MAG®

Ensuring Your
Peace of Mind.

FHG776
MAG SINGLE LANE
FULL HEIGHT TURNSTILE

GOOD
QUALITY & INNOVATION

EXPERT
KNOWLEDGE & EXPERIENCE

EXCELLENCE
SUPPORT & SERVICE

MAG.COM.MY

FHG776 MAG SINGLE LANE FULL HEIGHT TURNSTILE

Description

The MAG FHG776 redefines full-height turnstile security with its innovative modular design, offering a robust and cost-effective solution. This semi-automatic, stainless steel single-lane turnstile effectively prevents unauthorized access by eliminating vulnerabilities such as crawl-under and climb-over attempts, ensuring maximum security control for your premise.

Unlike traditional welded turnstiles, the FHG776 minimizes manufacturing and logistical costs through its modular construction. This design significantly reduces packaging size and simplifies component replacement, leading to lower shipping expenses and easier maintenance. Damaged metal poles can be replaced quickly and efficiently, eliminating the need for specialized welding and minimizing downtime.

Optimized for both indoor and well-shaded outdoor applications, the FHG776 provides an economical yet highly secure access control solution.

Features

✓ **Modular Interloc** structure enables quick replacement of damaged components with standard parts, minimizing downtime and reducing maintenance costs without specialized tools.

✓ **Single Level Anti Reverse (SLAR)** locking mechanism ensures only one authorized user passes per entry, preventing tailgating and unauthorized access, enhancing overall security.

✓ **Semi-auto drive mechanism** with hydraulic shock absorber ensures smooth and quiet rotation, providing a comfortable and efficient user experience.

✓ **Access Control Integration**: Dry contact interface allows seamless integration with various third-party access control systems, providing flexible and customizable security solutions.

✓ **Intuitive** LED indicators and audio feedback guide users through the turnstile, providing clear cues for correct passage direction, enhancing user experience.

✓ **Safety during Power Failure**: Automatic solenoid unlocking during power outages ensures free passage for safety, automatically relocking when power resumes for continuous security.

Technical Parameter

Description	Parameters
Body Material	SS304 stainless steel*
Dimension	1400mm(L) x 1311mm(W) x 2330mm (H)
Passage Width	577mm
Optimal Flow Rate	20 to 25 people per minute
Arm Rotation Angle	120°
Power Supply Input	AC220/110V±10%, 50/60Hz
Power Consumption	60W
Operating Voltage	24V DC
Working Environment	Indoor and well-shaded outdoor application
Working Temperature	-25℃ - 70℃
Relative Humidity	≤ 90%, non-condensing
Open Signal	Dry contact signal
Fire / Emergency Alarm	Unlock and free for passing
IP Rating	IP 44
MTBF	3 million cycle

For coastal area application, please consult our sales personnel.

Precaution

- In case of emergency, isolate the power from the power supply.
- Improper installation can cause danger (such as electric shock or fire). Please engage specialist for the proper installation work.
- DO NOT install the product in a potentially explosive atmosphere.
- DO NOT operate with wet hands.
- If abnormal condition (burnt smell. etc) occurs, switch off the power supply.
- NOT Water proof.
- Equipment must be grounded.

