

# **Full High Turnstiles**

SK212700

## **Operating Instructions**

## **Copyright Statement**

### **Respected customer:**

Thank you for choosing Full-High Turnstile provided by Delos International Group. This is a product with high technology, so please read this manual carefully before operation.

The appearance and technologies involved in this product belong to Delos International Group.

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All rights to improve and perfect our products are reserved. We can't promise this manual is in full accord with the product you receive, but we will check and revise the manual at regular interval. No further notification will be sent in the case of any modifications to the manual.

## **Warranty Service Statement**

We provide free maintenance and technical support within warranty period from the day of purchasing. This commitment will automatically terminate when any of the following actions occur.

1. User makes modification, dismantlement or anything else which may possibly impair the completeness of software and hardware.
2. User fails to operate correctly according to this manual and causes damage to the equipment completely or partly.

## Safety Attention

The Full-high turnstile you select contains many mechanic and electric parts. Any negligence during assembling or operation may threaten your safety.

Any individual or entity who sells and install this product should take relative safety responsibility. Meanwhile, please obey the following matters:

1. Install the product strictly following instruction manual, and make sure the equipment is fixed before putting into use.
2. All the pipes and wires should be purchased according to instruction standard. Hide pipes and wires carefully to avoid electric leakage or abnormal running caused by circuit destruction during daily use.

### Warning:

**This manual introduces correct Full-high turnstile use information and important matters you should take care to prevent accident from happening. Please carefully read the manual and use this product. Any operation disobeys safety attentions or misuse turnstile may cause serious results threatening personal security.**

**Only trained professionals who understand electric and mechanical risk of turnstile product are qualified to install and operate turnstile system so as to avoid unnecessary dangers caused by misoperation.**

**We are not responsible for results caused by any unmentioned operation, malicious destructive operation and unprofessional operation of untrained technician.**

**Please keep this manual for future reference.**

Please contact the following e-mail if you need more information and training.

[engineer@delosgroup.com](mailto:engineer@delosgroup.com)

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# 1 System Introduction

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## 1.1 Brief Introduction

Full-high turnstile is a kind of 2-way speed access control equipment designed for places with high class security requirements. It can be used for unsupervised passage management. Meanwhile, its reliable and durable steel structure and mechanical design ensure normal use under high-strength environment, so as to control entrance/exit effectively and safely under relatively bad environment.

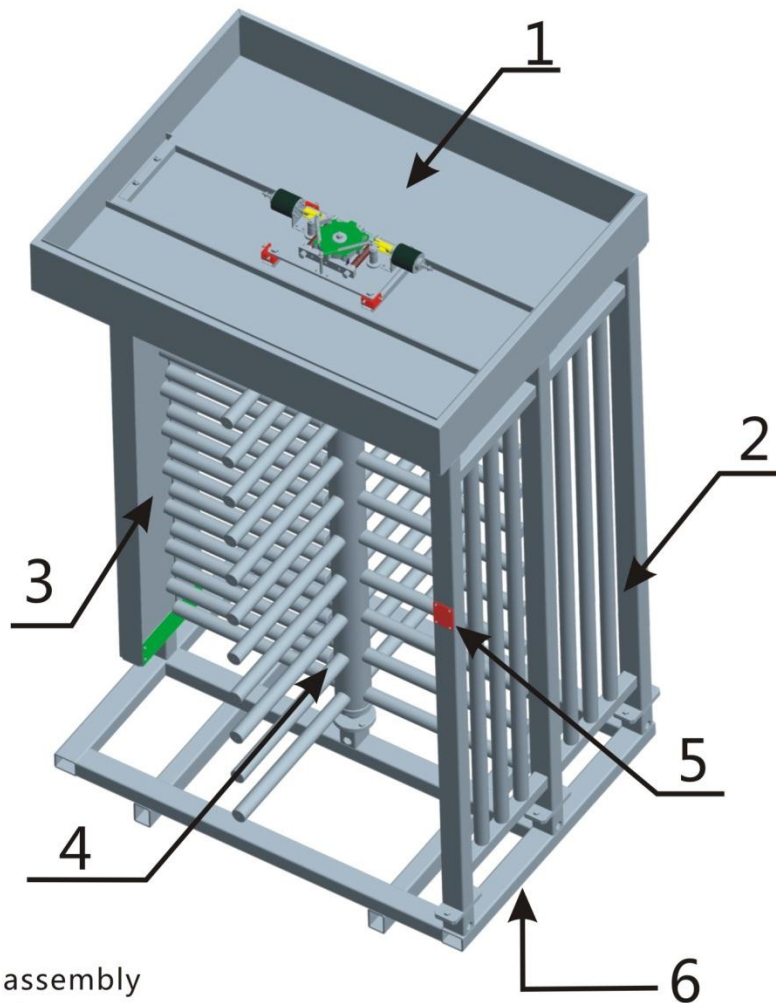
Full-high turnstile series are widely used in entrance/exit passages of station, wharf, tourist attractions, residential area, factory, enterprise and public institutions, football field, prison, government and other places.



