole.
   1) Pull the sub-boom pole out according to the direction shown in the figure below. Align the installation holes on the main boom pole and sub-boom pole.

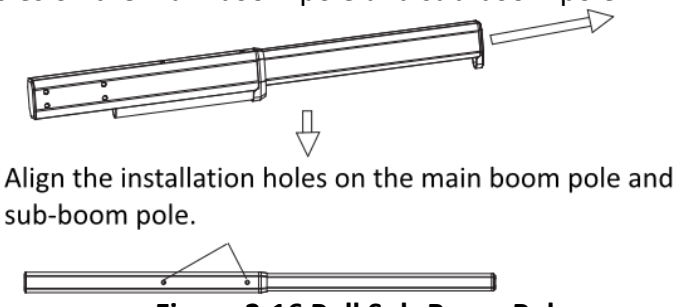


Figure 2-16 Pull Sub-Boom Pole

   2) Fix two M4 × 20 pan head hex screws into the installation holes.

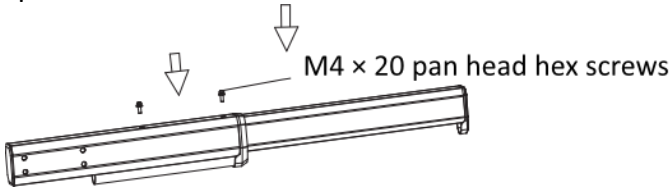


Figure 2-17 Fix Screws

3) Remove the end cover of the sub-boom pole. Insert the anti-fall adhesive tape into the sub-boom pole. After the anti-fall adhesive tape is inserted to the limit position, cut the projecting adhesive tape.

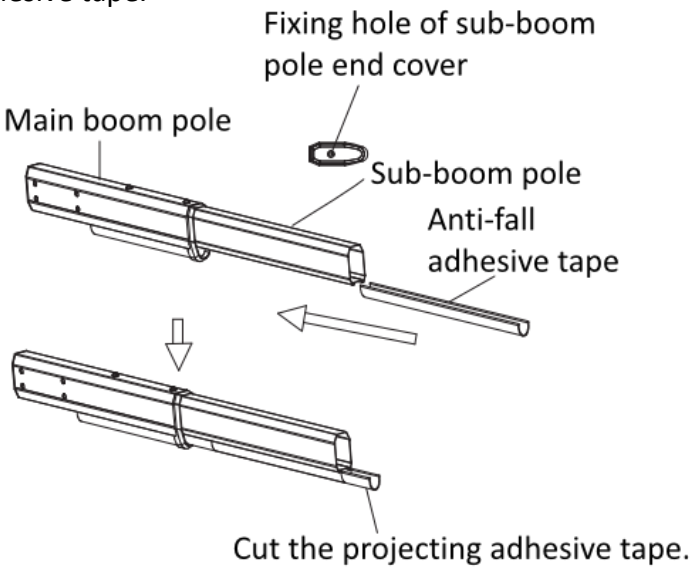


Figure 2-18 Insert Anti-Fall Adhesive Tape

4) Install the end cover to the sub-boom pole.

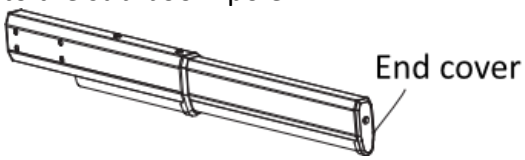


Figure 2-19 Install End Cover

2. Install the octagonal telescopic boom pole to the host.
   1) Unscrew the cap nuts, spring washers, and flat washers on the other sides of the four assembling bolts. Save the components and parts for the following installations.

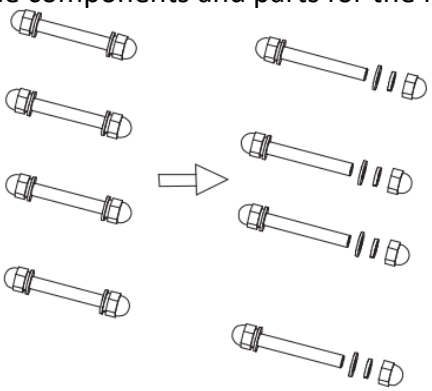


Figure 2-20 Unscrew Assembling Bolts

   2) Install the chuck to the boom pole with the bolts as shown in the figure below.

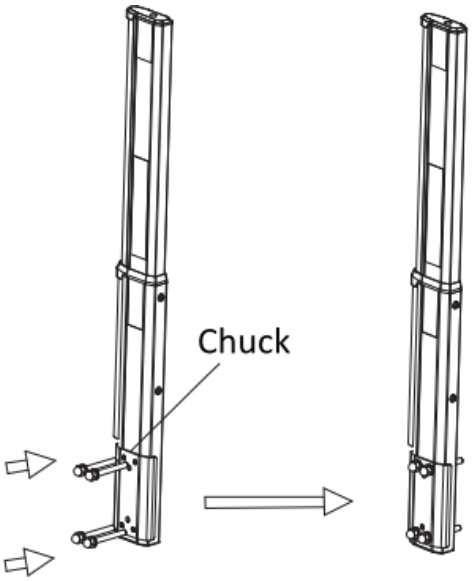


Figure 2-21 Install Chuck

3) Install the boom pole to the spindle rod and fasten the other ends of the bolts with the disassembled spring washers, flat washers, and cap nuts.

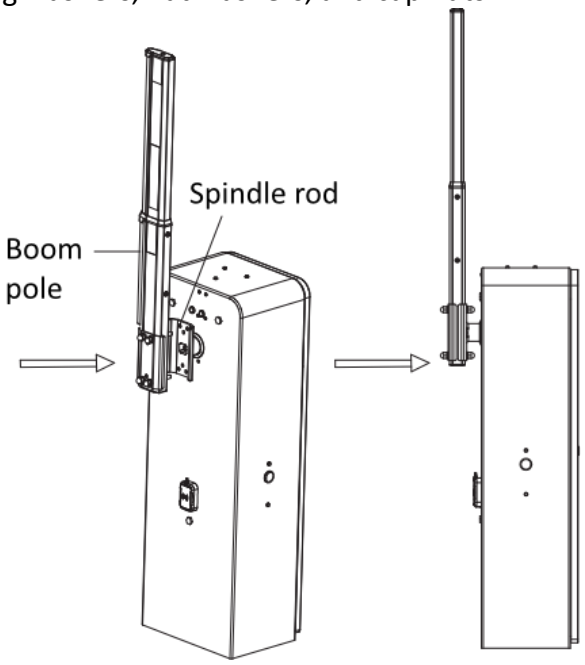


Figure 2-22 Fix Octagonal Telescopic Boom Pole

2.3.5 Install Fence Boom Pole

Installation Procedure

Steps

1. Install the pull rod joint component to the installation position of the host. Unfasten the joint component pull rod.

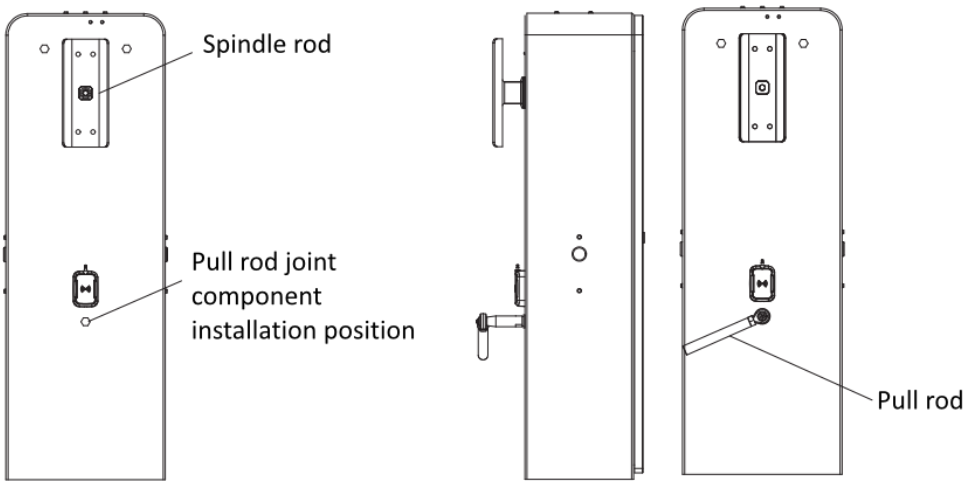


Figure 2-23 Install Pull Rod Joint Component

2. Install the fence boom pole.
   1) Unscrew the cap nuts, spring washers, and flat washers on the other sides of the four assembling bolts. Save the components and parts for the following installations.

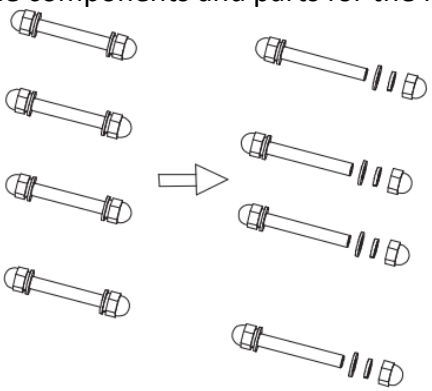


Figure 2-24 Unscrew Assembling Bolts

   2) Install the chuck to the boom pole with the bolts as shown in the figure below.

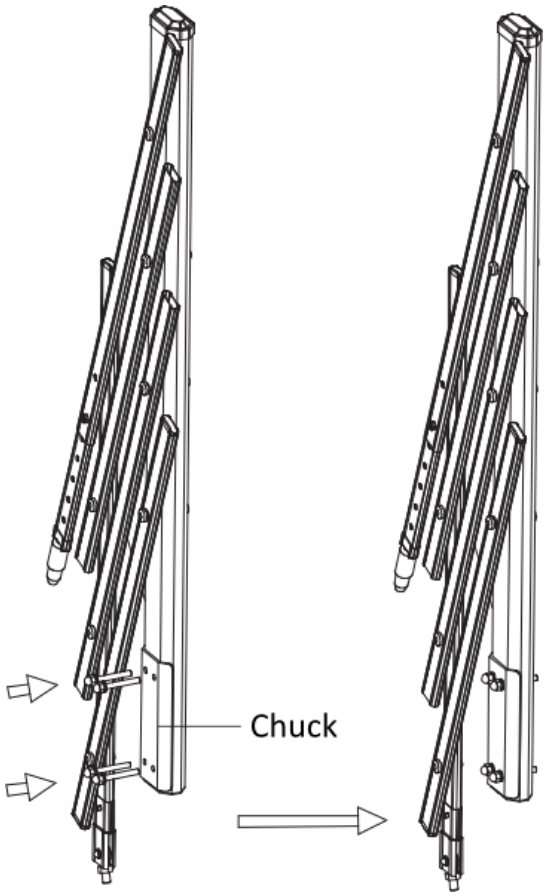


Figure 2-25 Install Chuck

3) Install the boom pole to the spindle rod and fasten the other ends of the bolts with the disassembled spring washers, flat washers, and cap nuts.

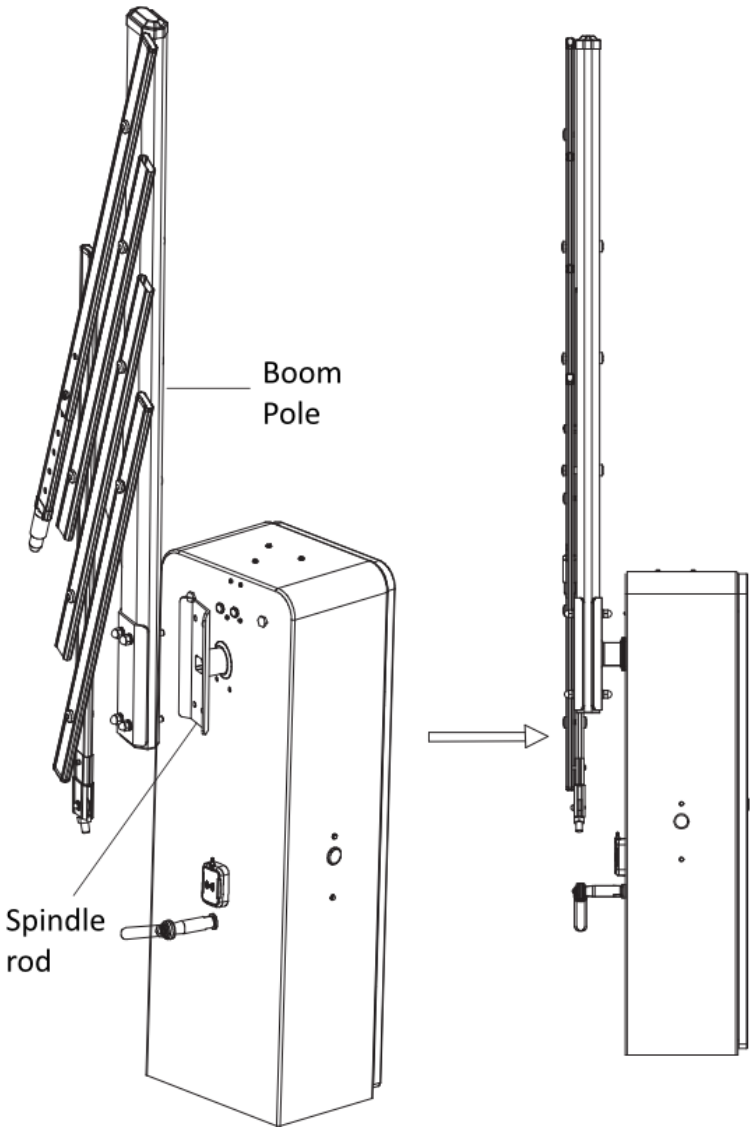


Figure 2-26 Fix Fence Boom Pole to Spindle Rod

4) Power off the device. Pull the fence boom pole to the horizontal position. Connect the pull rod of the joint component to the joint 2 of the fence boom pole pull rod. Wrest the pull rod of the joint component until the center boom poles are in the vertical position. Fasten the fixing nuts of the joint 1 of the joint component pull rod and joint 2 of the fence boom pole pull rod respectively.
5) Adjust the buffer rod height adjustment holes on the fence boom pole until the end of the buffer rod is on the same horizontal surface with that of the refuge island.

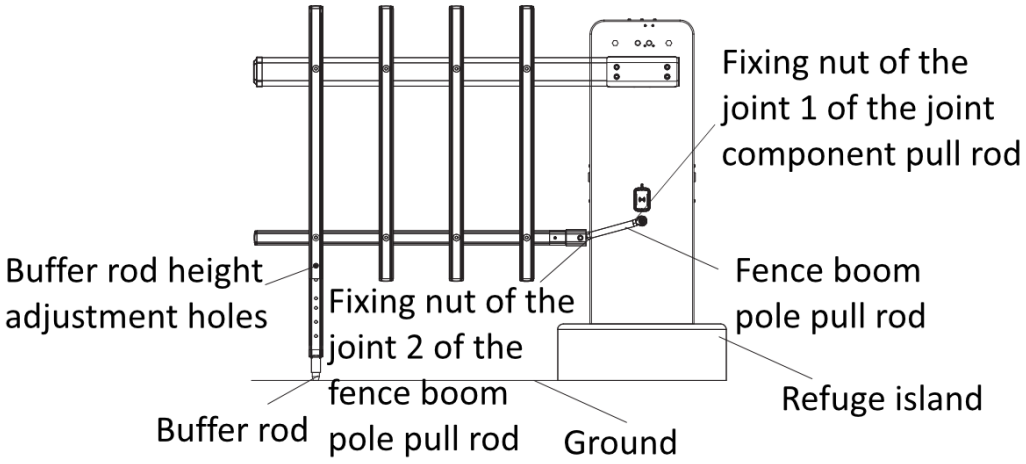


Figure 2-27 Adjust Fence Boom Pole

Note

For the refuge island with a special height, drill holes by yourself to adjust the buffer rod height.

Left and Right Directions of Fence Boom Pole

When you look from the arrow direction as shown below, the right fence boom pole is the one that the center boom poles are on the left of the main boom pole, and the left fence boom pole is the one that the center boom poles are on the right of the main boom pole.

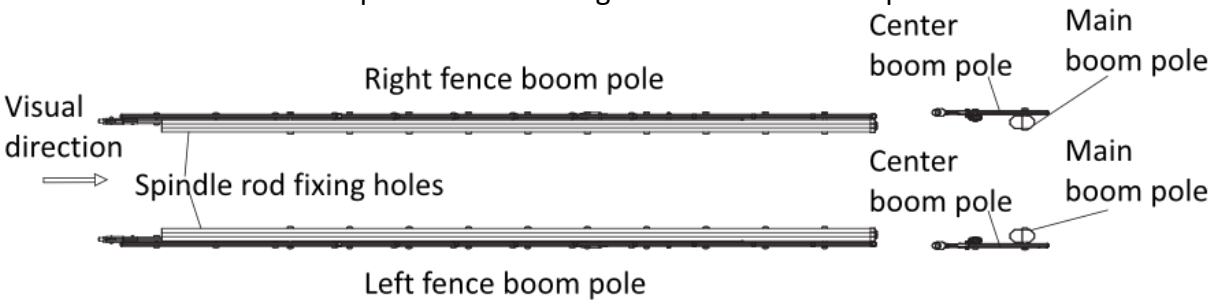


Figure 2-28 Left and Right Directions of Fence Boom Pole

2.3.6 Install Folding Boom Pole

Steps

1. Compose the main boom pole and sub-boom pole.
   1) Unfasten the cap nuts on the main boom pole and remove the screw and gaskets. Save the

components and parts for the following installations.

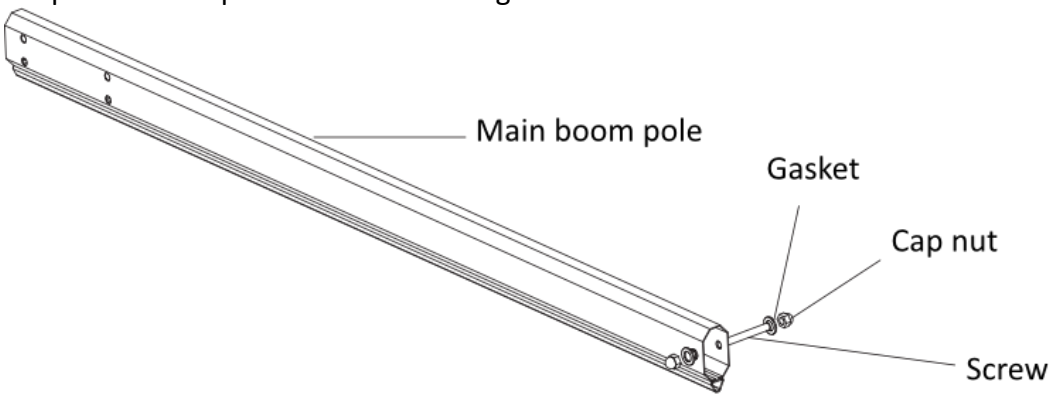


Figure 2-29 Unfasten Accessories of Main Boom Pole

2) Unfasten the cap nuts on the sub-boom pole and remove the screw, gaskets, and sub-boom pole pull rod joint. Save the components and parts for the following installations.

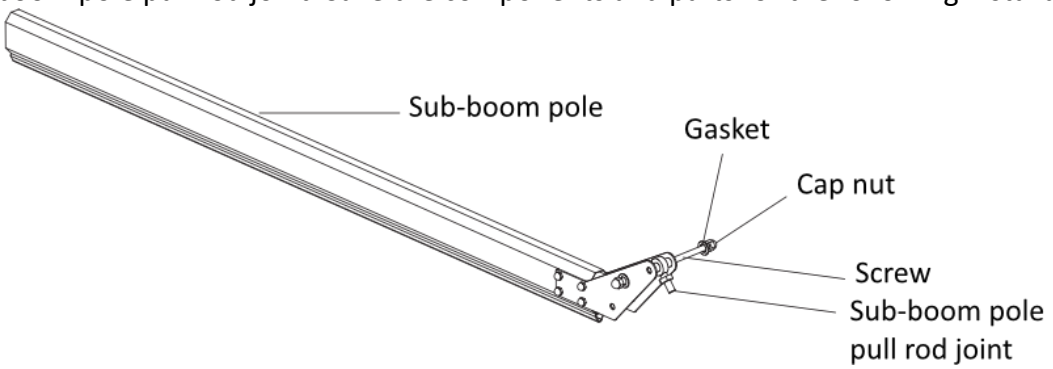


Figure 2-30 Unfasten Accessories of Sub- Boom Pole

3) Force apart the sub-boom pole joint boards, and install the main boom pole. Make sure that the installation holes on the joint boards of the sub-boom pole can clip into the black bushing on the main boom pole.