## 1.2 System Configuration

Full-High Turnstile  
Introduction

Fig No. : P\_1-1



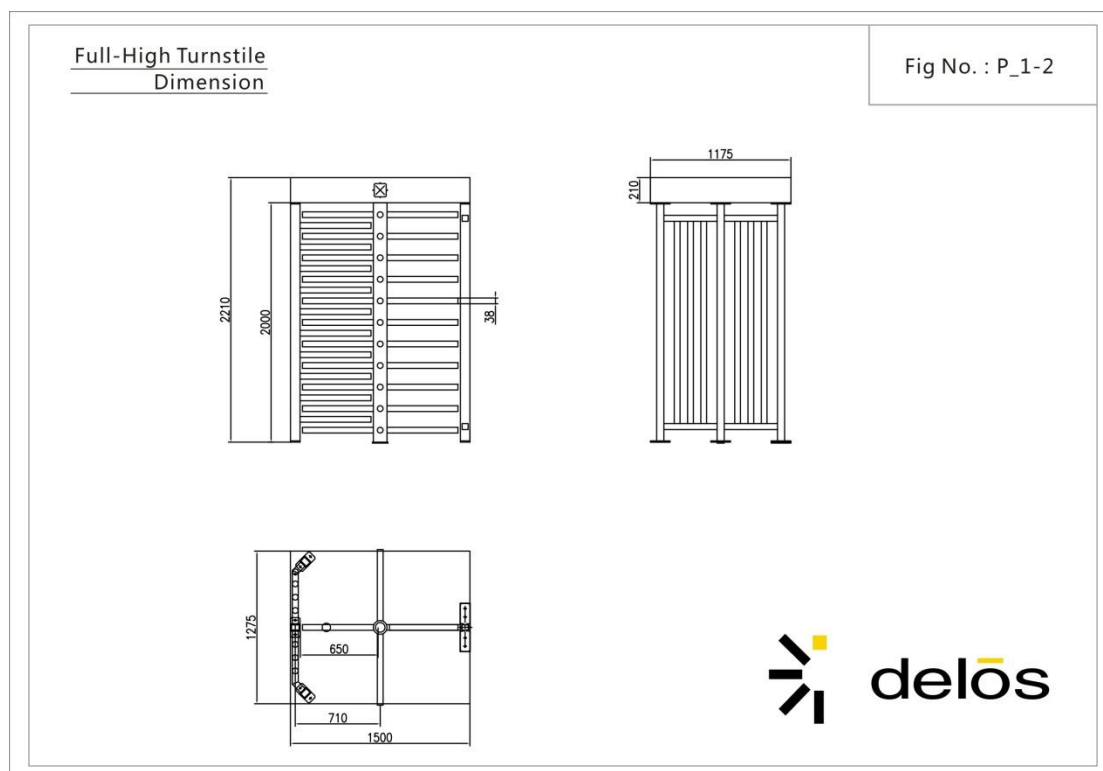
Note:

- 1 Top assembly
- 2 Side fence assembly
- 3 Side blocking pole assembly
- 4 Central rotation axis
- 5 Card reader(Provided by customer)
- 6 Pre-bury base(Optional)

## 1.3 Function Features

- Turnstile can be released in emergency by emergency button or electricity cutoff to ensure personnel safety.
- Anti-reverse rotation function: when turnstile rotates for 45° in reverse direction, make sure each authentication only allow one person to pass.
- Red and green passage indicator light can effectively display passage status.
- Standard signal input port, can be connected with most of the card reader, scanner, fingerprint device and other equipment.
- Total modularization, convenient for installation and maintenance.
- Elegant and solid equipment can effectively prevent unauthorized person from intruding. It can be used in unsupervised places.
- Two-way passing, one-way passing and other modes can be shifted freely according to the demands of different time periods.

## 1.4 Equipment Dimension



## 1.5 Main technical parameters

Basic Parameters	
<b>Product Dimension</b>	1500*1275*2210mm (L*W*H)
<b>Swing Arm Length</b>	600mm
<b>Passage Width</b>	≤650mm
<b>Swing Arm Diameter</b>	38mm
<b>Rotation Angle</b>	90°
<b>Material</b>	Iron (A3 steel) ( default )    Stainless steel
<b>Surface Finish</b>	International grey    Brush finish
<b>Net Weight</b>	290KG
<b>External Power</b>	AC 220V 50HZ
<b>Work voltage/ power</b>	DC 24V / 150W
<b>Control Signal</b>	Dry contact signal, TTL signal, low level pulse signal with pulse width > 100ms
<b>Common Control Method</b>	Swipe card, remote control, manual control, etc.
<b>Passing Direction</b>	One-way/two-way settable
<b>Passing Flow</b>	Normal passing speed: 25 persons/min Emergency passing: 40 People/min
<b>Fire Alarm /Emergency Power off</b>	Passage opens, free for passing
<b>Working Cycle</b>	> 1 million times, daily use 1000 times/day
<b>Working Temperature</b>	-20°C~+50°C
<b>IP Class</b>	IP65
<b>Working Environment</b>	Indoor/outdoor use (It is supported to use flashing)