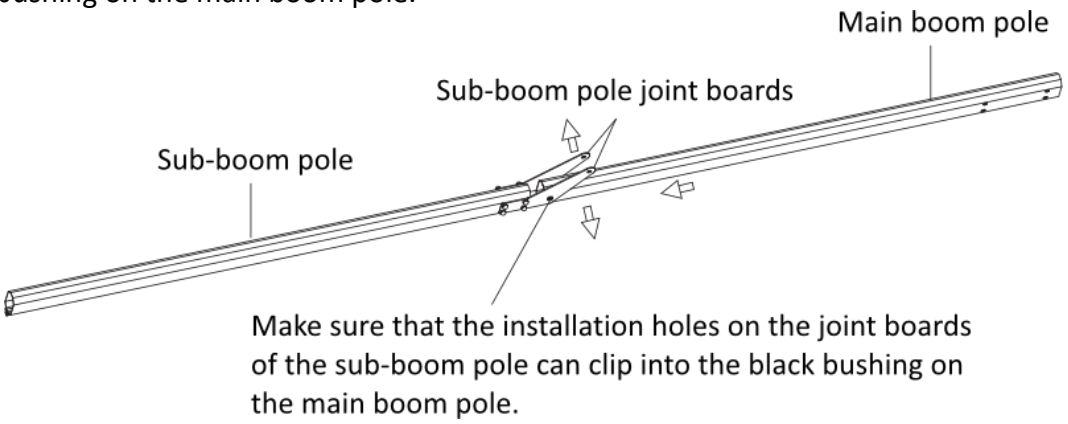


Figure 2-31 Connect Main Boom Pole and Sub-Boom Pole

4) Put the sub-boom pole pull rod joint between the joint boards, and insert the screw through the pull rod joint and gaskets, and fasten the cap nuts. Insert the other screw through the other installation holes on the sub-boom pole joint boards and gaskets, and fasten the cap nuts. Make sure that the black bushing on the sub-boom pole pull rod joint

can clip into installation holes on the sub-boom pole joint boards.

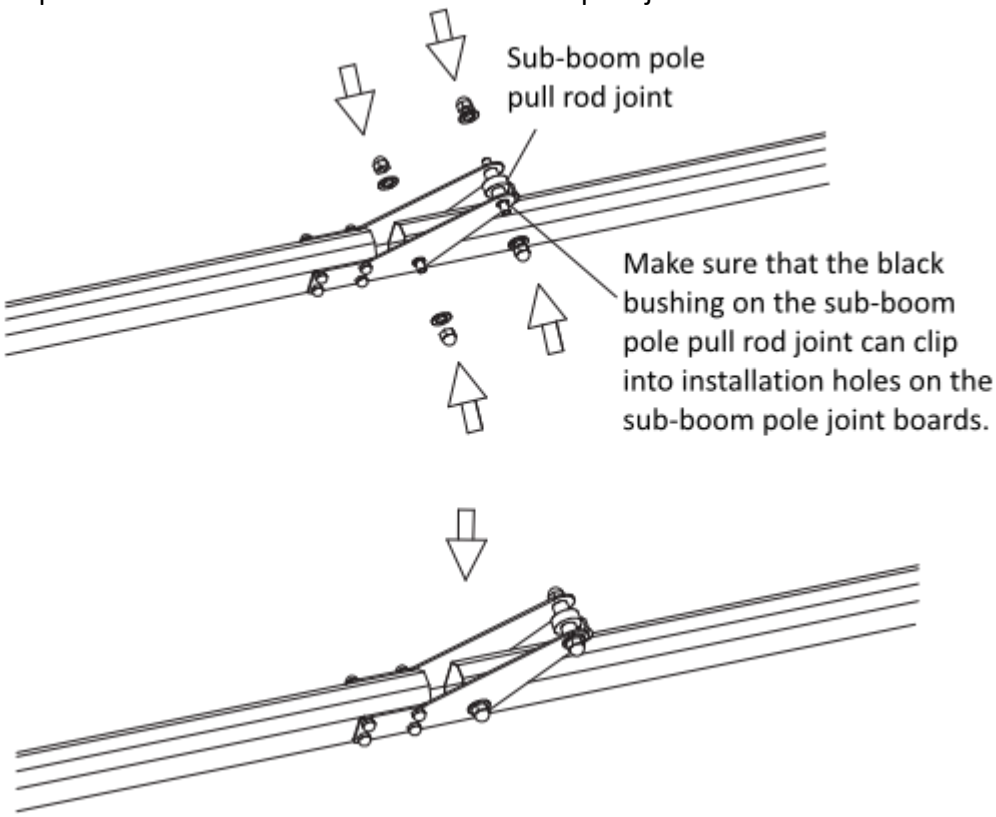


Figure 2-32 Install Sub-Boom Pole Pull Rod Joint

2. Install the folding boom pole to the host.

Note

Here we take example of the right direction barrier gate.

1) Remove the plastic nut on the installation position of the right direction main boom pole pull

rod joint.

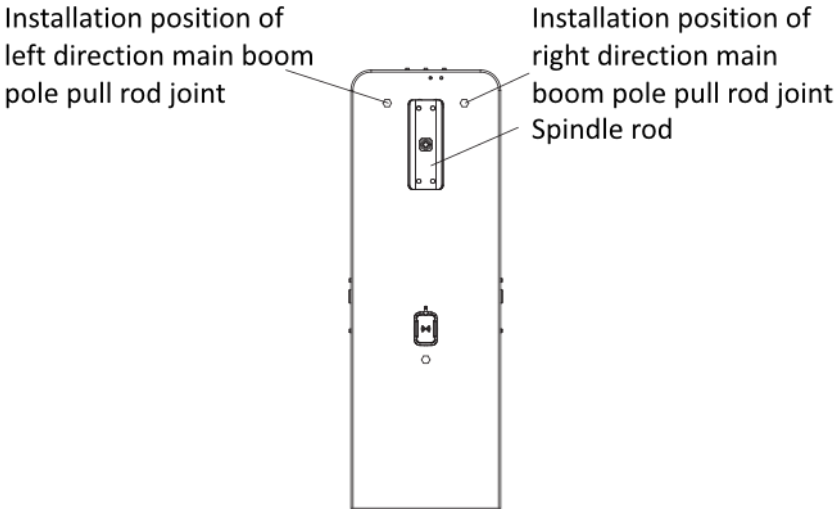


Figure 2-33 Remove Plastic Nut

2) Install the right direction main boom pole pull rod joint to the installation holes with the flat washer and spring washer.

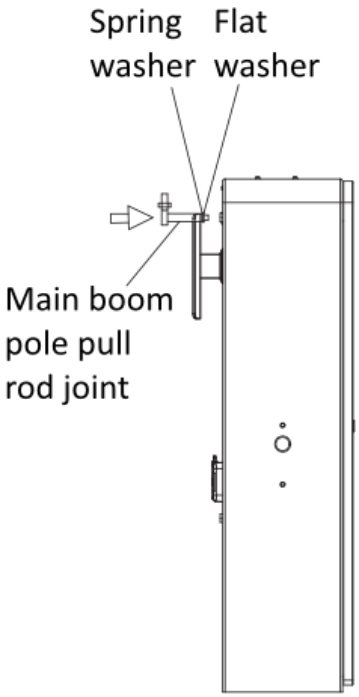


Figure 2-34 Install Main Boom Pole Pull Rod Joint

3) Unscrew the cap nuts, spring washers, and flat washers on the other sides of the four assembling bolts. Save the components and parts for the following installations.

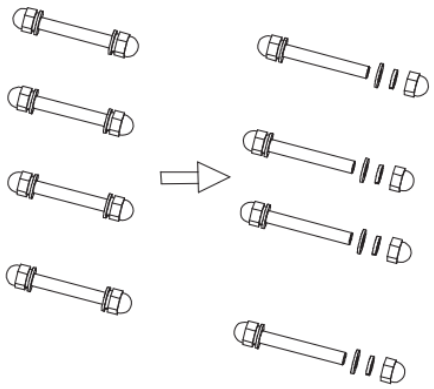


Figure 2-35 Unscrew Assembling Bolts

4) Install the chuck to the boom pole with the bolts as shown in the figure below.

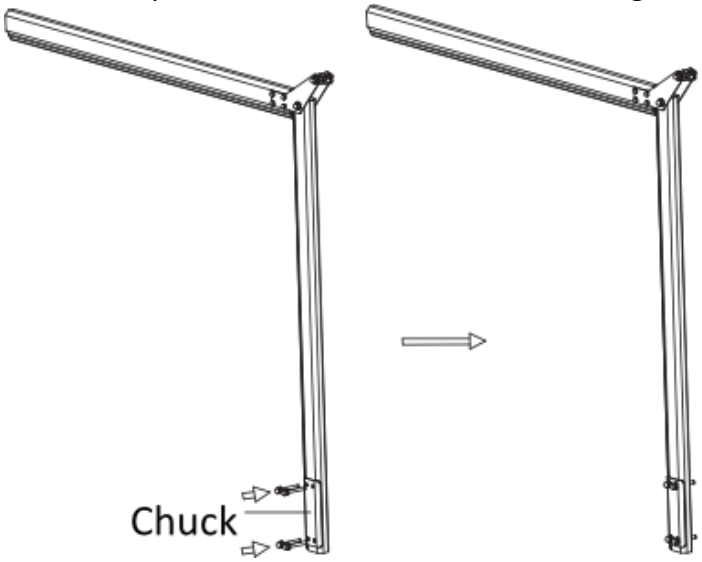


Figure 2-36 Install Chuck

5) Install the boom pole to the spindle rod and fasten the other ends of the bolts with the disassembled spring washers, flat washers, and cap nuts.

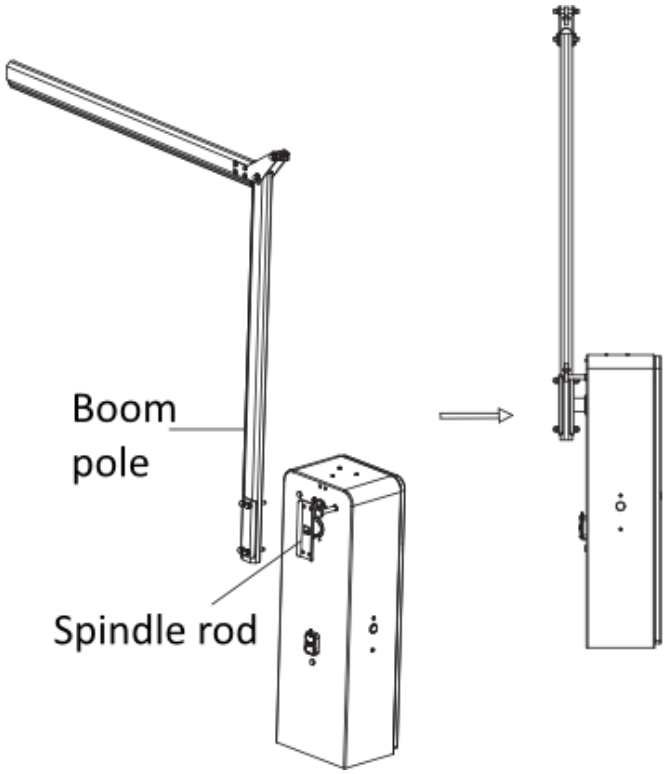


Figure 2-37 Fix Folding Boom Pole

6) Power off the device. Pull the main boom pole to the horizontal position, and place the sub-boom pole nearly to the horizontal position. Wrest the pull rod between the sub-boom pole pull rod joint and the main boom pole pull rod joint. Wrest the pull rod continuously to keep the main boom pole and sub-boom pole in the horizontal position, and fasten the nuts on

both ends.

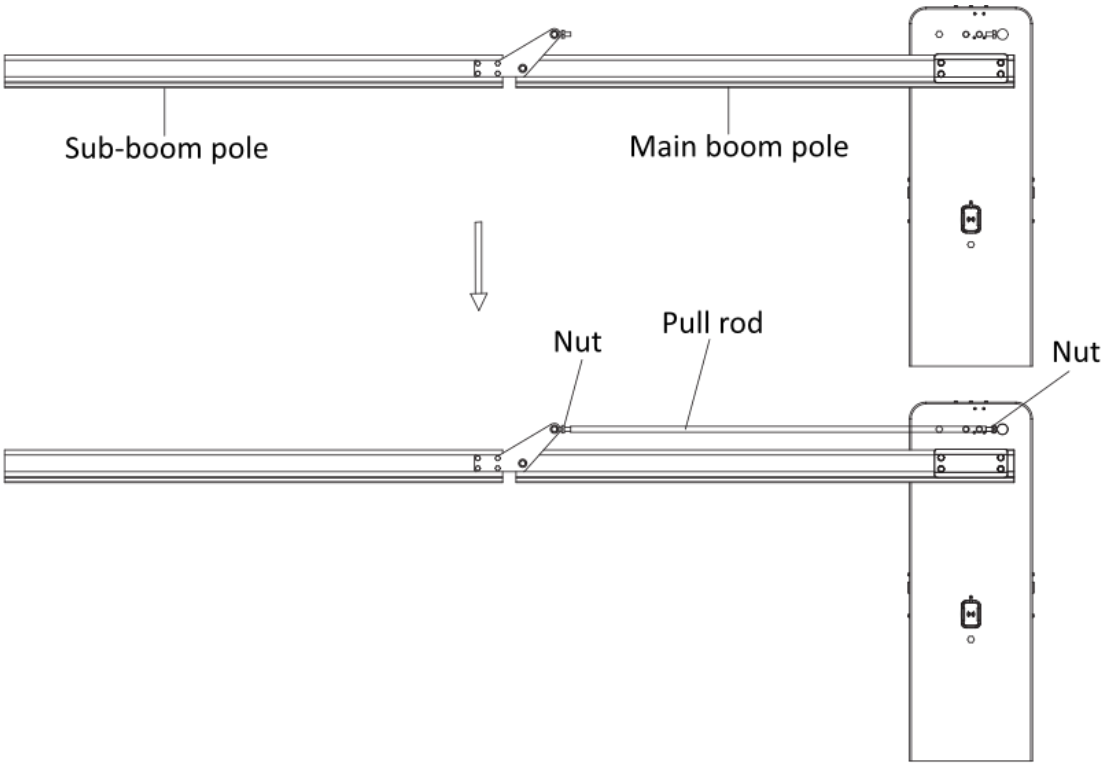


Figure 2-38 Connect Boom Pole to Host via Pull Rod

2.4 Wiring

2.4.1 Connect to Power Supply

Connect the barrier gate to the power supply according to the figure shown below.

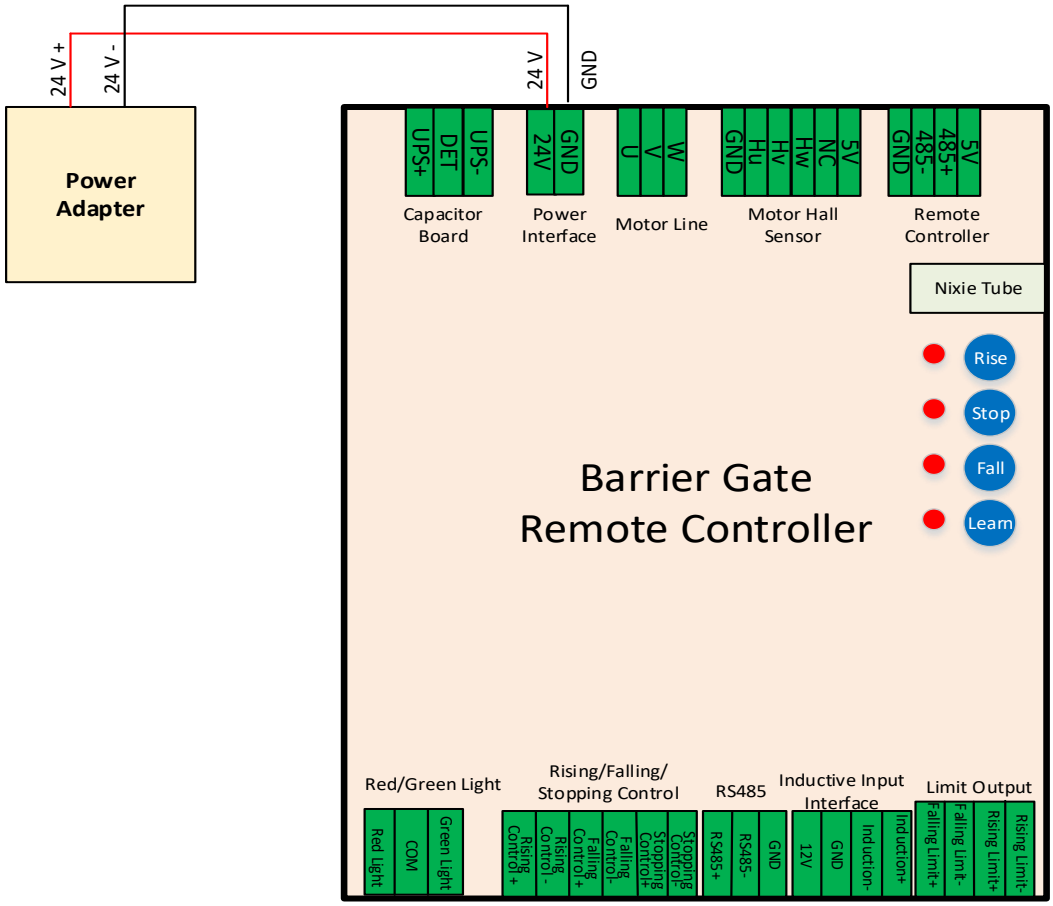


Figure 2-39 Connect to Power Supply

2.4.2 Connect to Supercapacitor Board

Connect the barrier gate to the supercapacitor board as the figure shown below to realize that the boom pole can rise automatically to let the vehicles pass when the power supply is cut off.

Note

The supercapacitor board needs to be ordered in addition.

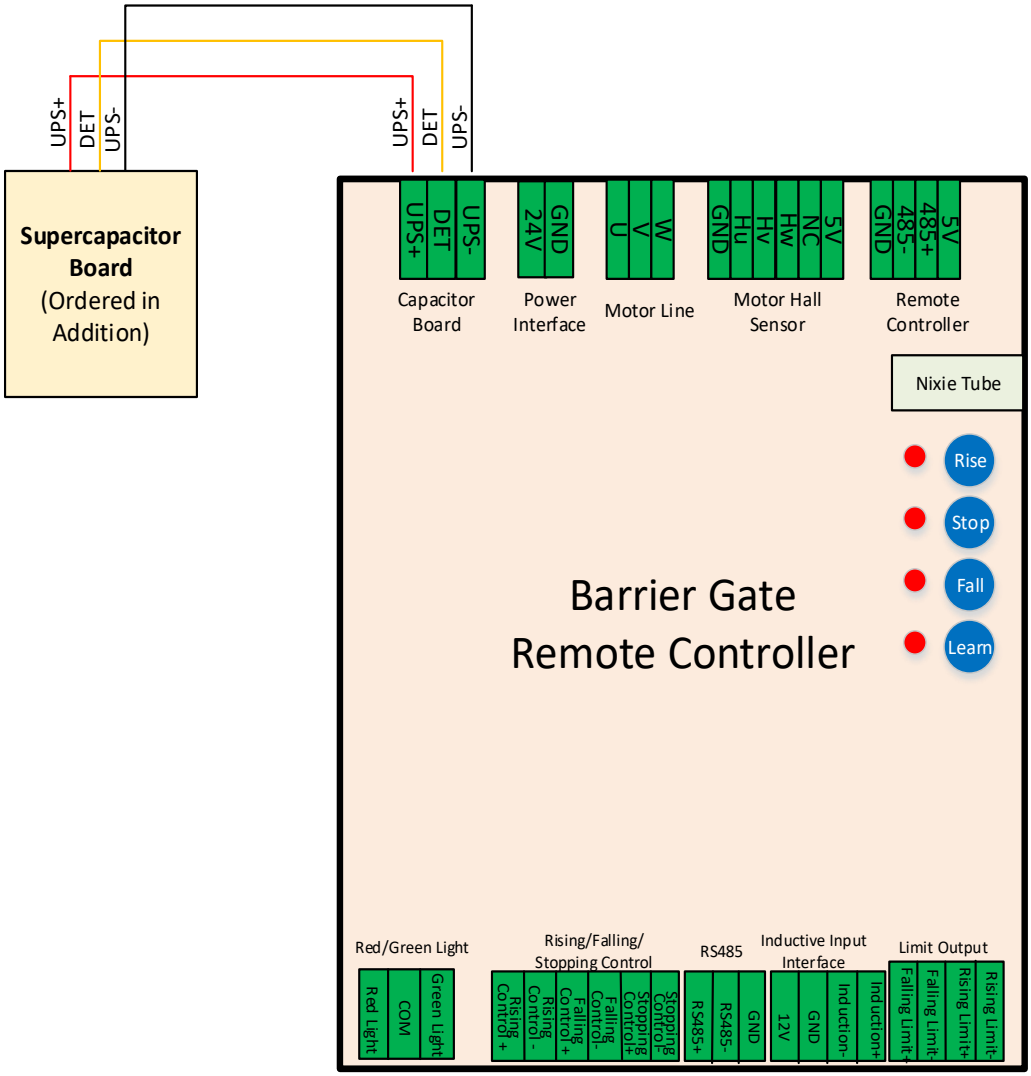


Figure 2-40 Connect to Supercapacitor Board

2.4.3 Connect to Access ANPR Camera

As the figure shown below, connect the rising control + and rising control – interfaces of the barrier gate to the rising control interfaces of the access ANPR camera, and connect the falling control + and falling control – interfaces of the barrier gate to the falling control interfaces of the access ANPR camera.