# 2 Equipment Installation

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## 2.1 Product Check

Delivery list of Full-high turnstile:

NO.	Name	Quantity
1	Central rotation axis	1
2	Side blocking pole assembly	1
3	Side fence assembly	1
4	Hoop (central rotation axis)	1
5	Top assembly	1
6	Bottom pre-bury part	0 default
7	M14 expansion bolt	10
8	M12 expansion bolt	3
9	M12*35 bolt (with flat gasket, spring and nut)	10 sets
10	M10 hexagon screw	4

Firstly check accessories after equipment arrives. Contact us in time if there' re any problems.

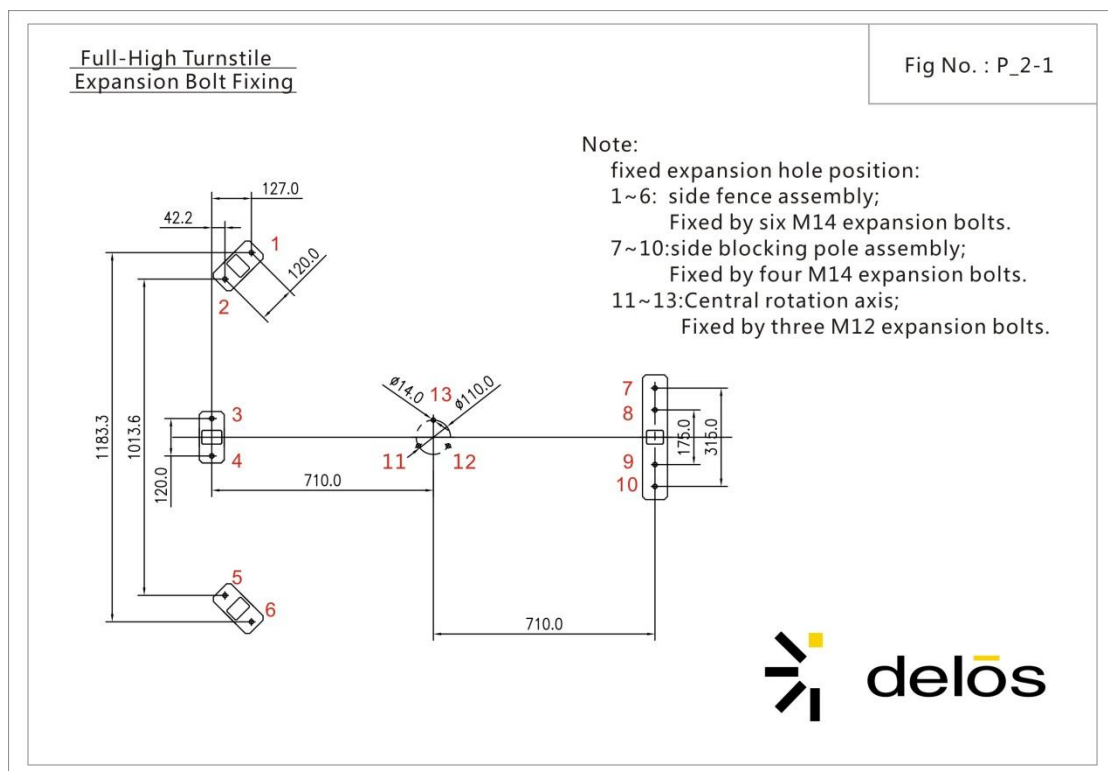
## 2.2 First-phase Preparations

### 2.2.1 Tool preparations

- ◆ A set of hexagon spanner
- ◆ Impact drill (including D16 and D14 drills)
- ◆ A set of monkey wrench
- ◆ 17-19 open spanner: 1
- ◆ Screw driver and other common wiring tool
- ◆ Herringbone ladder with height more than 2m: ≥2

### 2.2.2 Site Preparations


Ensure site ground is flat no matter installing turnstile indoors or outdoors. Then make sure the fixing position of expansion bolts according to the following figure.



**Instruction:** make a mark of hole position according to drawing, and further ensure the hole position on the equipment on site, then fix the expansion bolts so as to avoid artificial mistake.

## 2.3 Equipment Installation

### 1. Fix side fence, side blocking pole and top assembly

 delos	Installation Instruction	Fig No. : P_2-2
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**Step 1 : Side fence fixing**

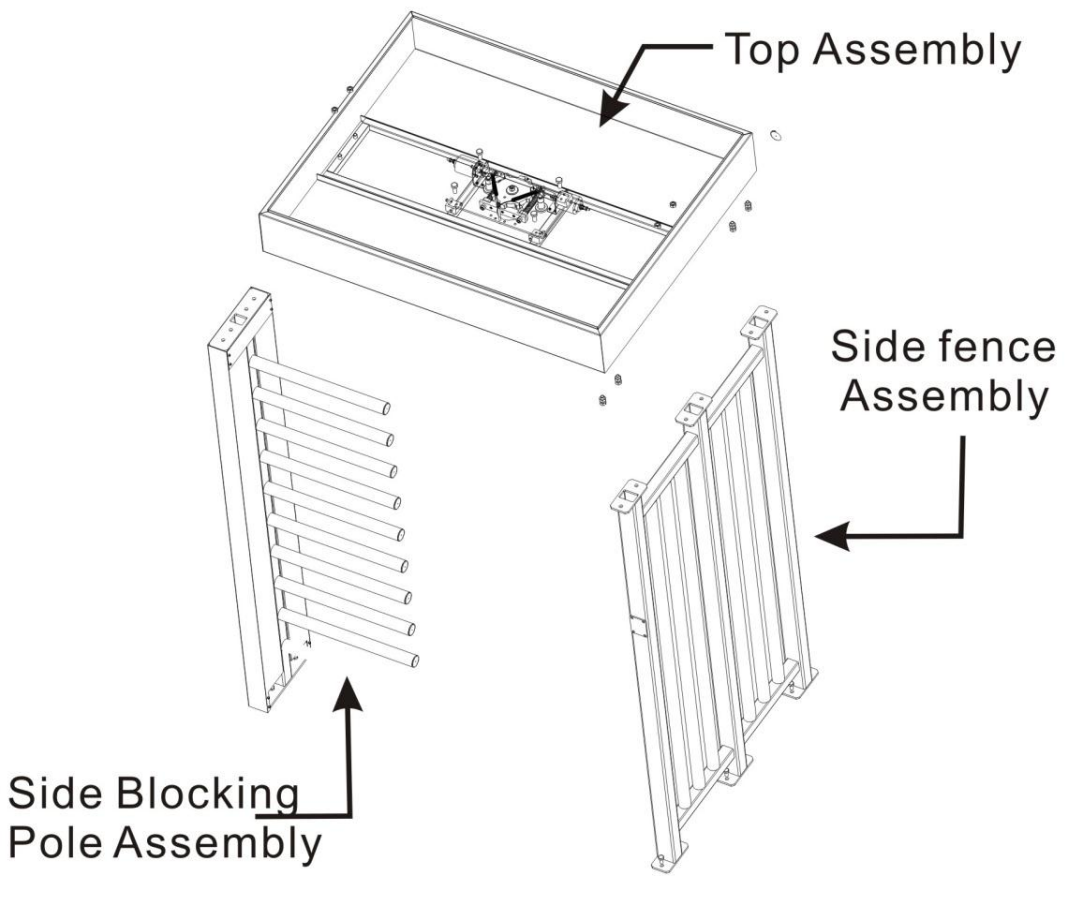
use 6 expansion screw to fix side fence assembly on the ground

**Step 2: Side blocking pole fixing**

use 3 expansion screw to fix side pole assembly on the ground.

**Step 3: Top assembly fixing**

after side fence assembly and side pole assembly are fixed, use 10 bolts to fix top assembly and nuts on side fence assembly and side blocking pole assembly.



The diagram illustrates the assembly components and their relative positions. At the top is the 'Top Assembly', a rectangular frame. Below it are the 'Side fence Assembly' and the 'Side Blocking Pole Assembly'. The side fence assembly consists of vertical posts connected by horizontal rails. The side blocking pole assembly consists of a vertical post with several horizontal poles extending from it. Arrows point from the labels to their respective parts in the exploded view.