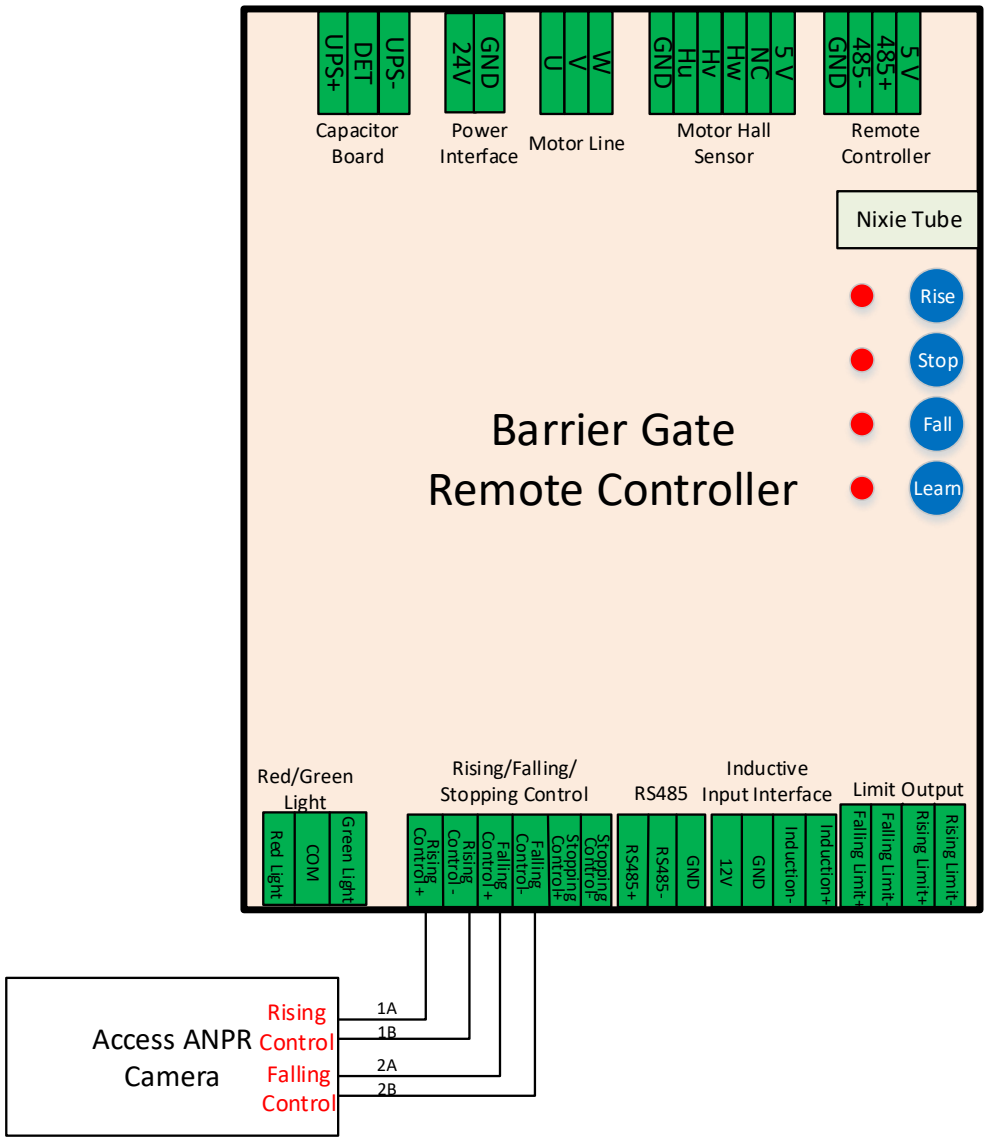


Figure 2-41 Connect to Access ANPR Camera

2.4.4 Connect to Traffic Signal Light

Connect the live line to the COM interface of the barrier gate. Connect the red light interface of the barrier gate to the red traffic signal light, and connect the green light interface of the barrier gate to the green traffic signal light. Connect the null line to the red and green traffic signal lights.

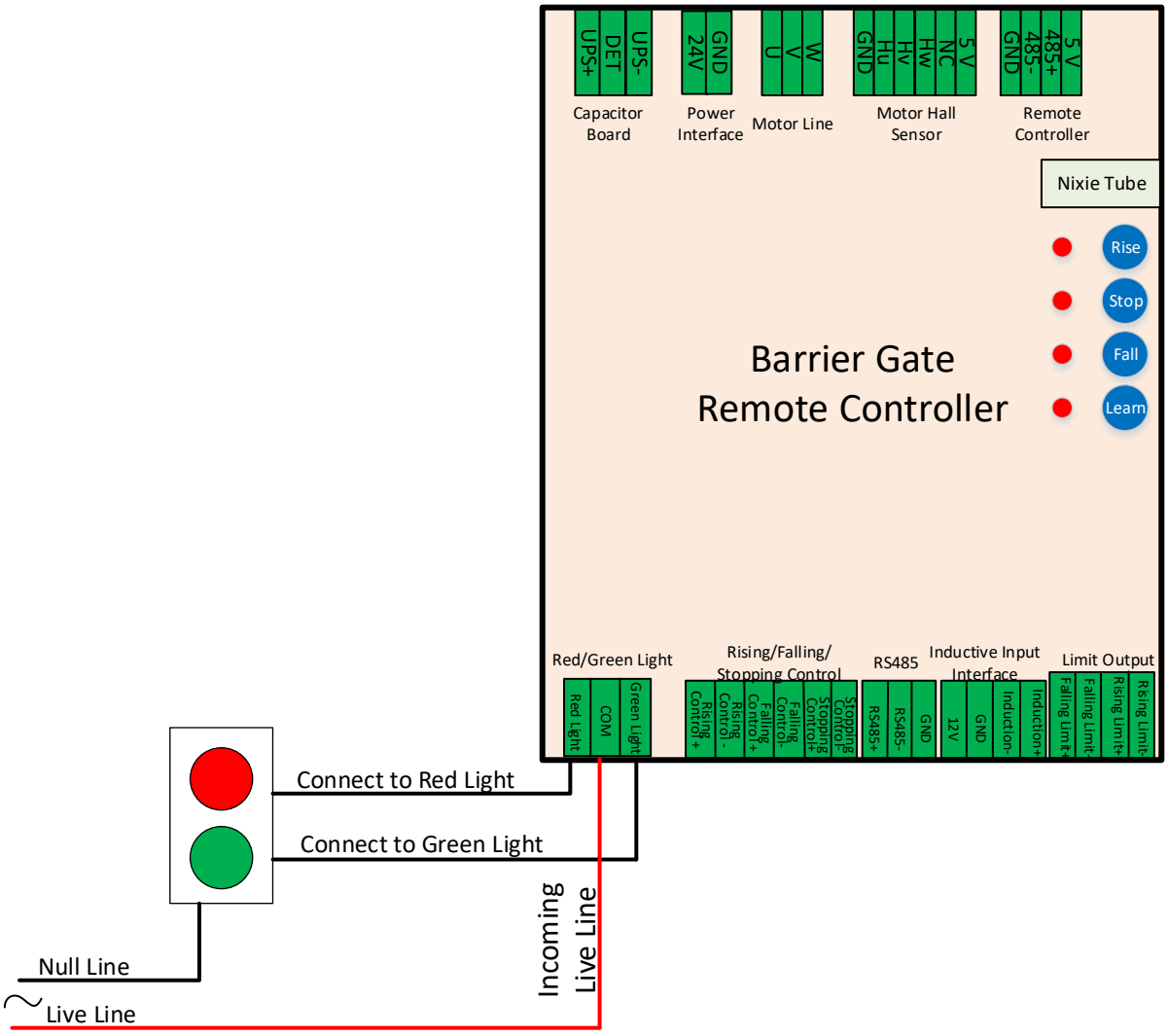


Figure 2-42 Connect to Traffic Signal Light

2.4.5 Connect to Anti-fall Radar

Anti-fall Radar Wiring

The anti-fall radar needs to be powered by 12 VDC power supply. Connect the 12 VDC interface and GND interface of the barrier gate to the radar.

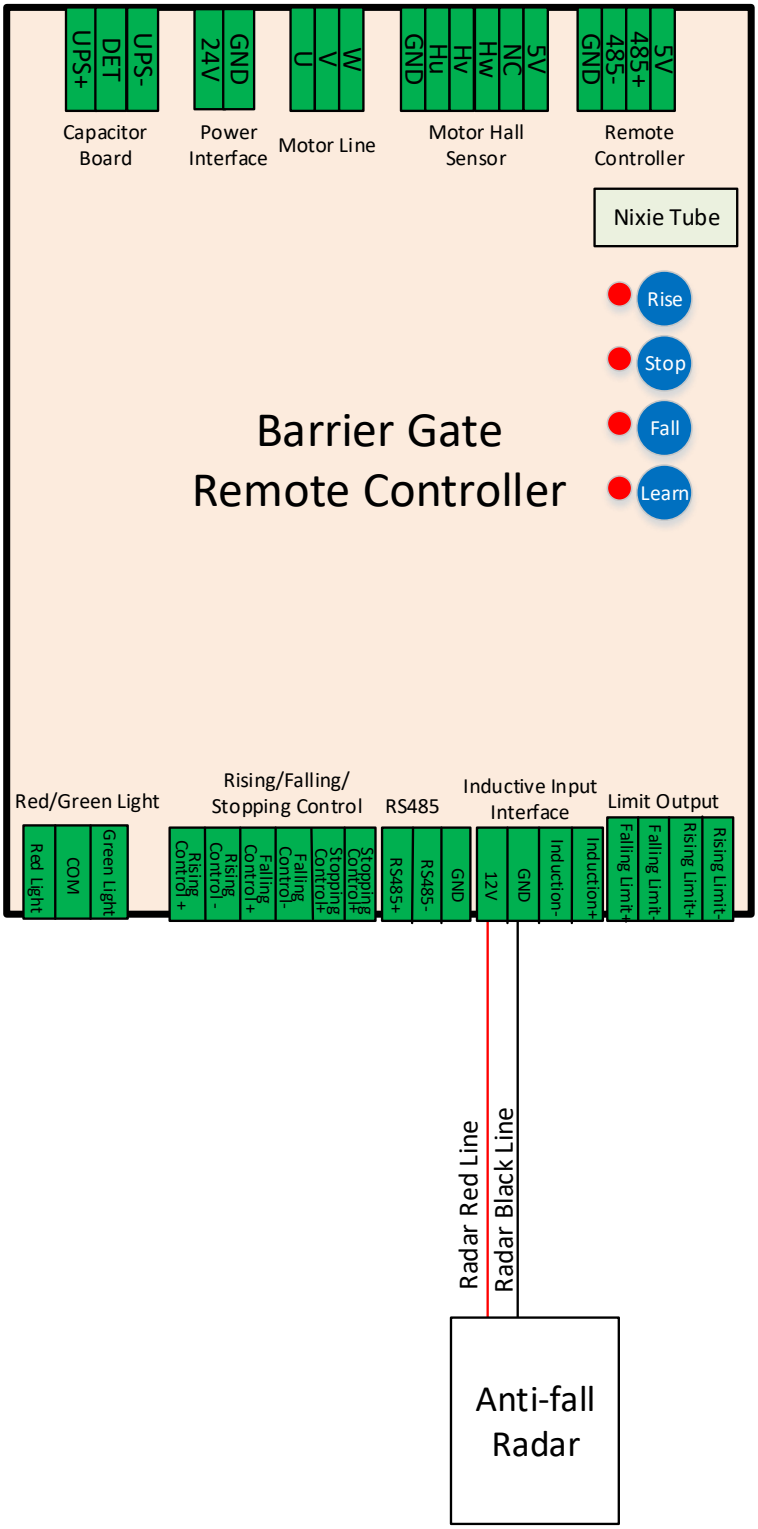


Figure 2-43 Connect to Anti-fall Radar

Radar Installation Instructions

The anti-fall radar should be installed beside the barrier gate. In different scenarios, follow the instructions below to get the best effect.

Scenario 1: Small-Sized Vehicles

For small-sized vehicles, such as the cars and SUVs, install the radar according to the figure shown below.

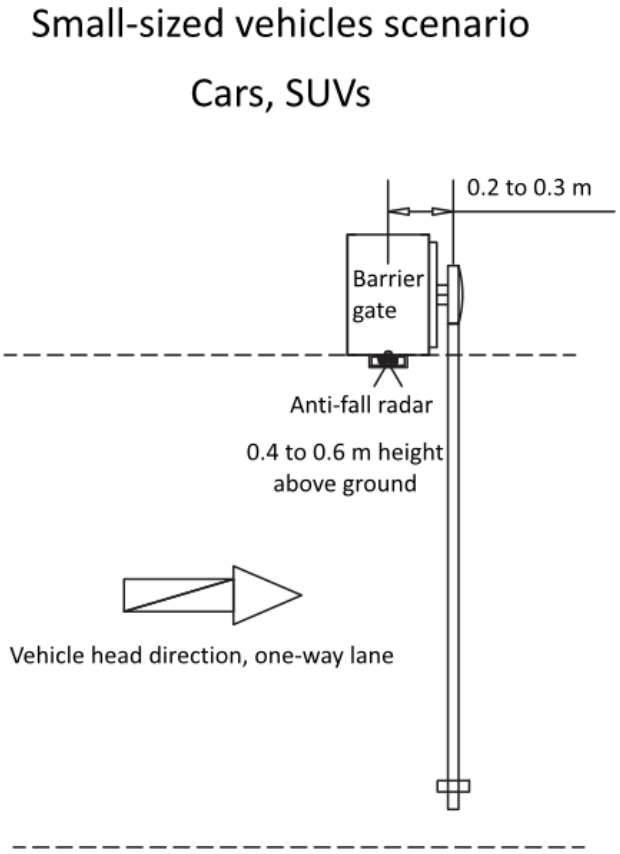


Figure 2-44 Small-Sized Vehicles Scenario

Scenario 2: Large-Sized Vehicles

For large-sized vehicles, such as the oil tank trucks, transport vehicles, trucks, and other vehicles with chassises of higher than 1 m, install the radar according to the figure shown below.

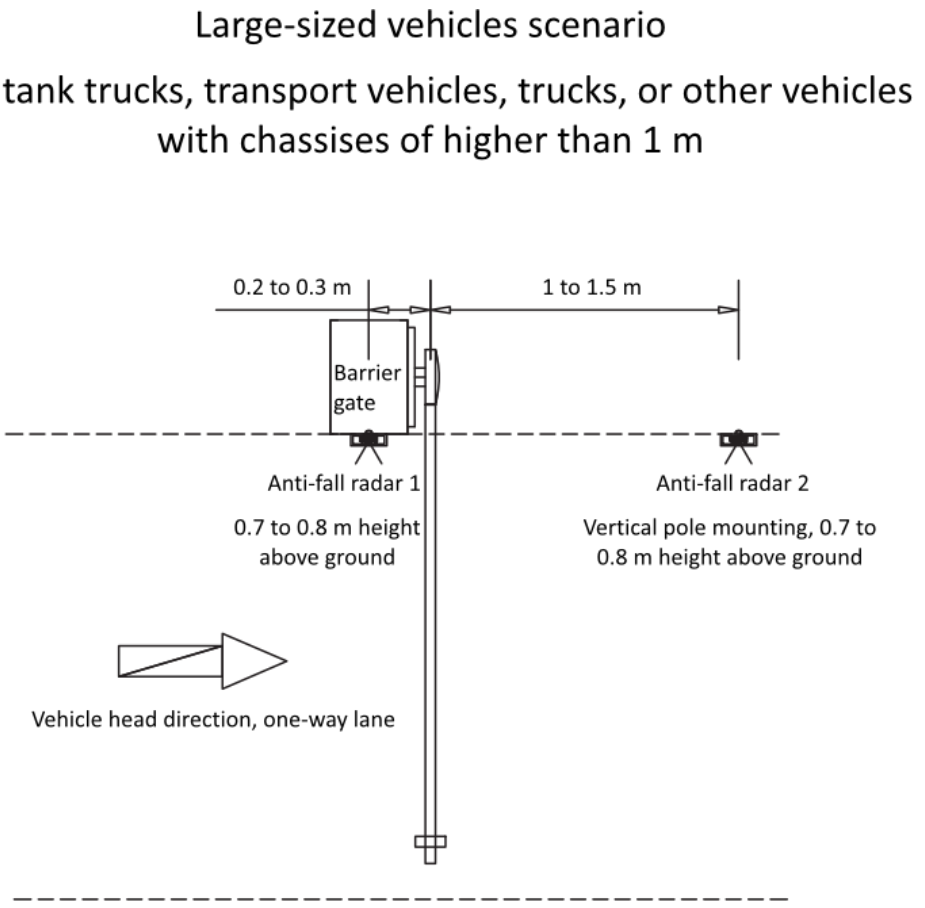


Figure 2-45 Large-Sized Vehicles Scenario

Scenario 3: Mixed Traffic

For mixed traffic scenario, such as the large-sized and small-sized vehicles are mixing, install the radar according to the figure shown below.

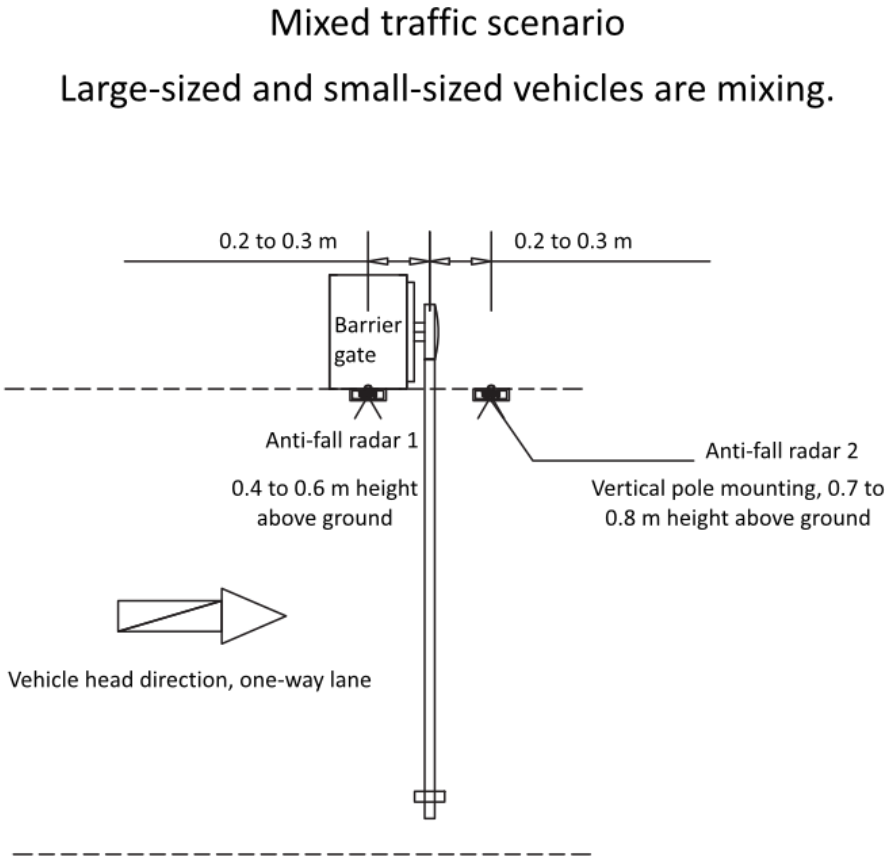


Figure 2-46 Mixed Traffic Scenario

2.4.6 Connect to Vehicle Detector

Vehicle Detector Wiring

Connect the Induction+ and Induction- interfaces of the barrier gate to the vehicle detector.