2. Fix central rotation axis



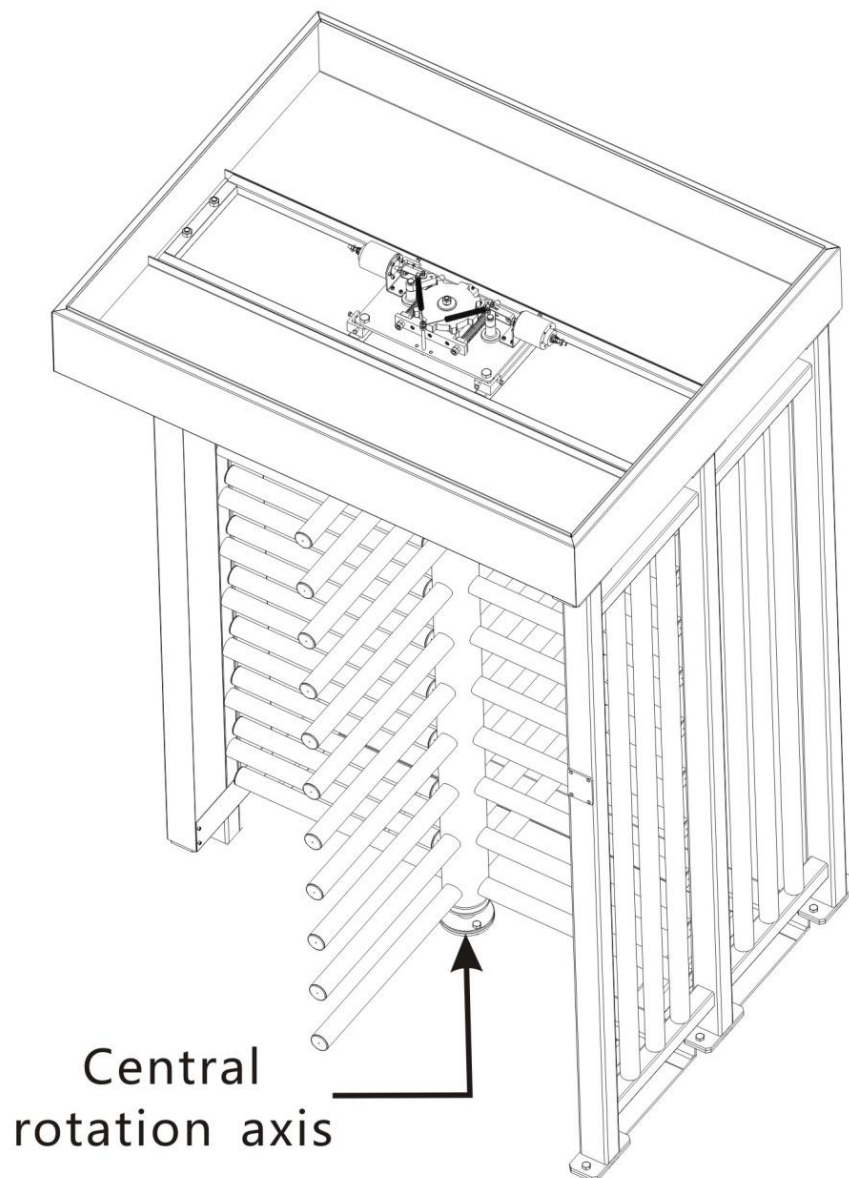
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Installation Instruction

Fig No. : P\_2-3

### Step 4 : Central rotation axis

Firstly adjust the position of central rotation axis and fix the bottom part with expansion bolts . Then use hoop to fix square head part of rotation axis and movement part of top assembly.



3. Lay pipes & wires



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Installation Instruction

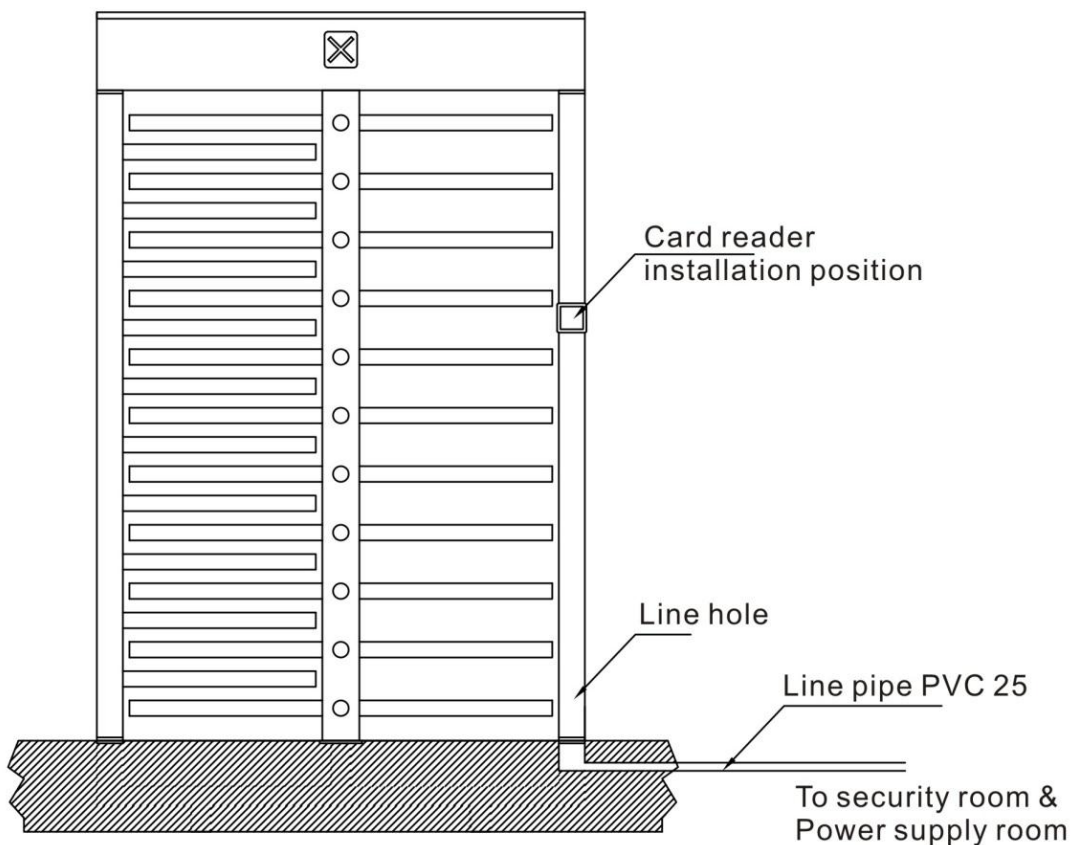
Fig No. : P\_2-4

### Step 5 : Pipe & line laying

①Power line : pull power line to underground through the hole between top assembly and side fence, then pull the line to power supply room through PVC pipe