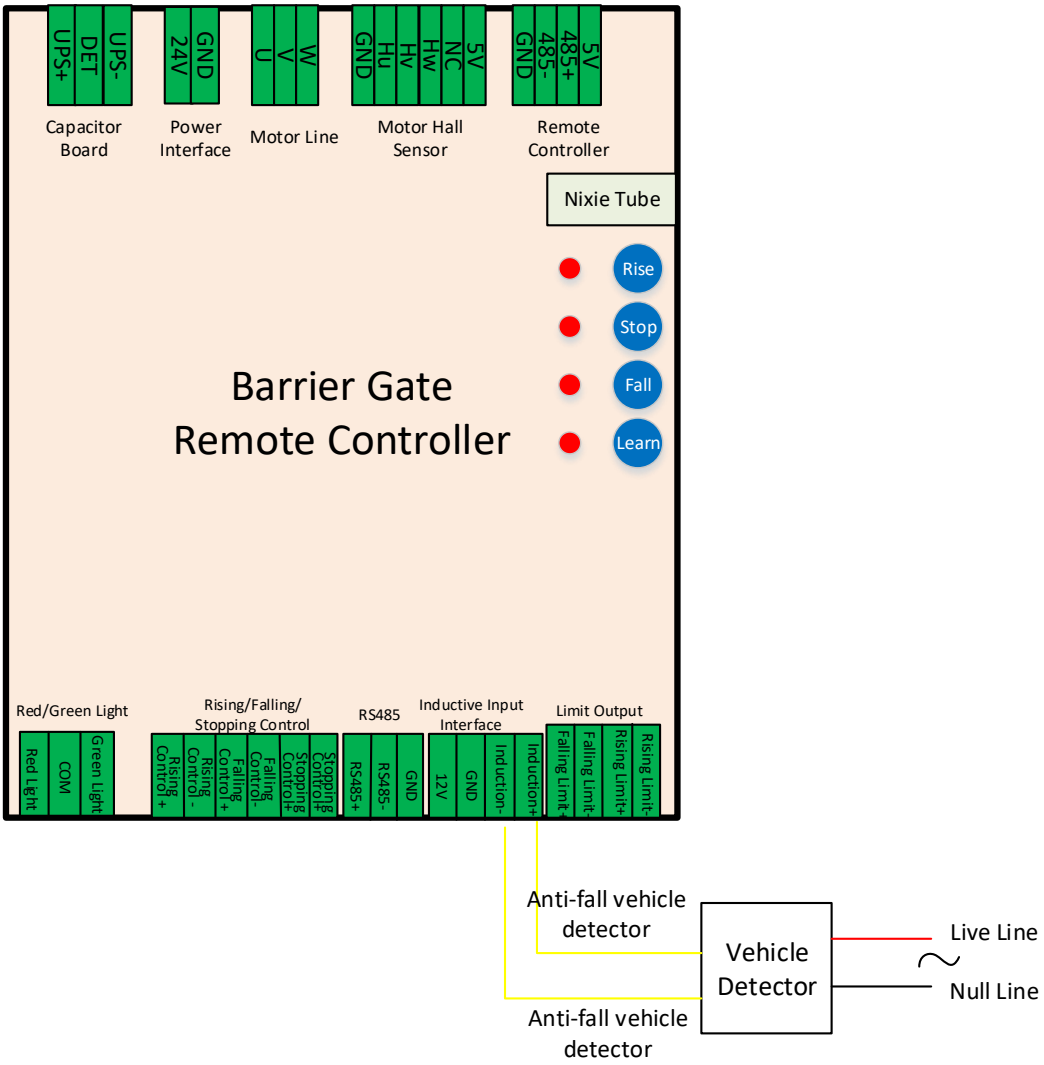


Figure 2-47 Connect to Vehicle Detector

Vehicle Detector Installation Instructions

The general width of the vehicle detector is 1 m. If there are large-sized vehicles passing in the scenario, widen the width to 1.5 m.

The anti-fall vehicle detector should be installed behind the barrier gate to avoid that the boom pole falls down and smashes the vehicle after the vehicle passes the vehicle detector and the signal disappears.

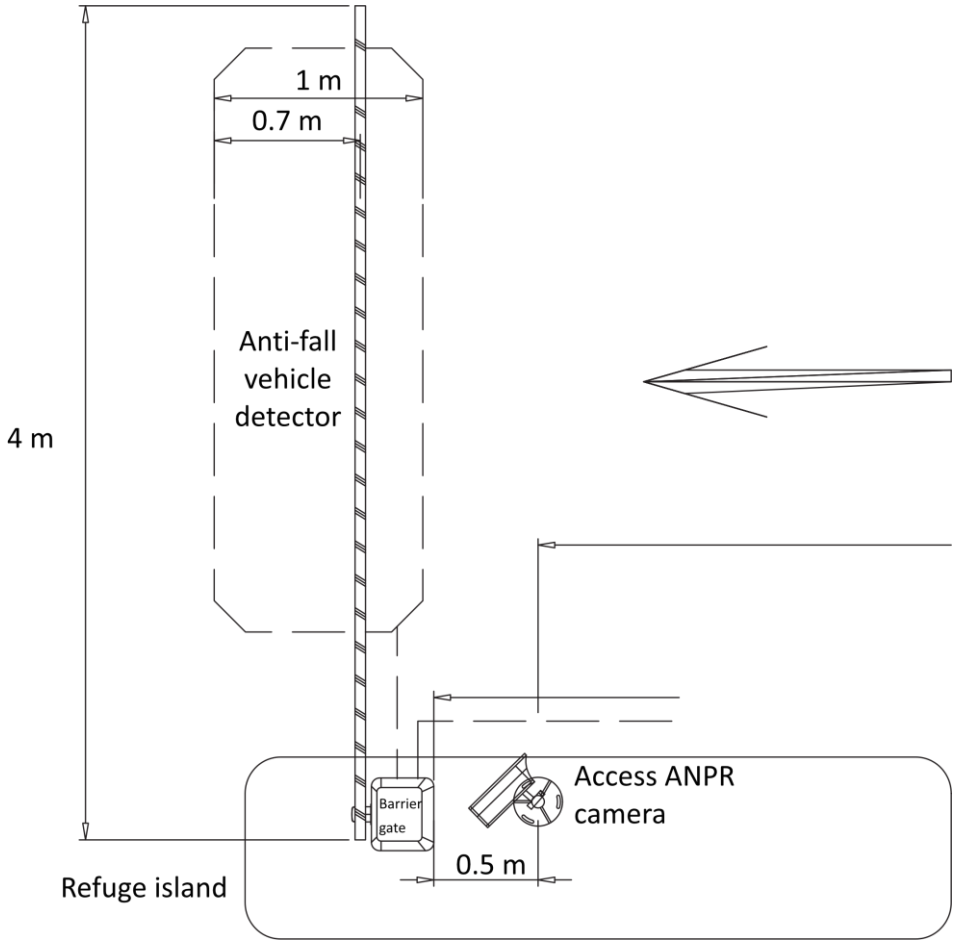


Figure 2-48 Vehicle Detector Installation

2.4.7 Connect to Active Infrared Intrusion Detector

Connect the Induction+ interface of the barrier gate to the COM interface of the active infrared intrusion detector, and the Induction- interface of the barrier gate to the OUT interface of the active infrared intrusion detector.

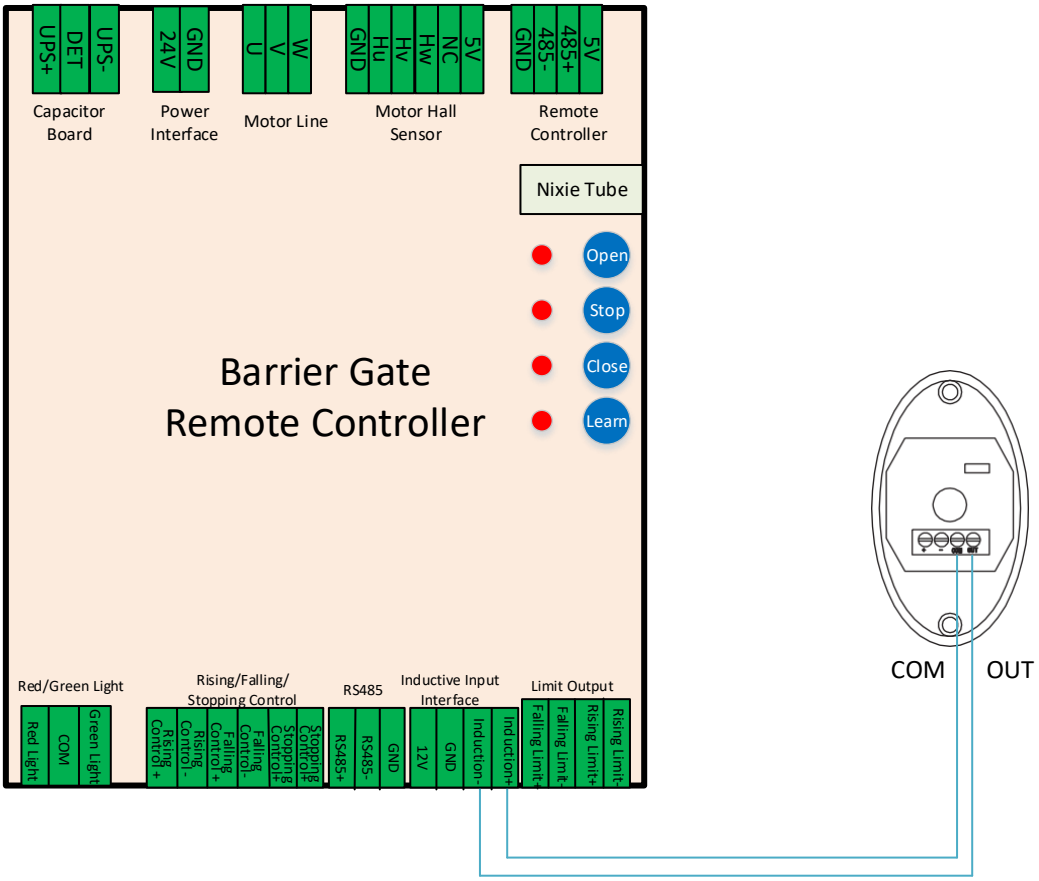


Figure 2-49 Connect to Active Infrared Intrusion Detector

2.4.8 Connect to Arrow Indicator

Connect the arrow indicator to the barrier gate as shown below.

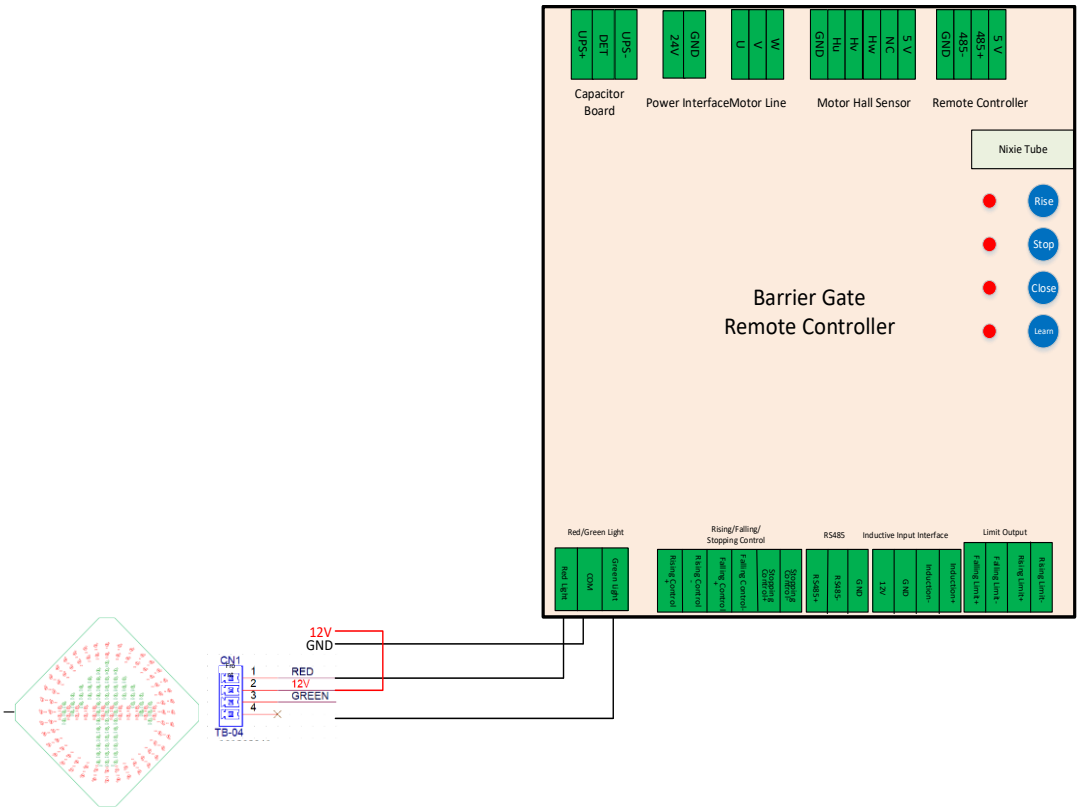


Figure 2-50 Connect to Arrow Indicator

2.4.9 Connect to Strip Light

For the boom pole with strip light, connect the strip light to the barrier gate as shown below.

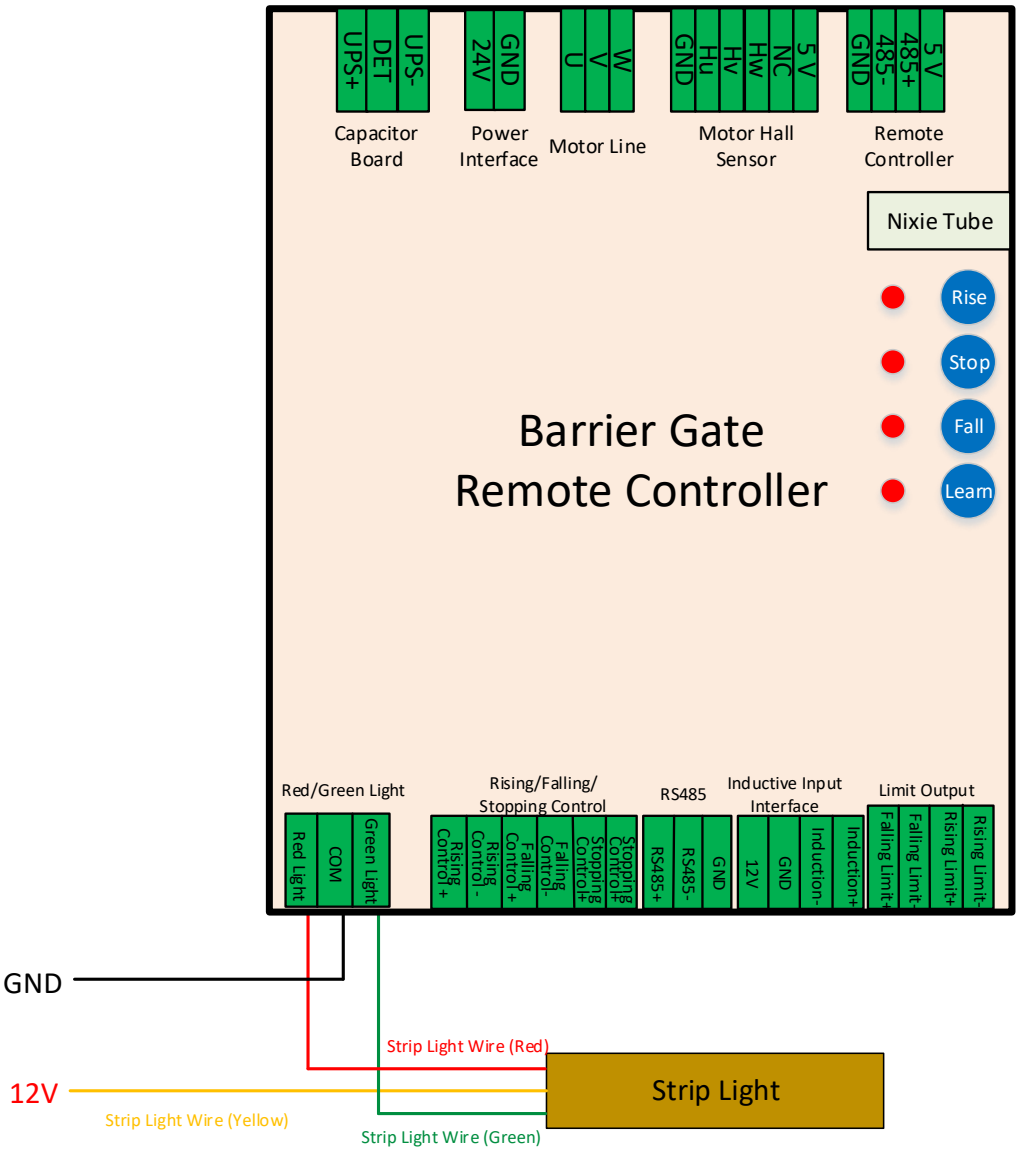


Figure 2-51 Connect to Strip Light

2.4.10 Connect to Warning Light

For the barrier gate with a warning light on the top of host, connect the warning light to the barrier gate as shown below.

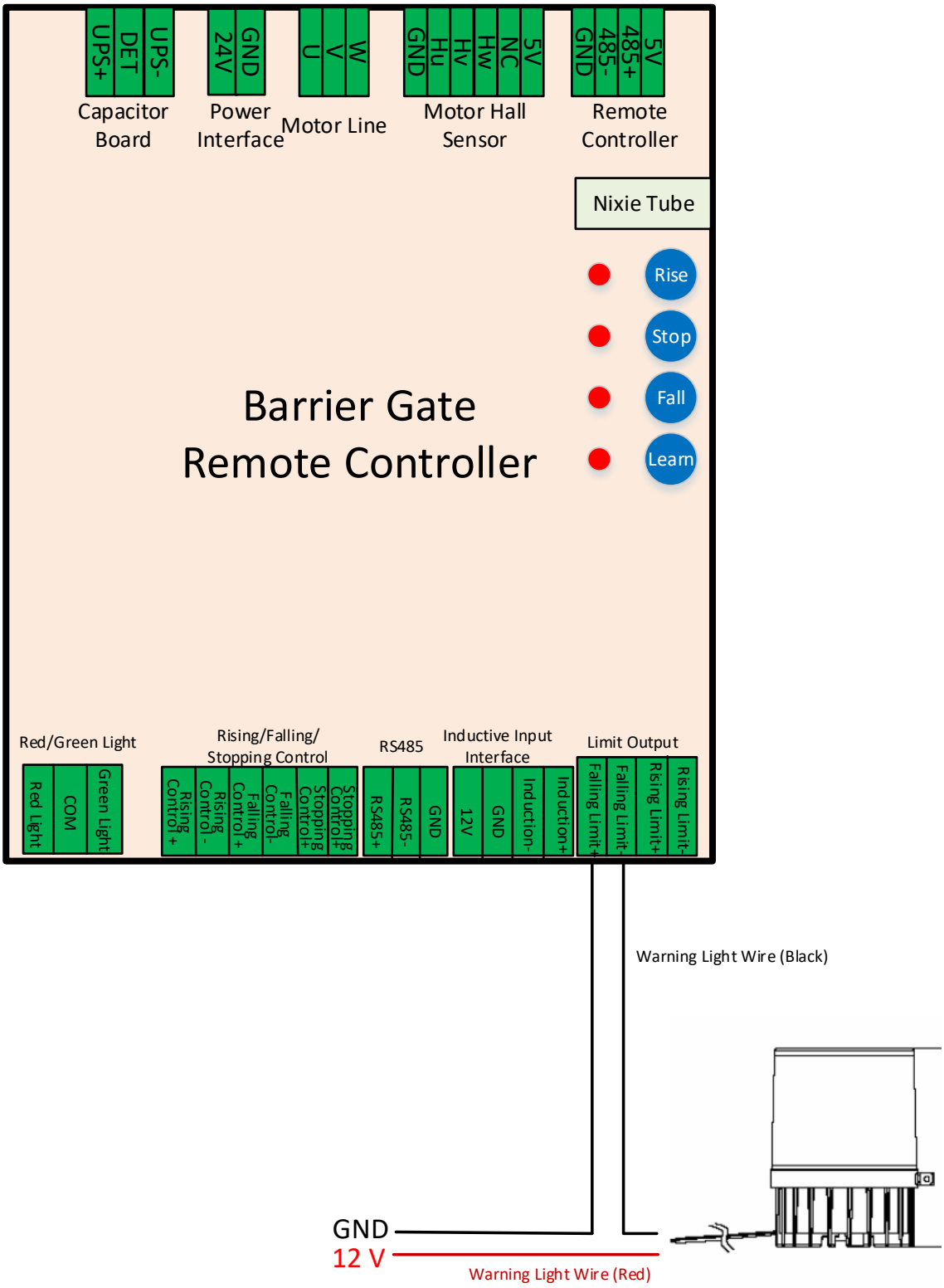


Figure 2-52 Connect to Warning Light

Chapter 3 Parameters Configuration

After the installation completes, power on the barrier gate, and it will operate self-check of rising to limit position. After the self-check completes, you can control the barrier gate via remote controller or buttons.

3.1 Remote Control

After the self-check completes, you can control the boom pole to rise, fall, and stop via the remote controller leaving factory with the barrier gate.

3.2 Set Parameters via Control Board Buttons

3.2.1 Button Description

Open the front cover of the host, and you can see the control board buttons and nixie tube. You can control the barrier gate via the buttons and judge the status via the nixie tube.
There is respective initial status for the rising limit position, falling limit position, and rising speed of the barrier gate. You can adjust them via buttons if the initial status cannot meet the requirements of the installation site.