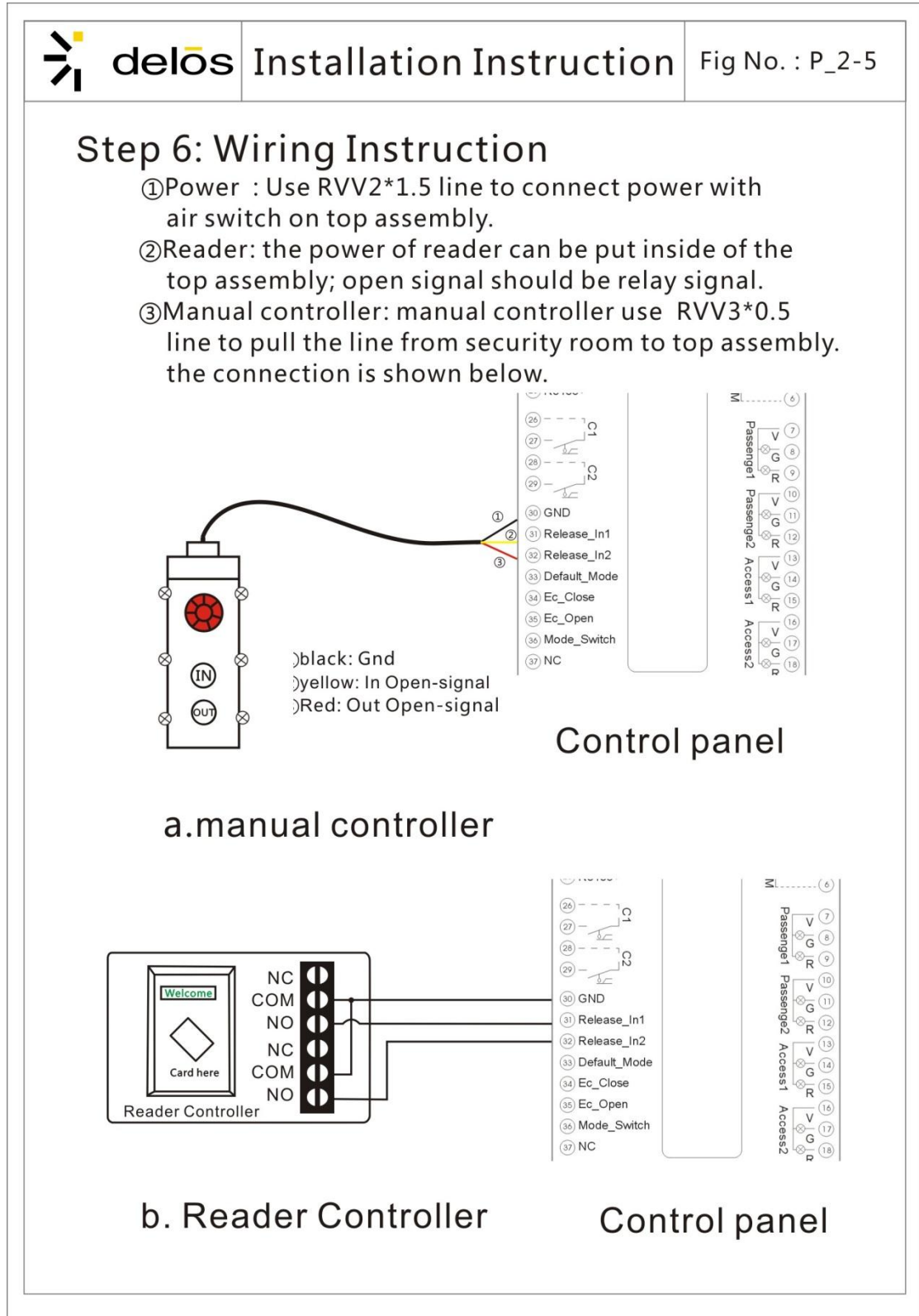
②Card reader line: pull the power line and control line of card reader to the top through the installation hole on side fence.

③Manual box line: pull manual box line to underground through the hole between top assembly and side fence ,then pull the line to security room through PVC Pipe



**Instruction:** fixed axes on the side fence are all hollow. Wires can be pulled from top to underground.

3. Wiring Instruction



## 2.4 Operation Instruction

When equipment is well installed, check circuit carefully and electrify to detect:

- ① Electrify and start the equipment after installation check
- ② Notice whether passage light (white) is on
- ③ Notice whether passage indicator lights in both sides are **red X**
- ④ Manually push and pull turnstile to see whether it is completely locked
- ⑤ **In direction** swipe card once or push open button and check whether the status is as following: **In direction** is available, **out direction** is locked; **In direction** passage indicator light changes into green arrow; after one person passes, turnstile is locked in both directions; in direction passage indicator light changes back into **red X**.
- ⑥ **In direction** swipe card again or push open button, rotate turnstile for 45° in **In-direction**, then check whether it cannot rotate back or not.
- ⑦ Make ⑤⑥ operation tests in **out-direction**.