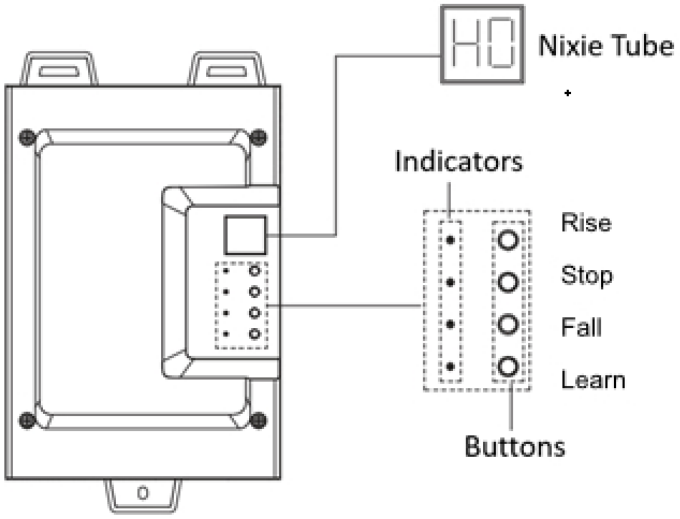


Figure 3-1 Control Buttons

Note

- If you need to hold the buttons to trigger operations, hold for 3 seconds or above.
- The nixie tube shows the status (e.g., H0) and fault codes (hexadecimal characters, e.g., 1A). If

the fault codes appear on the nixie tube, it means there is operation error. Contact the technical personnel of our company to solve the problems.

3.2.2 Operation Procedure

Refer to the table below for the description of the value on the nixie tube.

Table 3-1 Nixie Tube Value Description

Value	Description
H0	The boom pole is in the rising limit position. Enter into the learning mode.
H1	To adjust the limit position distance of the boom pole. Refer to *Adjust Limit Position Distance of Boom Pole* for details.
H4	To set the remote controller learning. Refer to *Set Remote Controller Learning* for details.
H6	To enable the auto falling function of boom pole. Refer to *Enable Auto Falling of Boom Pole* for details.
H7	To set the auto falling time of boom pole. Refer to *Set Auto Falling Time of Boom Pole* for details.
H8	To enable the function of locking barrier gate via the remote controller. Refer to *Enable Locking Barrier Gate via Remote Controller* for details.
Hb	To set the boom pole type. Refer to *Set Boom Pole Type* for details.
HC	To set the left/right direction of boom pole. Refer to *Set Left/Right Direction of Boom Pole* for details.
Hd	To set the self-learning mode when the device is powered on. Refer to *Set Self-Learning when Powered on* for details.
HE	To set the warning light mode. Refer to *Set Warning Light Mode* for details.

Note

H2/H3/H5/H9/HA functions are unavailable.

Set Remote Controller Learning

Steps

1. Press the **Rise** button on the remote controller, press the **Rise** button on the control board, or power on the device to adjust the boom pole to the rising limit position.
2. Hold the **Learn** button on the control board until “H0” appears on the nixie tube.

3. Press the **Rise**/**Fall** button on the control board to increase/decrease the value on the nixie tube. Adjust the value to “H4”.
4. Hold the **Learn** button on the control board until “PA” appears on the nixie tube.
5. Press the **Learn** button on the control board, or press the **Rise**, **Fall**, and **Stop** buttons on the remote controller in sequence to save the settings.
6. Press the **Rise**, **Fall**, and **Stop** buttons on the remote controller in sequence until “00” appears on the nixie tube. Learning completed.
7. (Optional) If you want to unpair the remote controller, hold the **Stop** button on the control board until “H4” appears on the nixie tube.
8. Press the **Learn** button on the control board to save the settings. “H4” will appear on the nixie tube.

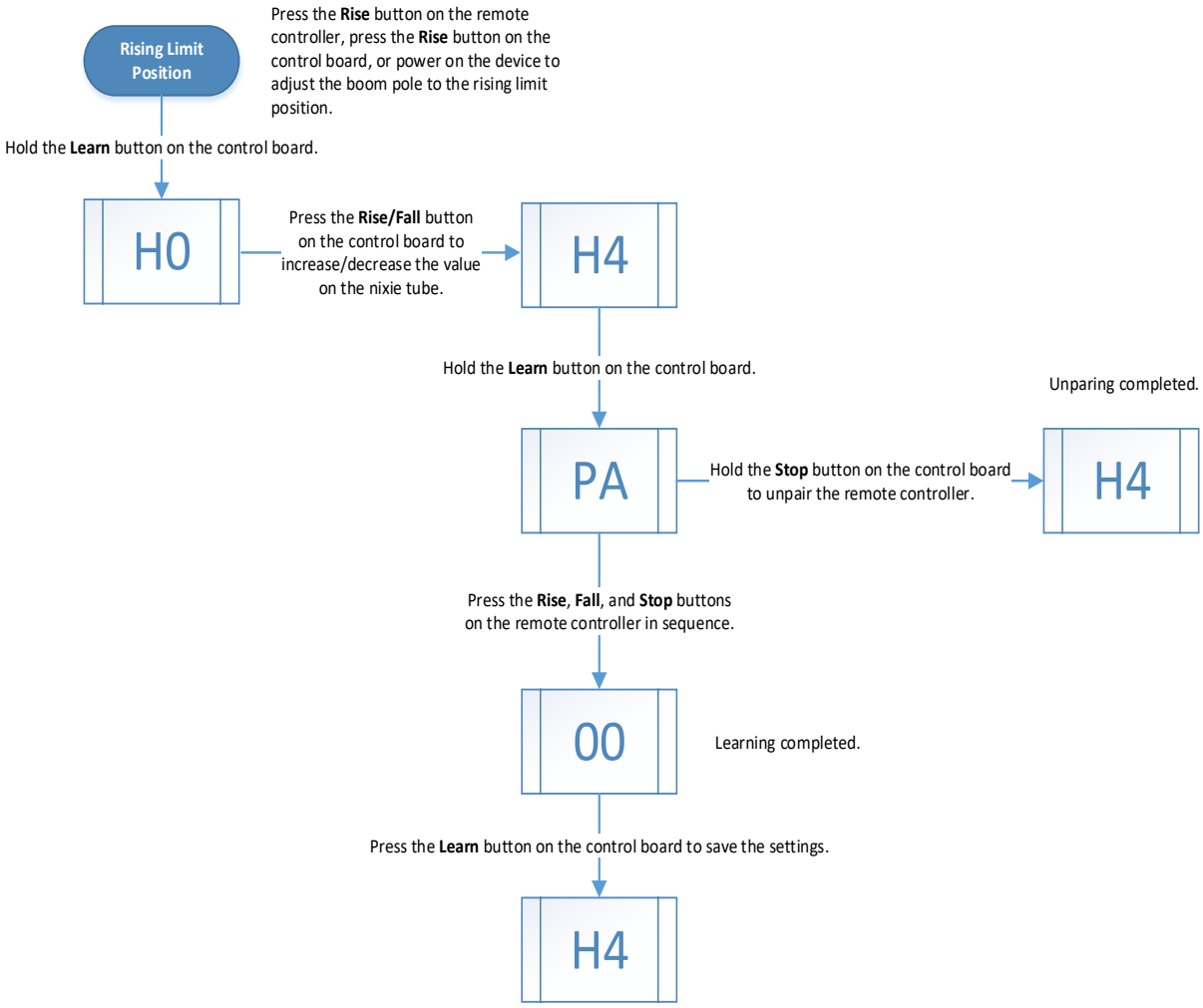


Figure 3-2 Set Remote Controller Learning

Enable Auto Falling of Boom Pole

Steps

1. Press the **Rise** button on the remote controller, press the **Rise** button on the control board, or power on the device to adjust the boom pole to the rising limit position.
2. Hold the Learn button on the control board until “H0” appears on the nixie tube.

3. Press the **Rise**/**Fall** button on the control board to increase/decrease the value on the nixie tube. Adjust the value to “H6”.
4. Hold the **Learn** button on the control board to enter the menu settings.
5. Press the **Rise**/**Fall** button on the control board to adjust the value on the nixie tube.

Note

Adjust the value to 1 to enable the auto falling function, and 0 to disable the function.

6. Press the **Learn** button on the control board to save the settings. “H6” will appear on the nixie tube.

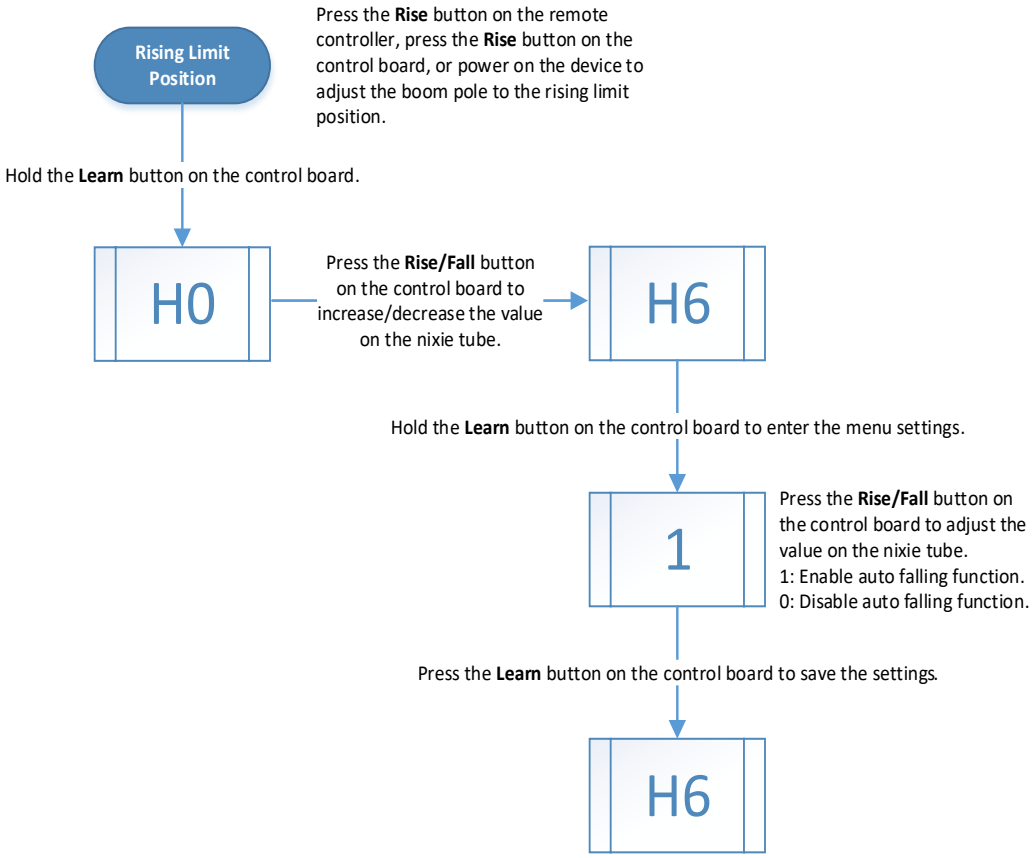


Figure 3-3 Enable Auto Falling of Boom Pole

Set Auto Falling Time of Boom Pole

Steps

1. Press the **Rise** button on the remote controller, press the **Rise** button on the control board, or power on the device to adjust the boom pole to the rising limit position.
2. Hold the Learn button on the control board until “H0” appears on the nixie tube.
3. Press the **Rise**/**Fall** button on the control board to increase/decrease the value on the nixie tube. Adjust the value to “H7”.
4. Hold the **Learn** button on the control board to enter the menu settings.
5. Press the **Rise**/**Fall** button on the control board to adjust the value on the nixie tube.

Note

The actual auto falling time of the boom pole after the vehicle passes = the value shown on the nixie tube × 10 s. E.g., the value shown on the nixie tube is 3. Thus the actual auto falling time is 30 s.

6. Press the **Learn** button on the control board to save the settings. “H7” will appear on the nixie tube.

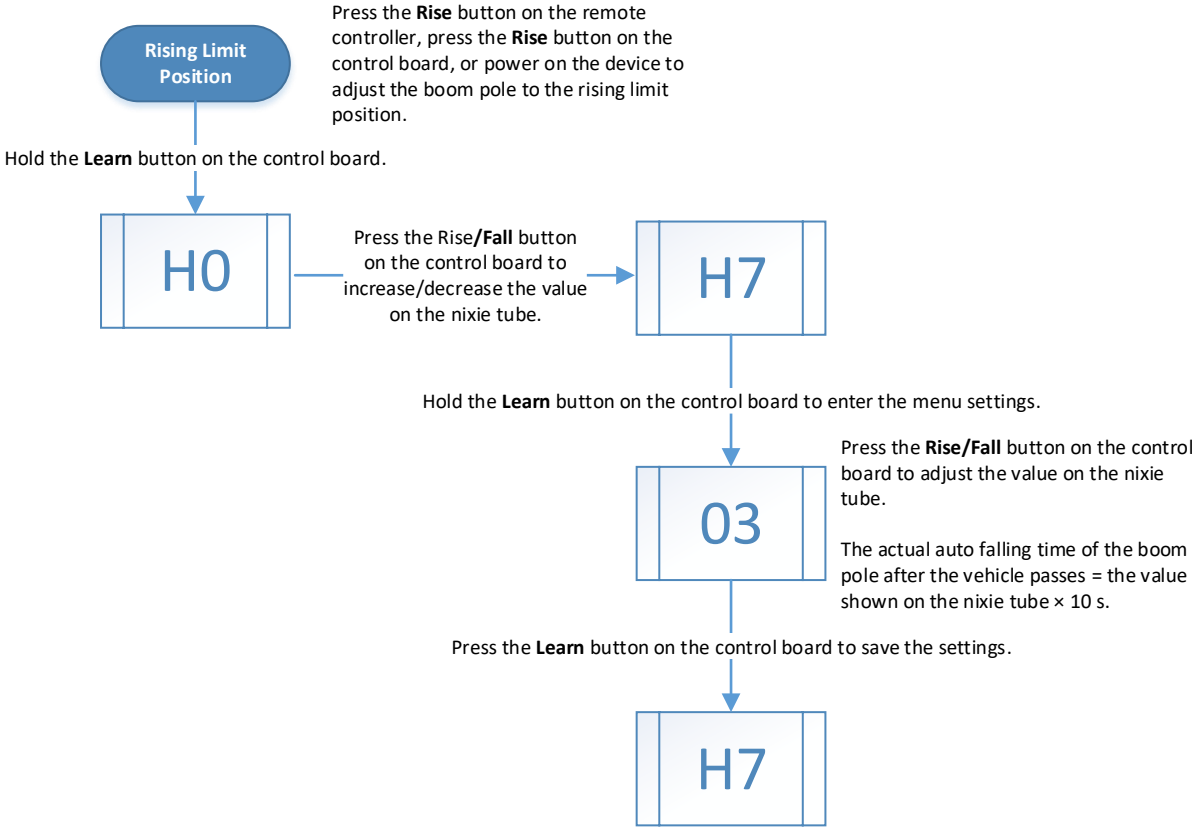


Figure 3-4 Set Auto Falling Time of Boom Pole

Adjust Limit Position Distance of Boom Pole

Steps

1. Press the **Fall** button on the remote controller or press the **Fall** button on the control board to adjust the boom pole to the falling limit position, and “H1” will appear on the nixie tube.
2. Hold the **Learn** button on the control board. Then press the **Rise**/**Fall** button on the control board to increase/decrease the value on the nixie tube.

Note

- The function is only valid for the boom pole of 5 m or above.
- If you press the **Rise** button, it means the motor rotation turns increase one. If you press the **Fall** button, it means the motor rotation turns reduce one.
- The value on the nixie tube means the number of motor rotation turns. E.g., if you press the **Rise** button on the control board to adjust the value to 5, it means the motor rotates 5 turns

away from the initial falling limit position.

3. Press the **Learn** button on the control board to save the settings. “00” will appear on the nixie tube.

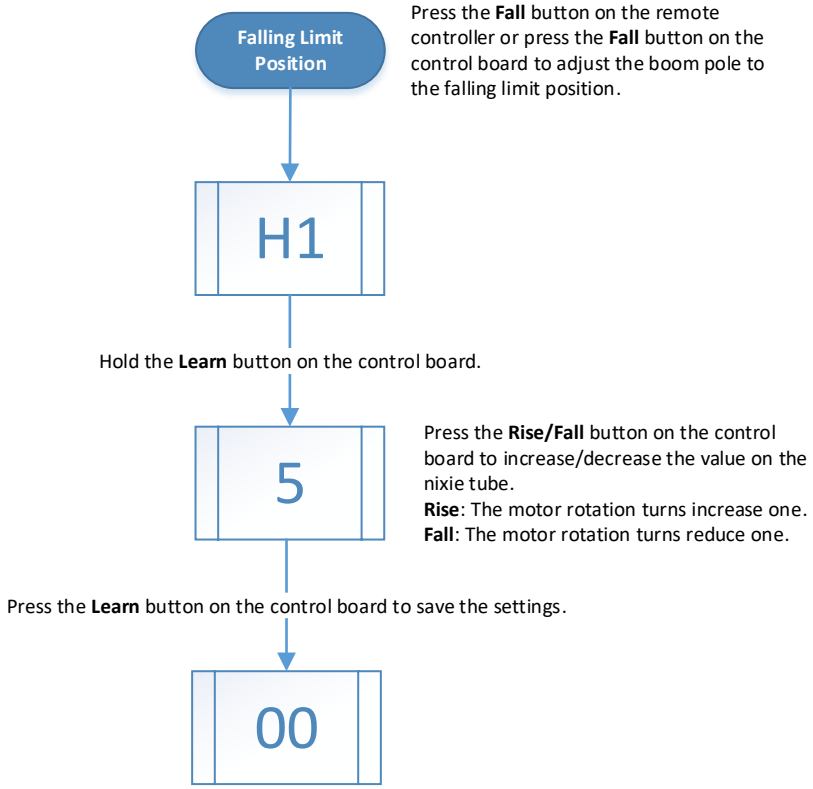


Figure 3-5 Adjust Limit Position Distance of Boom Pole

Enable Locking Barrier Gate via Remote Controller

Steps

1. Press the **Rise** button on the remote controller, press the **Rise** button on the control board, or power on the device to adjust the boom pole to the rising limit position.
2. Hold the **Learn** button on the control board until “H0” appears on the nixie tube.
3. Press the **Rise**/**Fall** button on the control board to increase/decrease the value on the nixie tube. Adjust the value to “H8”.
4. Hold the **Learn** button on the control board to enter the menu settings.
5. Press the **Rise**/**Fall** button on the control board to adjust the value on the nixie tube.

Note

Adjust the value to 1 to enable locking barrier gate via the remote controller, and 0 to disable the function.

6. Press the **Learn** button on the control board to save the settings. “H8” will appear on the nixie tube.

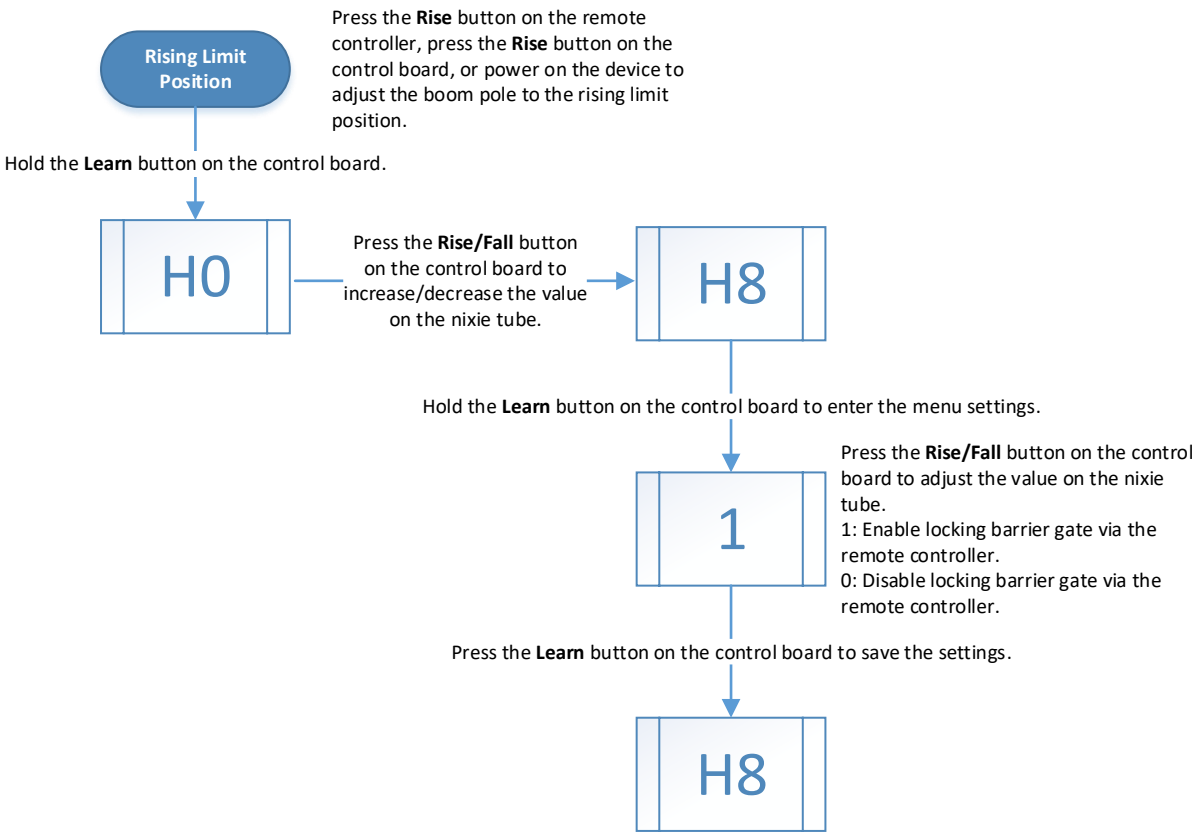


Figure 3-6 Enable Locking Barrier Gate via Remote Controller

Lock Barrier Gate

Steps

1. Press the **Rise** button on the remote controller, press the **Rise** button on the control board, or power on the device to adjust the boom pole to the rising limit position.
2. Hold the **Learn** button on the control board until “H0” appears on the nixie tube.
3. Hold the **Learn** button again on the control board until “Lr” appears on the nixie tube.
4. After the learning process completes, “00” will appear on the nixie tube.

Note

If there is any fault, “06” will appear on the nixie tube. Refer to FAQ for the troubleshooting.

5. Lock the barrier gate via two modes.
   - Lock the barrier gate via the camera until “Lc” appears on the nixie tube. The operation can take effect after 3 s or above.
   - Lock the barrier gate via the remote controller. Press the **Rise**, **Stop**, and **Rise** buttons on the remote controller in sequence until “rL” appears on the nixie tube.

Note

If you want to unlock the barrier gate, you can only unlock via the remote controller. Press the **Rise**, **Stop**, and **Rise** buttons on the remote controller in sequence to unlock the barrier gate.

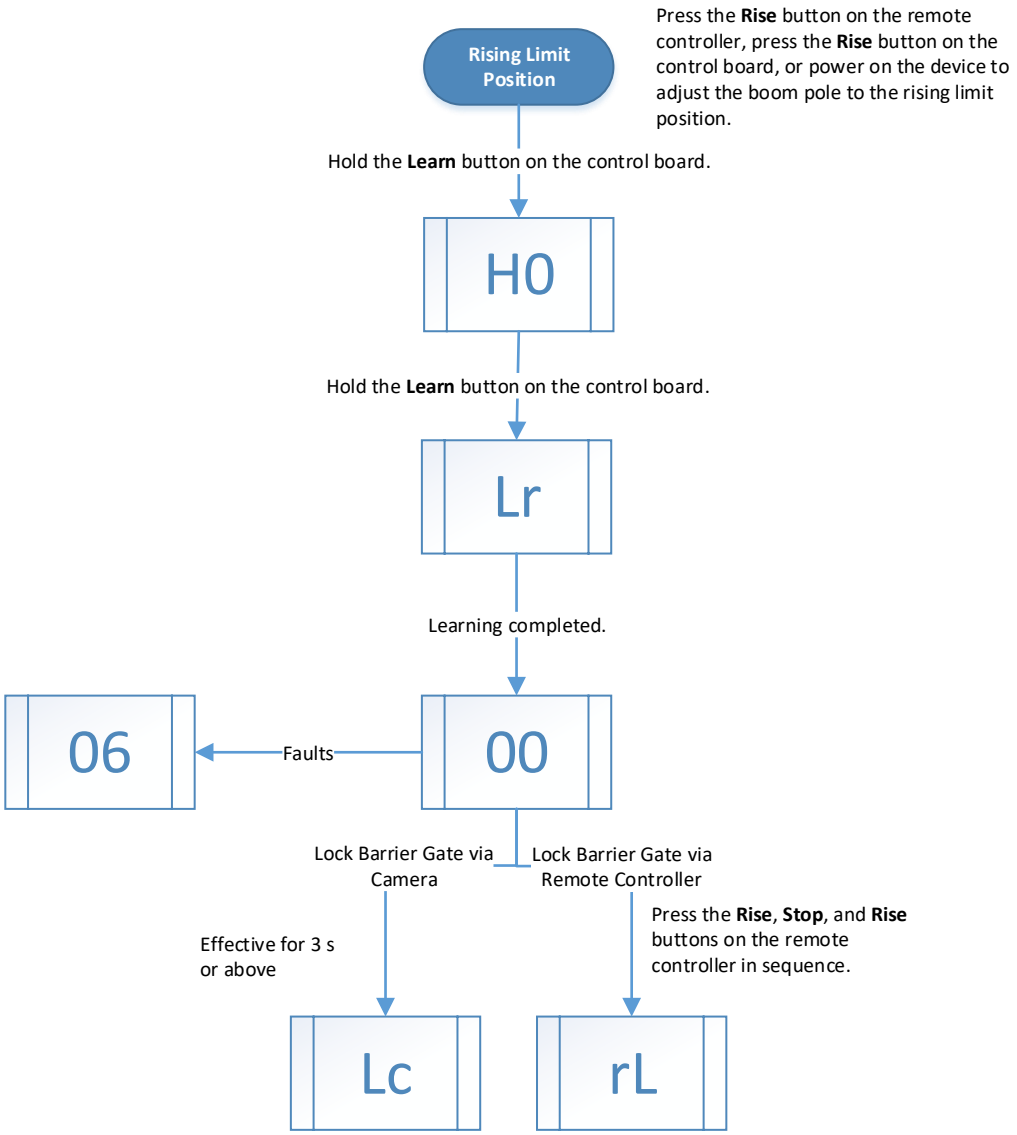


Figure 3-7 Lock Barrier Gate

Set Boom Pole Type

Steps

1. Press the **Rise** button on the remote controller, press the **Rise** button on the control board, or power on the device to adjust the boom pole to the rising limit position.
2. Hold the Learn button on the control board until “H0” appears on the nixie tube.
3. Press the **Rise**/**Fall** button on the control board to increase/decrease the value on the nixie tube. Adjust the value to “Hb”.
4. Hold the **Learn** button on the control board to enter the menu settings.
5. Press the **Rise**/**Fall** button on the control board to adjust the value on the nixie tube.

Note

Refer to Table 3-1 for the value description.

6. Press the **Learn** button on the control board to save the settings. “Hb” will appear on the nixie tube.

Table 3-2 Boom Pole Type Value Description

Value	Boom Pole Type
2	2 m straight boom pole
3	3 m straight boom pole
4	4 m straight boom pole
5	5 m straight boom pole
6	6 m straight boom pole
3F	3 m fence boom pole
4F	4 m fence boom pole
5F	5 m fence boom pole
3L	3 m boom pole with strip light
4L	4 m boom pole with strip light
4r	4 m round boom pole
3c	3 m folding boom pole
4c	4 m folding boom pole
5c	5 m folding boom pole

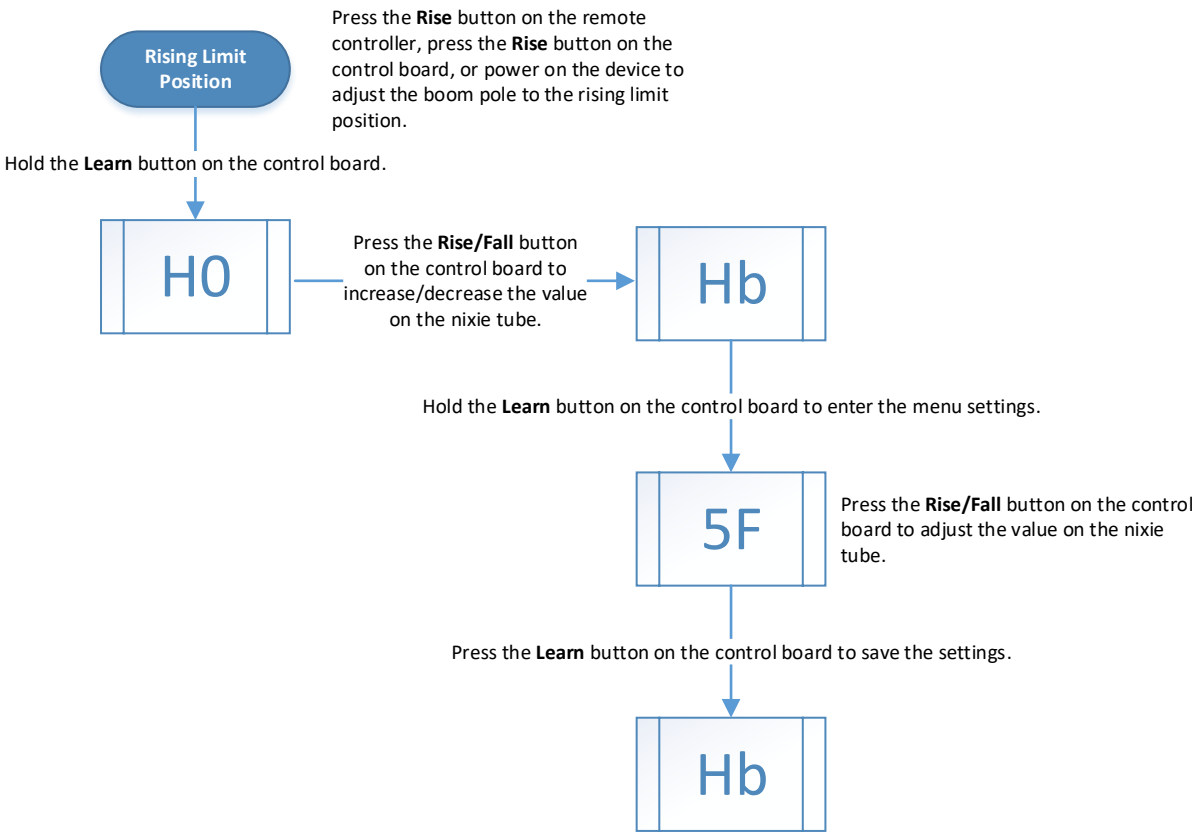


Figure 3-8 Set Boom Pole Type

Set Left/Right Direction of Boom Pole

Steps

1. Press the **Rise** button on the remote controller, press the **Rise** button on the control board, or power on the device to adjust the boom pole to the rising limit position.
2. Hold the Learn button on the control board until “H0” appears on the nixie tube.
3. Press the **Rise**/**Fall** button on the control board to increase/decrease the value on the nixie tube. Adjust the value to “HC”.
4. Hold the **Learn** button on the control board to enter the menu settings.
5. Press the **Rise**/**Fall** button on the control board to adjust the value on the nixie tube.

Note

Adjust the value to “L” to switch the boom pole to the left direction, and “r” to the right direction.

6. Press the **Learn** button on the control board to save the settings. “HC” will appear on the nixie tube.

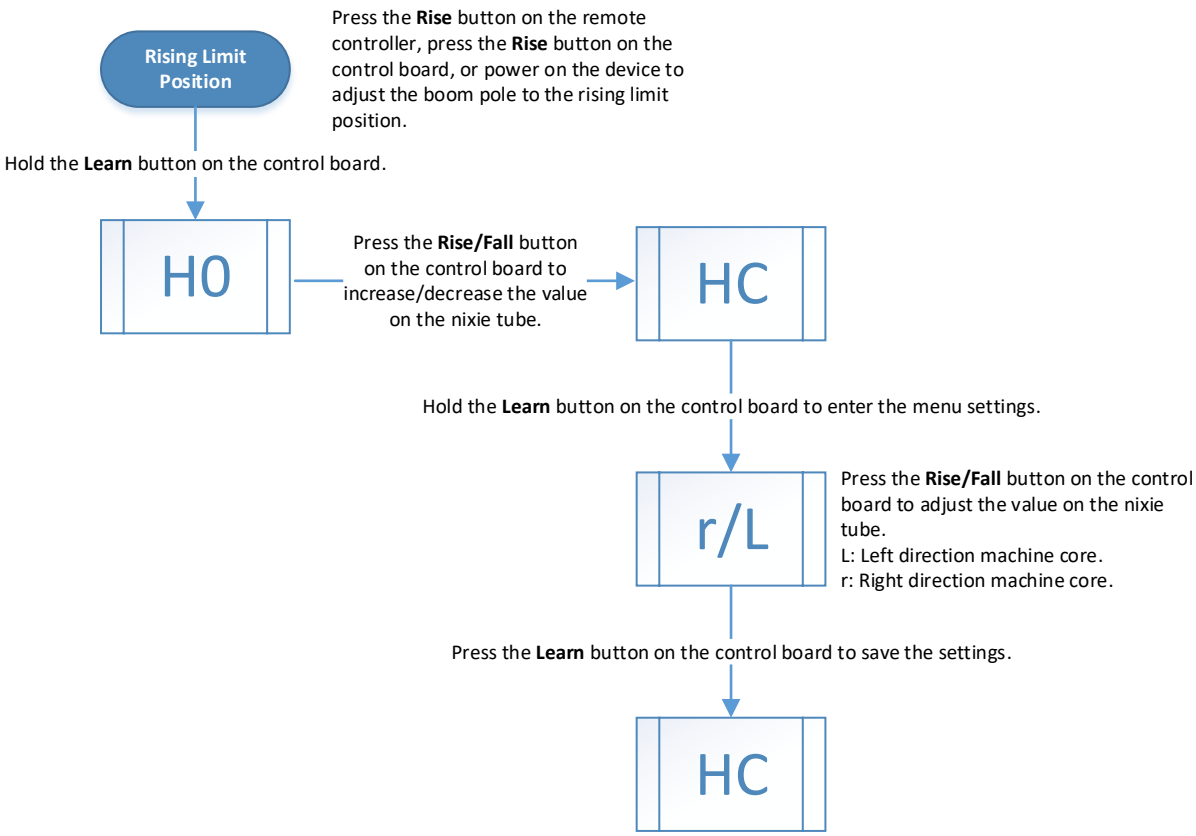


Figure 3-9 Set Left/Right Direction of Boom Pole

Set Self-Learning when Powered on

Steps

1. Press the **Rise** button on the remote controller, press the **Rise** button on the control board, or power on the device to adjust the boom pole to the rising limit position.
2. Hold the Learn button on the control board until “H0” appears on the nixie tube.
3. Press the **Rise**/**Fall** button on the control board to increase/decrease the value on the nixie tube. Adjust the value to “Hd”.
4. Hold the **Learn** button on the control board to enter the menu settings.
5. Press the **Rise**/**Fall** button on the control board to adjust the value on the nixie tube.

Note

“1” means to keep the boom pole status as fallen when the barrier gate is powered on. “0” means to learn the rising limit position when the barrier gate is powered on.

6. Press the **Learn** button on the control board to save the settings. “Hd” will appear on the nixie tube.

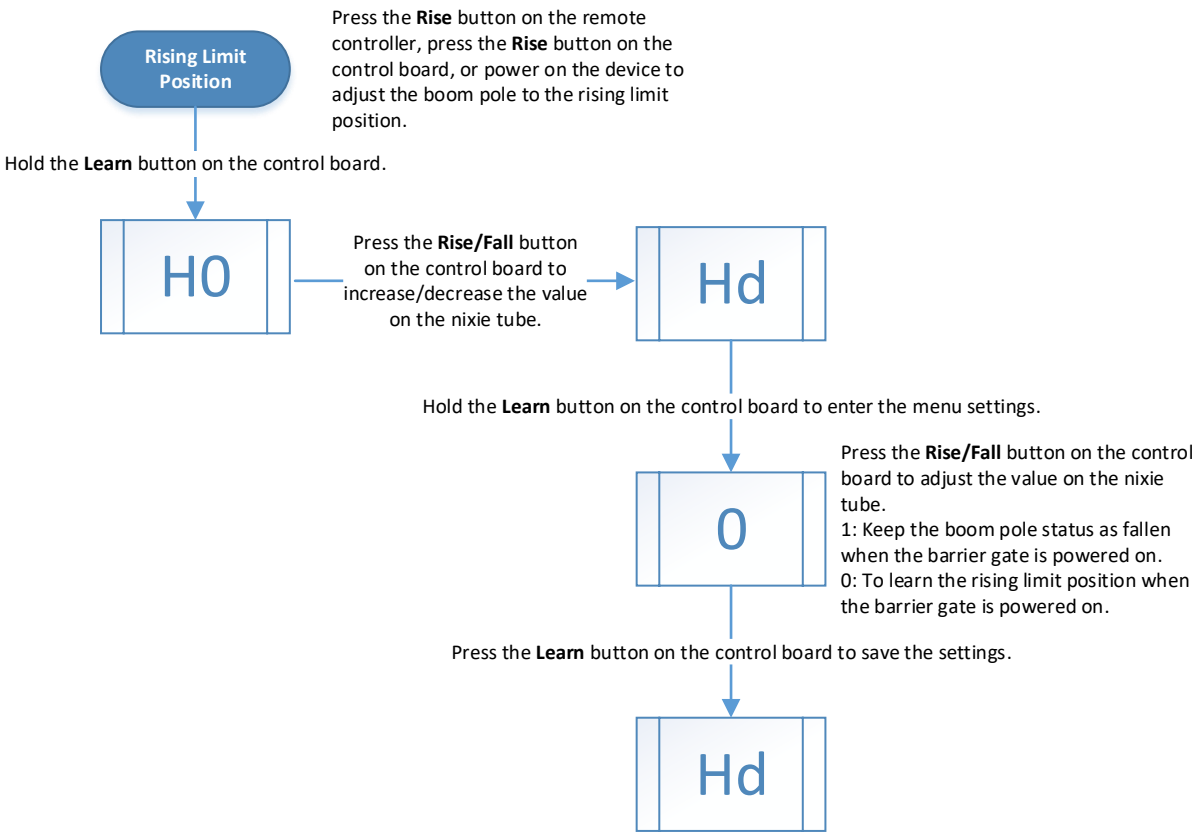


Figure 3-10 Set Self-Learning when Powered on

Set Warning Light Mode

Steps

1. Press the **Rise** button on the remote controller, press the **Rise** button on the control board, or power on the device to adjust the boom pole to the rising limit position.
2. Hold the Learn button on the control board until “H0” appears on the nixie tube.
3. Press the **Rise**/**Fall** button on the control board to increase/decrease the value on the nixie tube. Adjust the value to “HE”.
4. Hold the **Learn** button on the control board to enter the menu settings.
5. Press the **Rise**/**Fall** button on the control board to adjust the value on the nixie tube.

Note

“1” is the warning light mode. “0” is the falling limit output mode.

6. Press the **Learn** button on the control board to save the settings. “HE” will appear on the nixie tube.

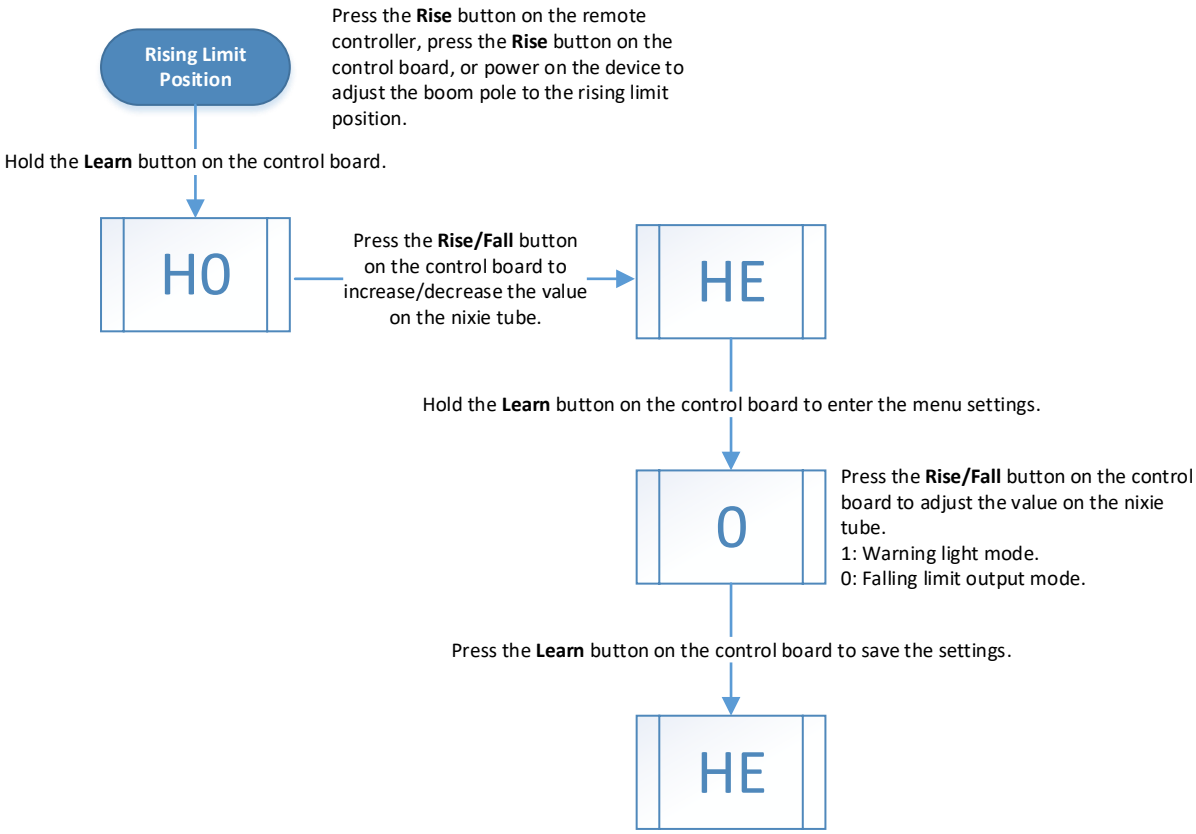


Figure 3-11 Set Warning Light Mode

Chapter 4 Maintenance

4.1 Adjust Boom Pole Balance

Adjust the balance of the boom pole.