If the answers of all the above steps are YES, equipment can be well installed. Test for several times and put into use.

## 2.5 Additional Function

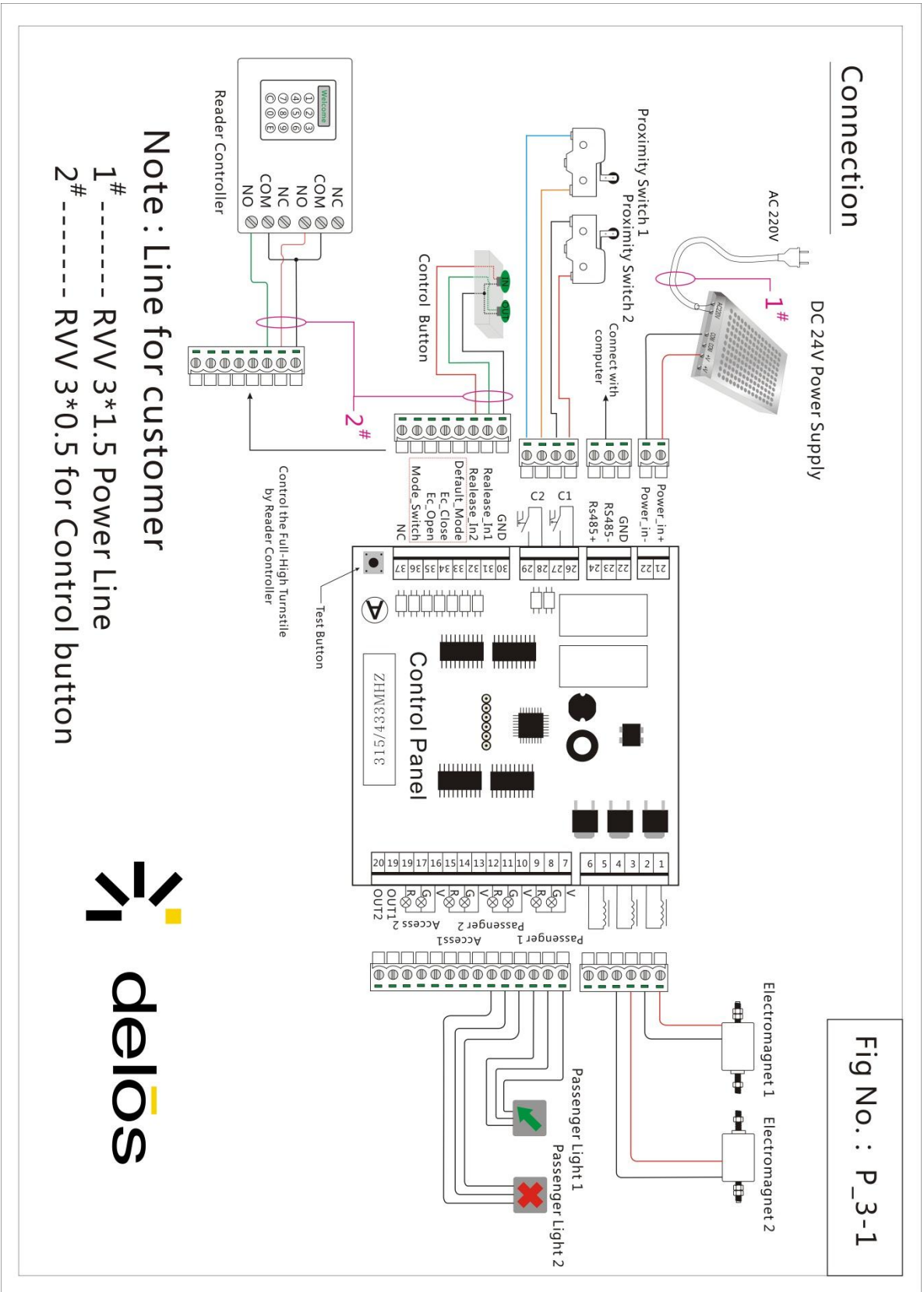
The standard turnstile is equipped with a LED lighting(220V AC , 3W)which can work for nearly 50,000 ~ 80,000 hours.





# 3 Use Instructions

## 3.1 Connection





## 3.2 Manual Control

Operation method:

After equipment is installed, install a set of manual boxes in control room. When people need to pass controlled area, he/she must get agreement from security guard and then press the release button on manual box to control the turnstile.

Applications:

This mode is suitable for places requiring extremely high security protection like prison. All passers must register at security room and get passing right.