Steps

1. Cut off the power supply. Rotate the hand wheel of the machine core to raise the boom pole to the position where the angle between the boom pole and the ground surface is 20° ± 5°.
2. Release the hand wheel to check if the boom pole can return to the position where the angle between the boom pole and the ground surface is 60° ± 15° naturally.

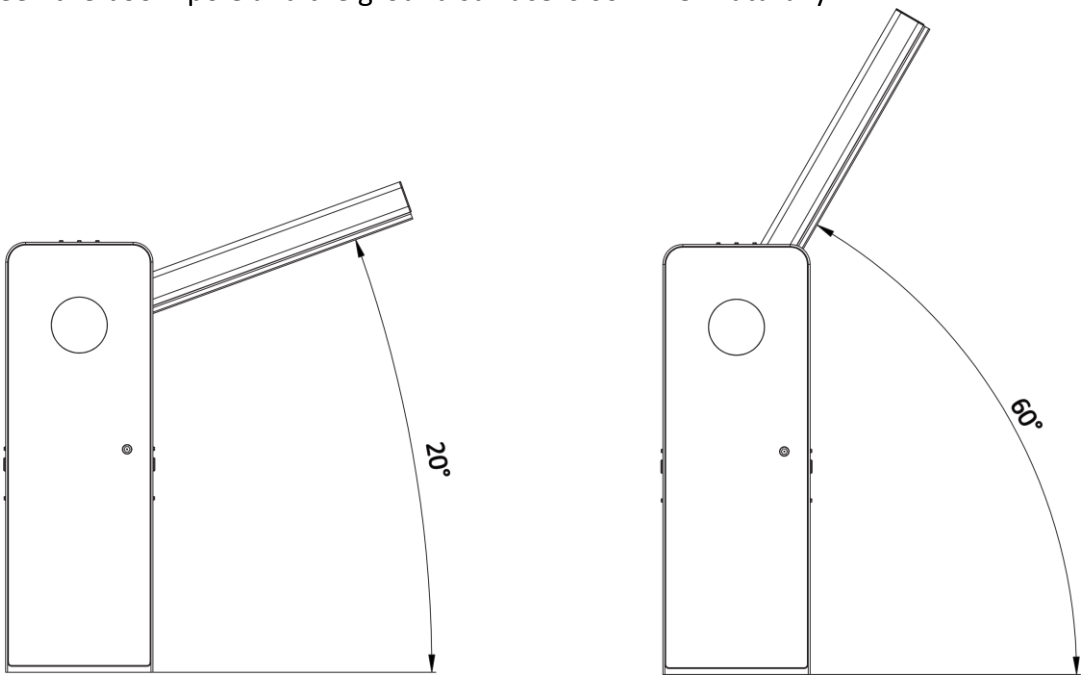


Figure 4-1 Adjust Boom Pole Balance

4.2 Change Boom Pole

Caution

Contact the professional technical personnel to change the boom pole. You may damage the barrier gate if you change it by yourself.

Before you start

Cut off the power supply, and adjust the boom pole to the falling limit position.

Steps

1. Unscrew the cap nuts, spring washers, and flat washers on the other sides of the four assembling bolts. Save the components and parts for the following installations.
2. Disassemble the boom pole and chuck.
3. Repeat the boom pole installation procedure to install a new boom pole.

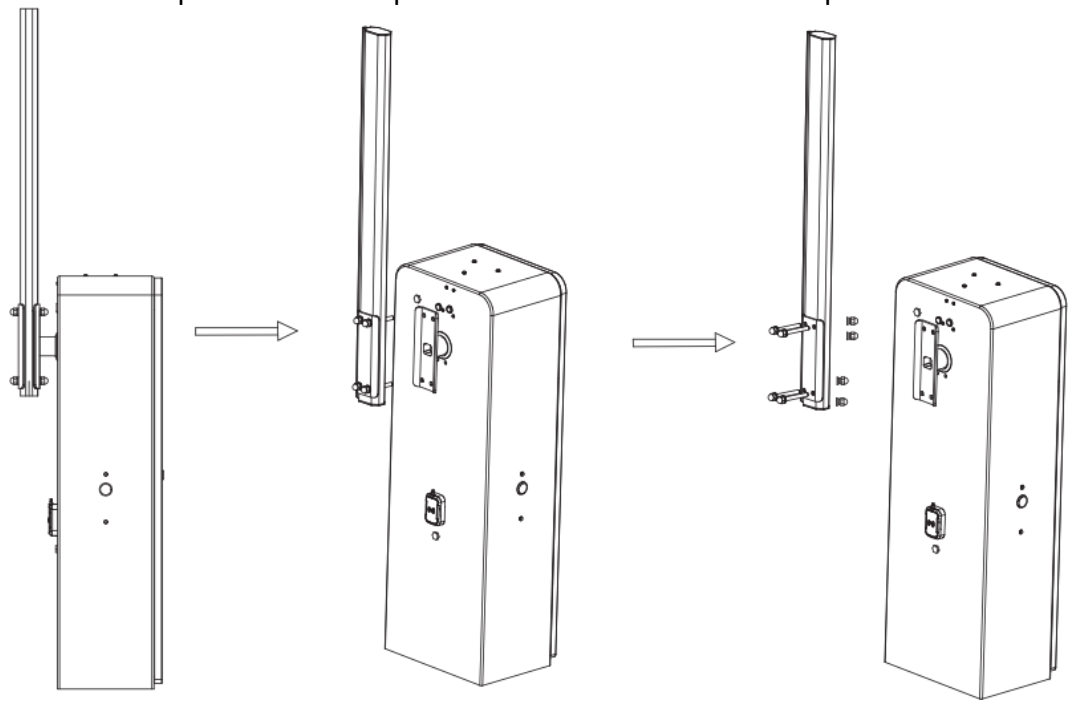


Figure 4-2 Change Boom Pole

4.3 Change Spindle Rod and Spring

4.3.1 Spring and Spindle Rod Specifications

If you need to change the boom pole, prepare the corresponding springs and spindle rods according to the boom pole types. Refer to the table below for details.

Table 4-1 Spring and Spindle Rod Specifications

Boom Pole Type	Spring	Spindle Rod
2 m octagonal straight boom pole	Small spring with green hook × 1	Small octagonal boom pole spindle rod
3 m octagonal straight boom pole	Medium spring with white hook × 1	Small octagonal boom pole spindle rod
4 m octagonal straight boom pole	Small spring with green hook × 2	Small octagonal boom pole spindle rod

5 m octagonal straight boom pole	Large spring with red hook × 1	Large octagonal boom pole spindle rod
6 m octagonal straight boom pole	Small spring with green hook × 1 Large spring with red hook × 1	Large octagonal boom pole spindle rod
3 m fence boom pole	Medium spring with white hook × 2	Large octagonal boom pole spindle rod
4 m fence boom pole	Small spring with green hook × 1 Large spring with red hook × 1	Large octagonal boom pole spindle rod
5 m fence boom pole	Large spring with red hook × 2	Large octagonal boom pole spindle rod
1.5 m + 1.5 m folding boom pole	Medium spring with white hook × 1	Small octagonal boom pole spindle rod
2.5 m + 2.5 m folding boom pole	Large spring with red hook × 1	Small octagonal boom pole spindle rod
2 m anti-collision cylinder boom pole	Small spring with green hook × 1	Anti-collision round boom pole spindle rod
3 m anti-collision cylinder boom pole	Medium spring with white hook × 1	Anti-collision round boom pole spindle rod
4 m anti-collision cylinder boom pole	Small spring with green hook × 1 Medium spring with white hook × 1	Anti-collision round boom pole spindle rod
4 m boom pole with strip light	Small spring with green hook × 1 Medium spring with white hook × 1	Spindle rod for boom pole with strip light
3 m boom pole with strip light	Medium spring with white hook × 1	Spindle rod for boom pole with strip light

4.3.2 Change Spindle Rod

Before you start

Cut off the power supply, and adjust the boom pole to the falling limit position.

Steps

1. Unscrew the cap nuts, spring washers, and flat washers on the other sides of the four assembling bolts. Save the components and parts for the following installations.

2. Disassemble the boom pole and chuck.

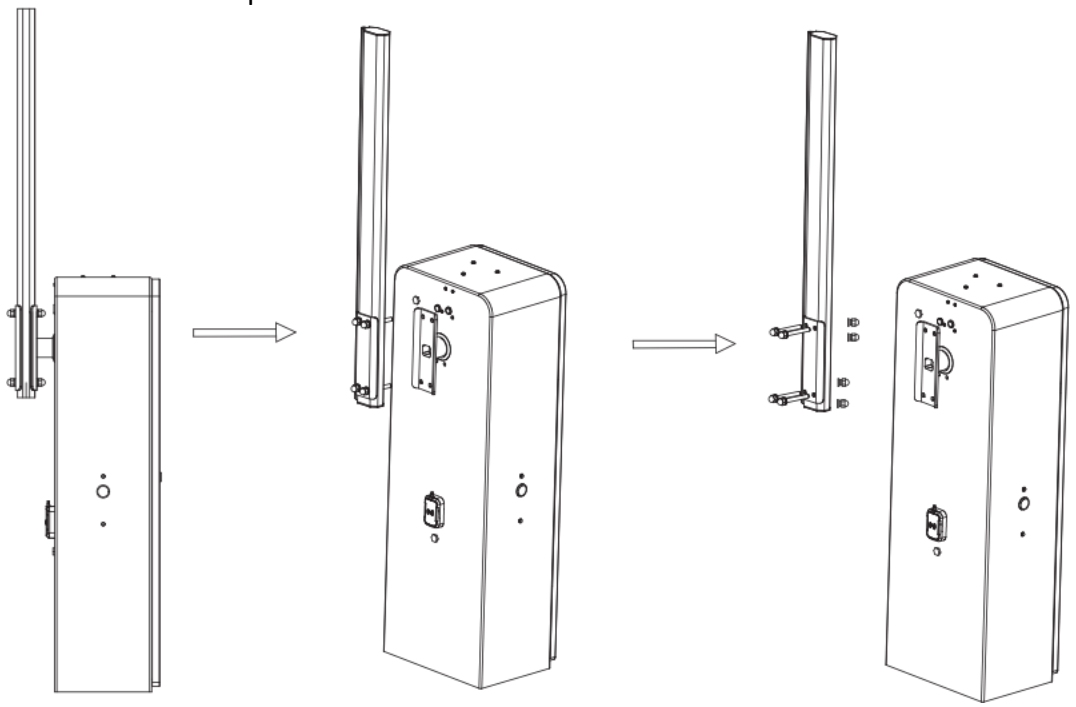


Figure 4-3 Disassemble Boom Pole and Chuck

3. Unscrew the M12 fixing bolt of the spindle rod anticlockwise with a 10 mm hex wrench, and disassemble the bolt.

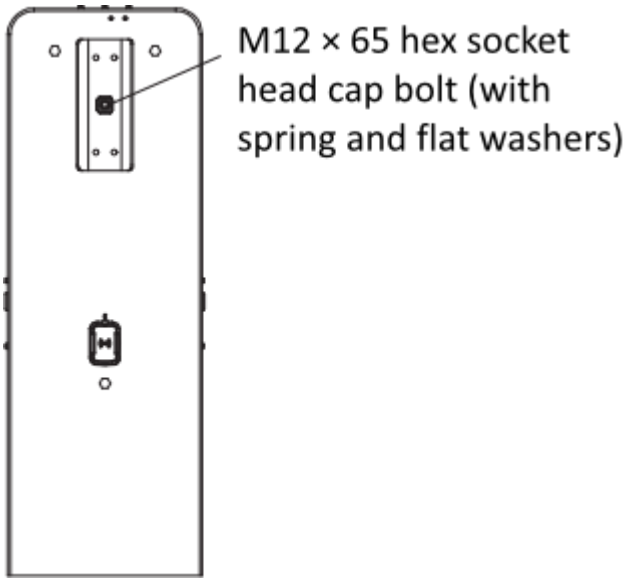


Figure 4-4 Disassemble Bolt

4. Disassemble the spindle rod and change a new one. Install the M12 fixing bolt of the spindle rod, and fasten it with a torque no smaller than 60 NM.

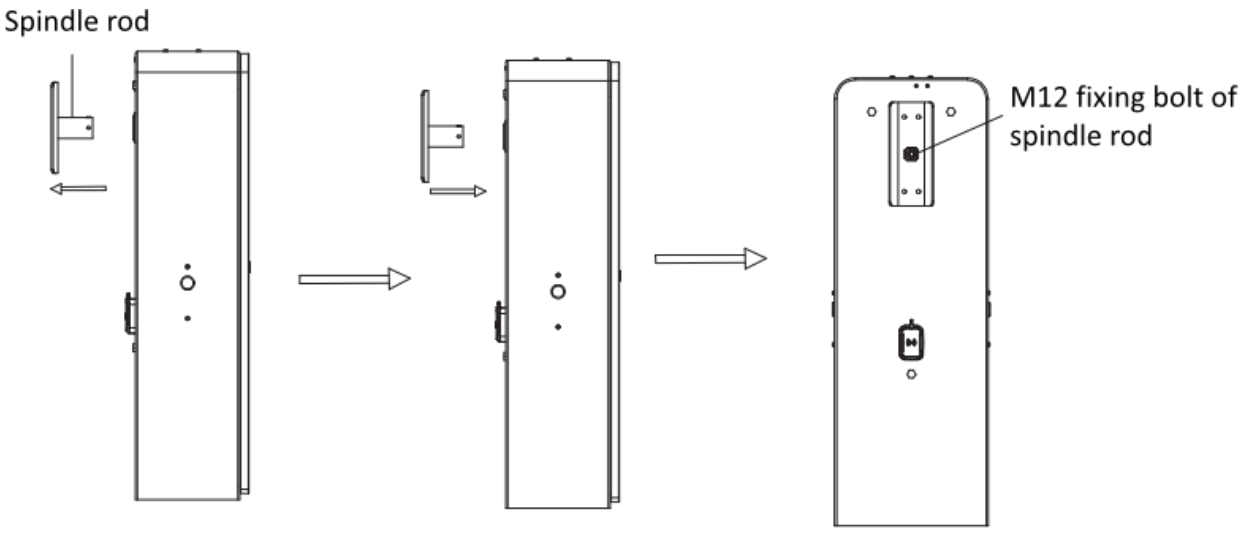


Figure 4-5 Change Spindle Rod

5. Repeat the boom pole installation procedure to install a new boom pole.

4.3.3 Change Spring

Before you start

Cut off the power supply, and adjust the boom pole to the rising limit position.

Steps

1. Unfasten the lock nuts and spring washers used to tighten the spring upper and lower pull rods.

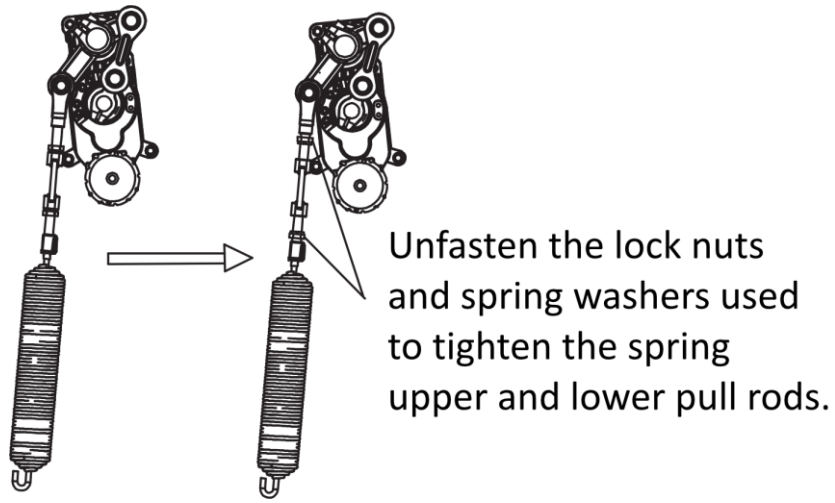


Figure 4-6 Unfasten Lock Nuts and Spring Washers

2. Unfasten the spring extension nut, and disassemble the spring lower pull rod.
3. Disassemble the limit position cotter pin of the spring pull rod, change the spring, and install the limit position cotter pin.

Note

For different number of springs, operate according to the figure shown below.

4. Screw the spring extension nut into the spring upper and lower pull rods. Make sure that the protruding length of the spring upper pull rod to the extension nut (L1) and that of the spring lower pull rod to the extension nut (L2) is nearly the same.

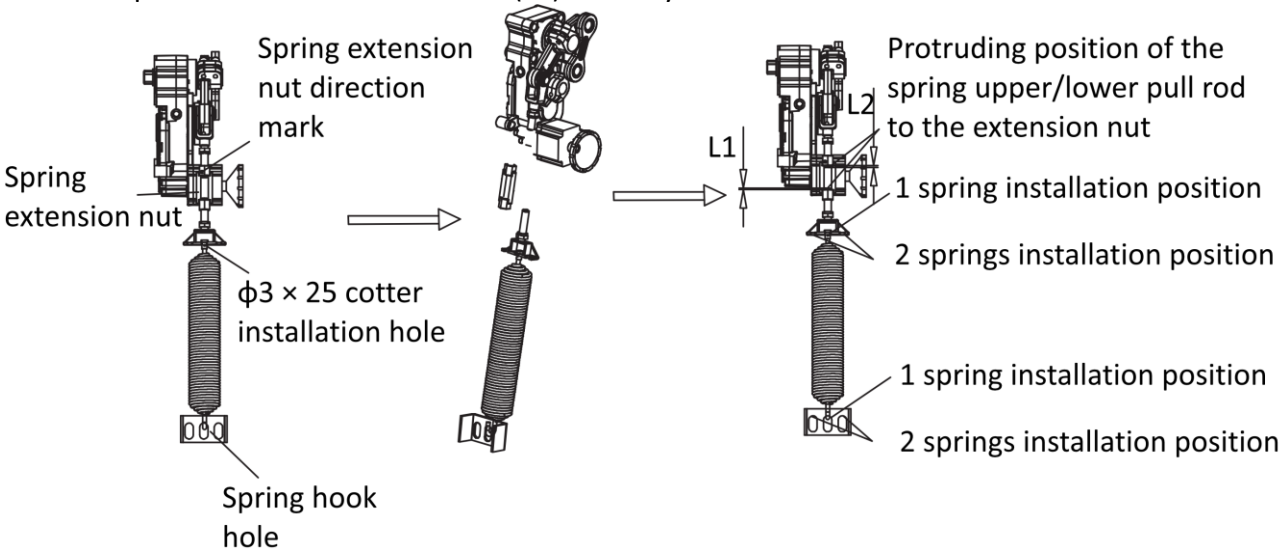


Figure 4-7 Change Spring

5. Fasten the spring extension nut until the boom pole meets the balance standard.

4.4 Change Machine Core

Before you start

Cut off the power supply. Disassemble the boom pole, spindle rod, and spring according to the procedure above.

Steps

1. Unplug the machine core power cord and signal line plugs on the barrier gate control board.
2. Operate the hand wheel to expose the machine core fixing bolts. Disassemble the fixing bolts with an 8 mm hex wrench.
3. Install a new machine core, and fasten the fixing bolts to the corresponding installation holes.
4. Install the spring. Refer to *4.3.3 Change Spring* for details.
5. Install the boom pole. Refer to *4.2 Change Boom Pole* for details.
6. Adjust the boom pole and spring according to the balance standard.

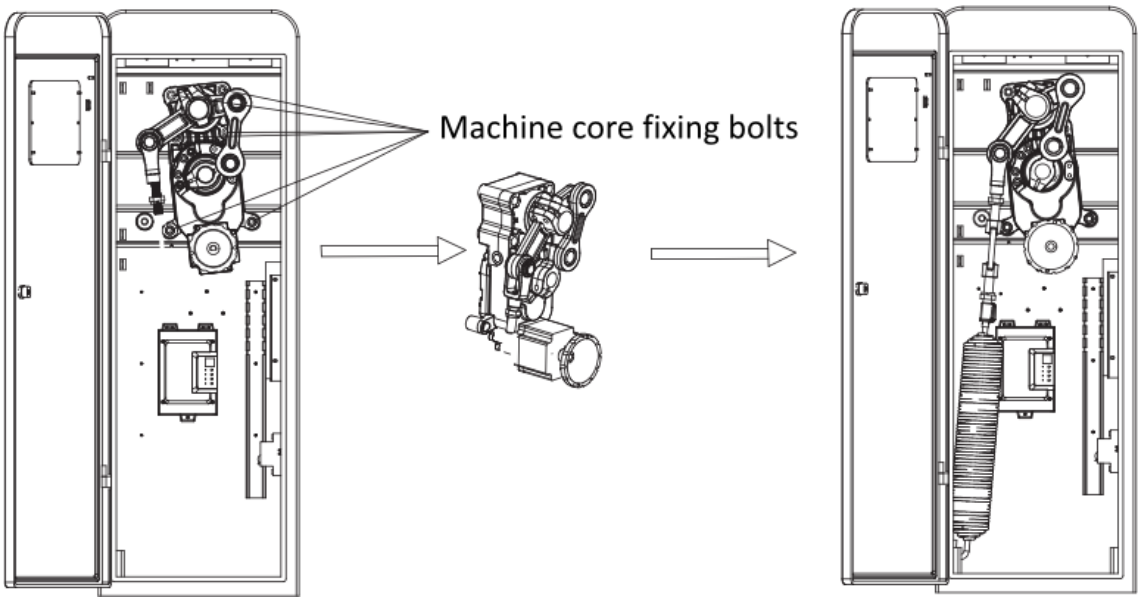


Figure 4-8 Change Machine Core

4.5 Left/Right Direction of Boom Pole

The boom pole direction depends on the driving direction of the vehicle. When you look from the driving direction as shown below, the left boom pole is the one that the boom pole is on the left of the barrier gate host, and the right boom pole is the one that the boom pole is on the right of the barrier gate host.

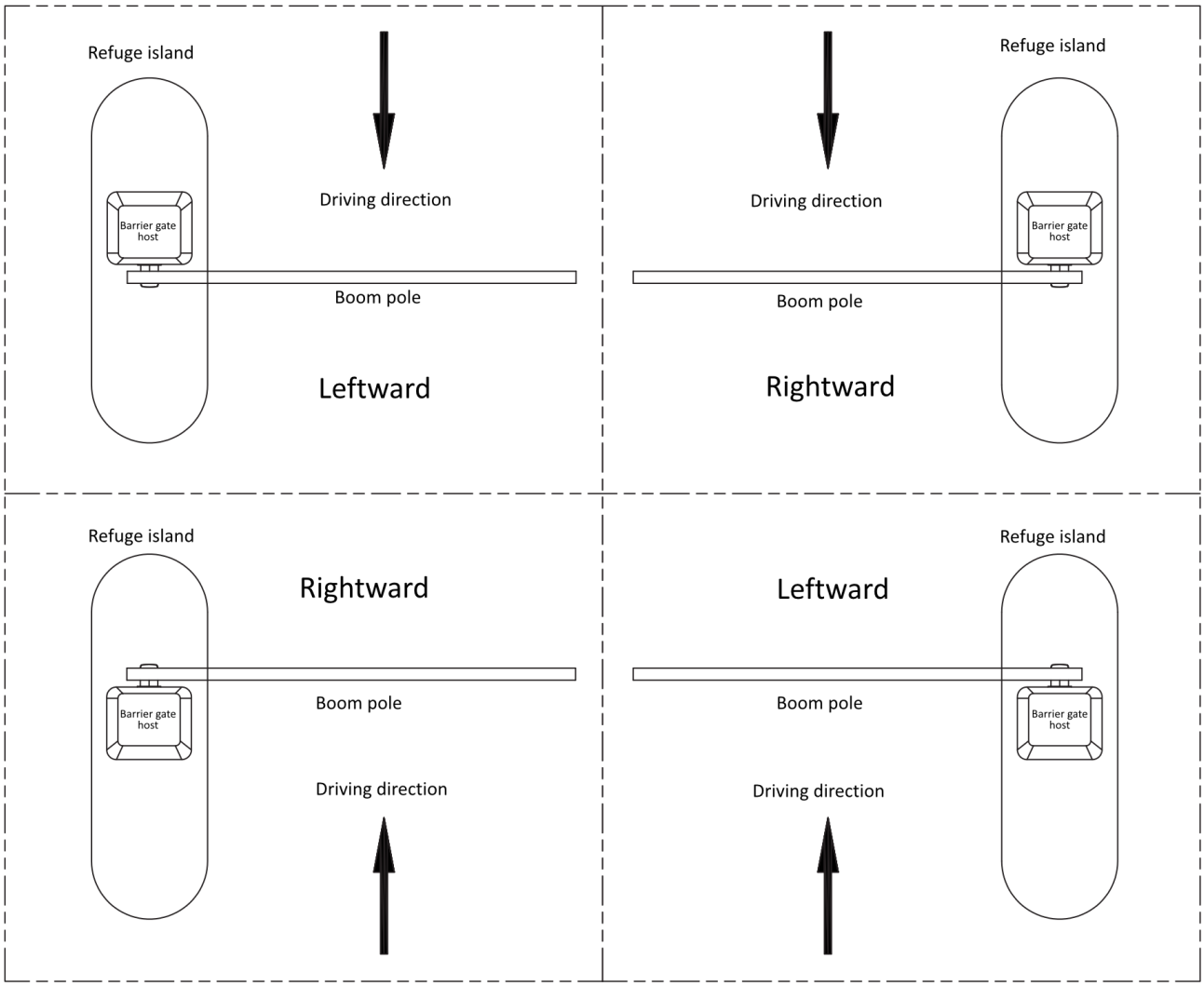
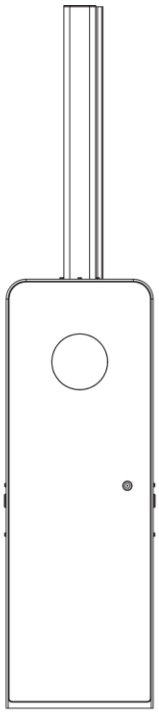
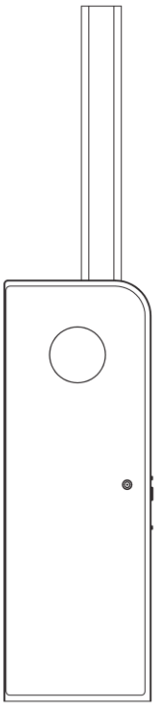


Figure 4-9 Boom Pole Direction Instruction

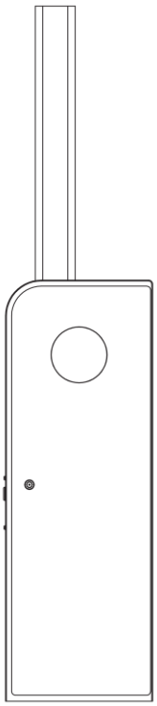
For some models of the barrier gate, the boom pole direction can be changed. For some models of the barrier gate, the boom pole direction cannot be changed. Refer to the figure below for the relationship between barrier gate models and boom pole directions.



Updated version of 42 series models (left/right direction changeable)



Direction change not supported models (right direction)



Direction change not supported models (left direction)

Figure 4-10 Relationship Between Barrier Gate Models and Boom Pole Directions

4.6 Change Left/Right Direction of Machine Core

Before you start

Cut off the power supply. Disassemble the machine core according to the procedure above.

Steps

1. Disassemble the 2 cap screws to tighten the output shaft, the 2 cap screws to fix the limit positions, and the 1 cap screw to tighten the crank arm in sequence.

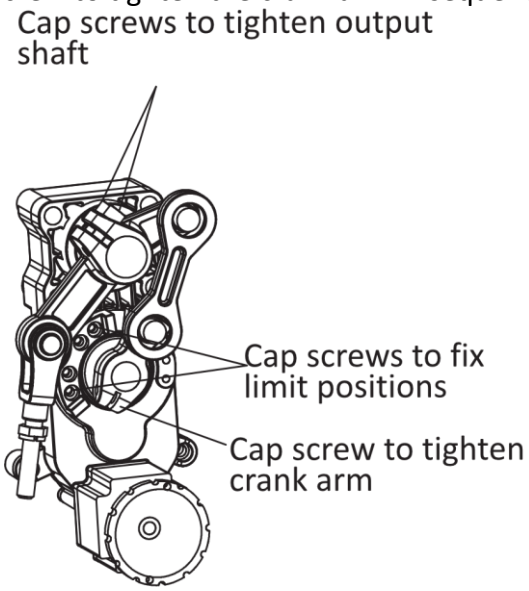


Figure 4-11 Disassemble Cheese Head Bolts

2. Distract the rocker with a 7 mm bevel tool, and remove the whole linkage arm component with a rubber hammer.

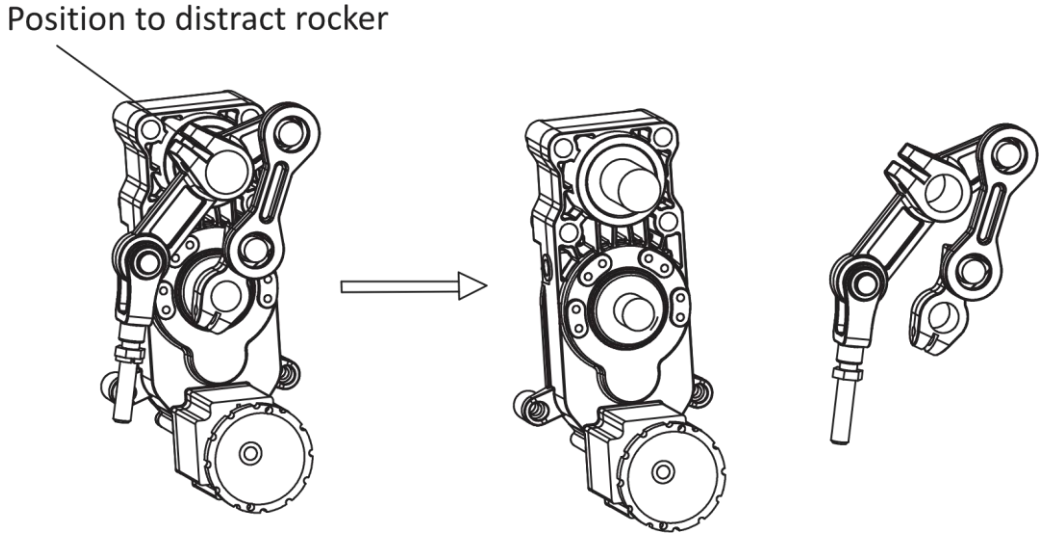


Figure 4-12 Disassemble Linkage Arm Component

3. Remove the 2 circlips used to fix the linkage arm with a circlip plier, and remove the linkage arm with a hammer or other tools. Rotate the crank arm 180°. Install the linkage arm and fix

the circlips.

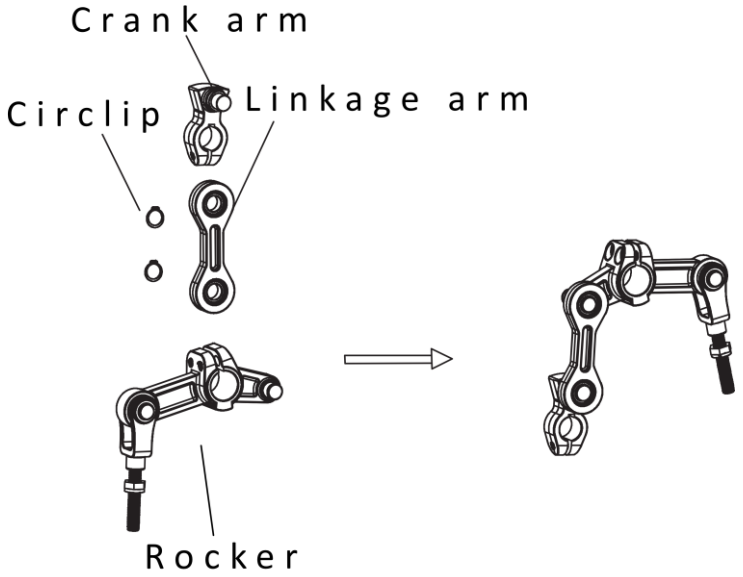


Figure 4-13 Disassemble and Reinstall Crank Arm, Linkage Arm, and Rocker

4. Install the left-direction linkage arm component to the machine core with the rubber hammer. Fix the cap screws to fix the limit positions, the cap screw to tighten the crank arm, and the cap screws to tighten the output shaft in sequence.

Note

During the linkage arm component installation process, operate the hand wheel to adjust the position to guarantee that the spindle rod installation surface of the output shaft is horizontal.

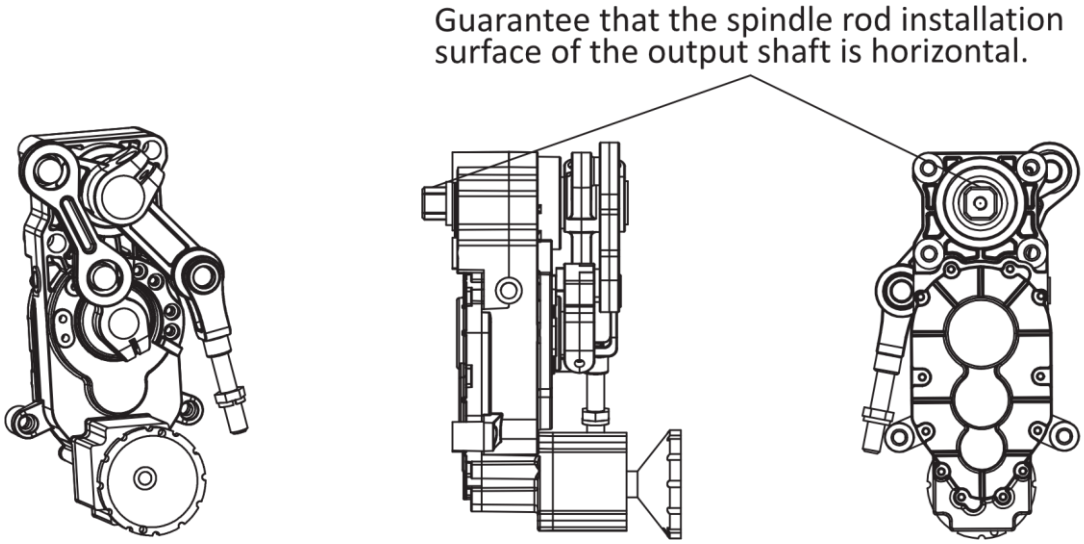


Figure 4-14 Install Linkage Arm Component

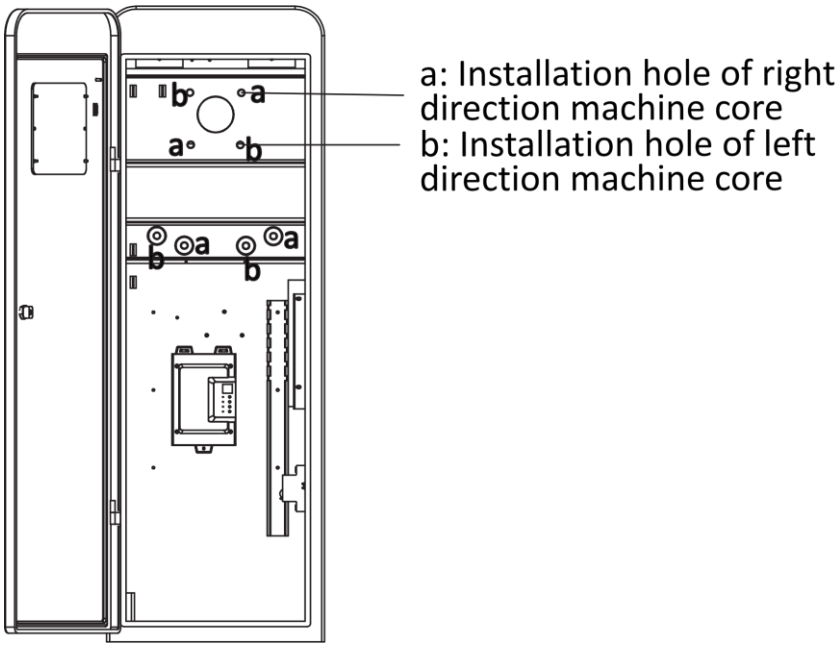


Figure 4-15 Machine Core Installation Position

5. Change the trunking, power switch and installation board, and the positions of the air switch and spring to switch the left and right directions.

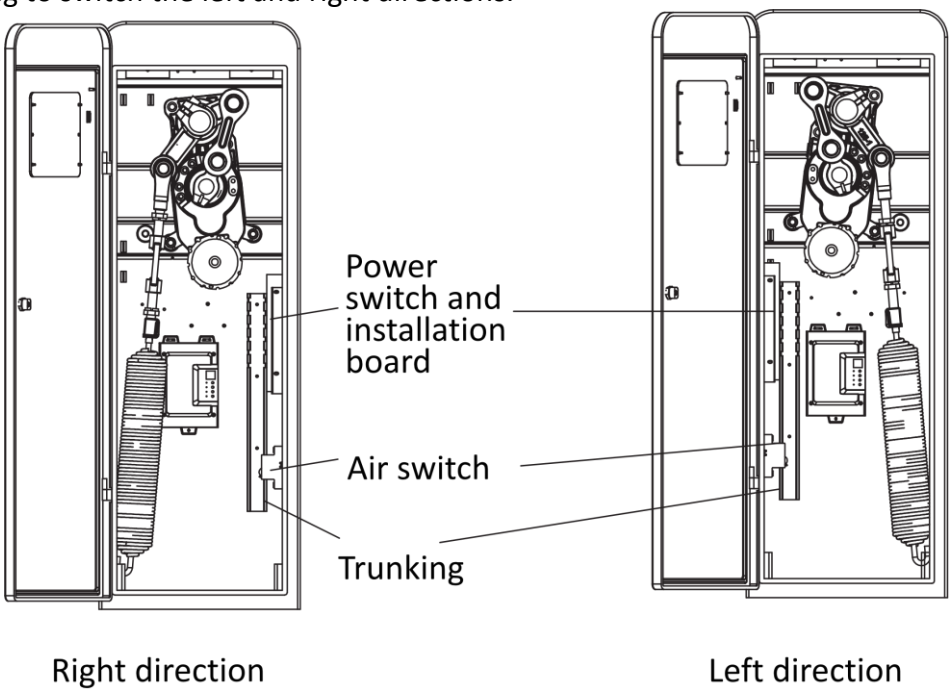


Figure 4-16 Change Other Components

6. Install the spring. Refer to *4.3.3 Change Spring* for details.
7. Install the boom pole. Refer to *4.2 Change Boom Pole* for details.
8. Adjust the boom pole and spring according to the balance standard.

A. FAQ

Fault Code on Nixie Tube	Fault Name	Troubleshooting	Remarks
“00”	No error.	No error.	
“01”	Hardware overcurrent	1. Check if there is short circuit of the motor or the control board. 2. Check if there is extreme load in operation.	1. The barrier gate can operate normally only after the boom pole is installed properly. 2. Check if the barrier gate spring balance meets requirements that the boom pole can rebound to 60° if you push the boom pole down to 20°. 3. Check if the mechanical structures are smooth. 4. Change other well-functioning control boards to test (Pay attention to the control board program).
“02”	Software overflow	1. Check if there is overload in operation. 2. Check if the machine core spring is installed correctly.	
“03”	Resistance	This error will be cleared automatically and will not be displayed.	
“04”	Overload	1. Check the possibility of overload. 2. Check if the machine core spring is installed correctly.	
“06”	Bus bar overvoltage	1. Check if the bus bar is in prolonged overvoltage status. 2. Check if the power supply is mismatched. Check if the motor is reversed manually. Check the possibility of braking resistor failure.	
“07”	Bus bar undervoltage	1.Check if the bus bar is in prolonged undervoltage status. 2. Check if the power supply is mismatched. Check if there is short circuit of the motor, power supply, or braking resistor.	

“0d”	Rising/Falling limit fault	1. Check if the gear has lost teeth. 2. Check if the rising/falling limit is damaged.	
“0E”	Anti-fall learning fault	Learn the anti-fall or protection signal act. Eliminate interference and press rise button to clear the error and learn again.	
“10”	Short circuit of the stopping control/stopping via handle port	Check if there is short circuit of the stopping control/stopping via handle port.	
“11”	Short circuit of the falling control/falling via handle port	Check if there is short circuit of the falling control/falling via handle port.	
“17”	Braking resistor exception	Check the installation status of the current braking resistor.	42 resistor is integrated in the main board. If error occurs, change other well-functioning main board to test.
“18”	Hall loss	Check if the hall signal line is broken or not connected.	
“64”	Rising boom pole for 60 s timed out.	1. Check if the boom pole is balanced. 2. Check if the structure is stuck.	
“66”	Learning in 60 s timed out.	1. Check if the gear has lost teeth. 2. Check if the rising or falling limit is damaged.	
“69”	FLASH exception	Check the connection status of the external FLASH chip and change a control board.	

See Far, Go Further