Advantage: high security

Disadvantage: slow passing speed, requiring registration one by one

## 3.3 Swiping Card Control

Operation method:

During equipment installation, install card reader, fingerprint device and other authentication equipment on the Full-high turnstile or nearby region. Passer swipes card or uses fingerprint to pass freely.

Applications:

This mode is usually used in mansion, football field, residential area and other places requiring safety control but meanwhile convenient for authorized users to pass quickly.

Advantage: rapid pass, convenient for user

Disadvantage: security performance is a little bit weaker than manual control

## 3.4 One-way Control

Operation mode:

Modify the mode into one-way control mode (refer to 4.4 One-way Control Mode for details)

Swipe card or control manually in one direction to pass. Opposite direction is free or forbidden for passing.

Applications:

Stadium, residential area, one-way entrance and other places requiring one-way control only.

**Instruction:** you can also use mode 3.1 and 3.2 to control together, let authorized users pass, and people from outside will be allowed to pass after registration.

## 3.5 Function Instruction

① Pass time (can be set through software settings)

After authentication is valid, passer has 10s to pass. If he/she fails to pass within 10s, passing right will be automatically cancelled.

② Counting function

When equipment received 2 times of authentication, it will be locked automatically after 2 passers pass within pass time.

③ Anti-rotation-back function

When user push the turnstile for more than 45°, it will be unable to rotate back. This can effectively prevent illegal taggers.

④ Indicator light instructions

When authentication is valid, passage indicator light will turn into **green arrow**, reminding user to pass. When user hasn't been authenticated, indicator light displays as **red X**.

# 4 Working Mode

## 4.1 Mode Classification

Full-high turnstile has 4 working modes:

MODE	CORRESPONDING PORT(CONTROL PANEL)
① Two-way authentication mode (default)	33. Default_Mode
② Emergency off mode	34. Ec_Close
③ Emergency on mode	35. Ec_Open
④ One-way passing mode	36. Mode_Switch

Among them, one-way passing mode is divided into 4 kinds:

- In direction** free pass, **out direction** authenticated pass
- In direction** authenticated pass, **out direction** free pass
- In direction** pass forbidden, **out direction** authenticated pass
- In direction** authenticated pass, **out direction** pass forbidden

## 4.2 Mode Shift

Working mode can be shifted between 2 methods:

### 1. Signal input shift

Modify the mode by sending short circuit signal to control panel port.

- After equipment enables, it is defaulted as two-way authentication mode: sending a short circuit signal to port 30 and 33 on control panel
- Emergency off mode shift: sending a short circuit signal to port 30 and 34 on control panel
- Emergency on mode shift: sending a short circuit signal to port 30 and 35 on control panel
- One-way mode shift: sending N short circuit signals to port 30 and 36 on control panel. First short circuit mode modification is 4.1 a, second b, third c, fourth d, and the fifth time it will shift into two-way free passing mode.

**Instructions:** when inputting signals to shift modes, equipment will automatically

revert to defaulted mode after power off and restart. So this method is suitable for places requiring flexible mode shift (control the corresponding port of to-be –shifted mode by external button)

## 2. Software modification

Before sending the equipment, if customer makes sure the requirement of long term use, we will make permanent modification to the control panel.

Connect control panel with computer by 485 protocol converter, then use software to modify.

**Instruction:** software mode will remain unchanged after power off and restart.

## 4.3 Specific Mode Introduction

### ① Two-way authentication mode (defaulted mode)

Under this mode, passage is available for passing in both directions. Both directions require authentication for passing.

### ② Emergency off mode

Under this mode, both directions forbid passing. Authentication is invalid.

### ③ Emergency on mode

Under this mode, both directions is free for passing. Passers can pass freely.

### ④ One-way mode

#### a ) **In direction** free pass, **out direction** authenticated pass

Under this mode, in direction is free for passing, out direction requires valid authentication.

#### b ) **In direction** authenticated pass, **out direction** free pass

Under this mode, in direction requires valid authentication. Out direction is free for passing.

#### c ) **In direction** pass forbidden, **out direction** authenticated pass

Under this mode, in direction is completely forbidden for passing. Out direction requires valid authentication.

#### d ) **In direction** authenticated pass, **out direction** pass forbidden

Under this mode, in direction requires valid authentication. Out direction is completely forbidden for passing.

# 5 Maintenance

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## 5.1 Daily Maintenance

- Clear equipment surface at regular intervals according to working environment.
- Clear the passage in order to avoid influencing normal passing
- Check whether wirings are loose at regular intervals
- Check external fixed screws and screws of internal mechanical part are loose and fasten them.
- Add some oil to mechanical running part to ensure smooth running of equipment.

## 5.2 Common Failures

NO.	Failure Description	Solution
1	Equipment can' t be locked after power on	Power off and restart. Check whether wirings are loose.
2	Fail to pass after swiping card	1.Check whether the card has the authority 2.Check whether card reader and other devices are normal and wires are loose.
3	Several passers can pass for swiping card once	Check whether top counting switch is loose.
4	Other problems	Check wiring condition, then power off and restart. If problem still exists, please contact us in time.