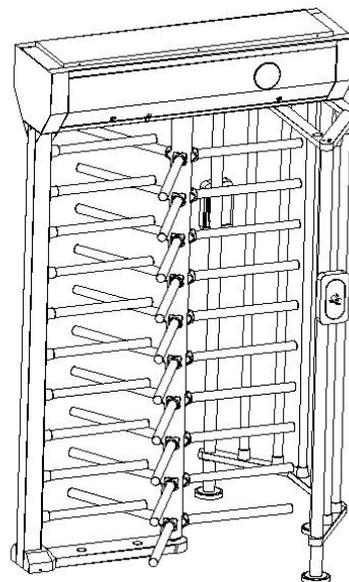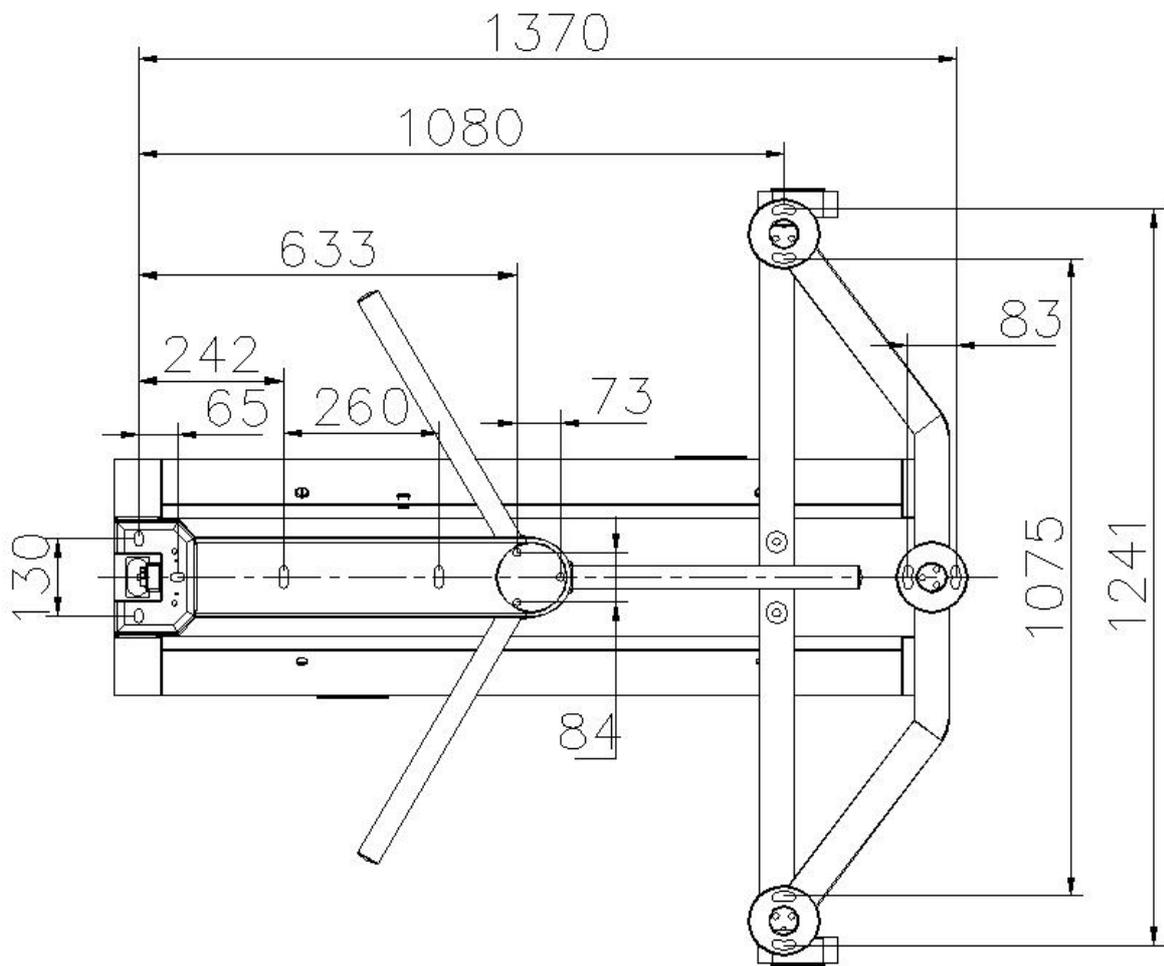## Technical Drawing
(Dimension in mm unless specified)
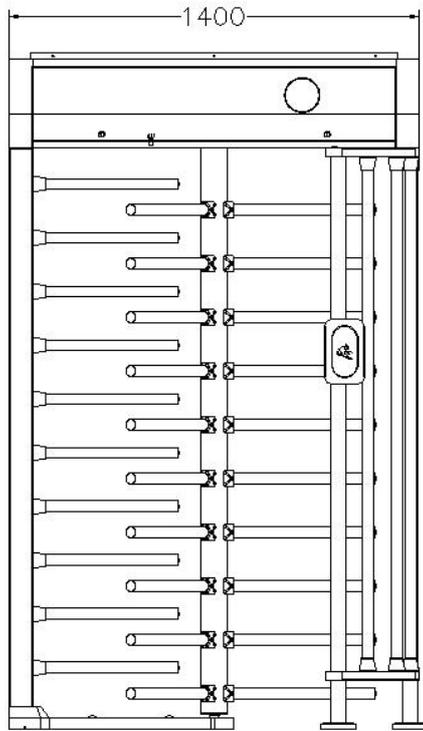
Front View
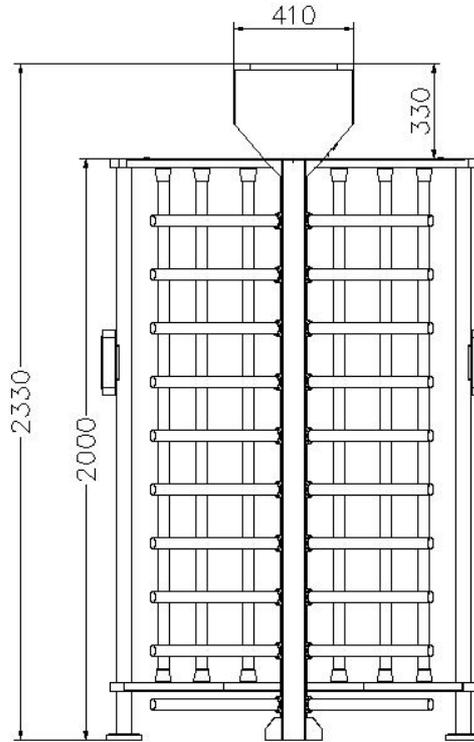
Side View
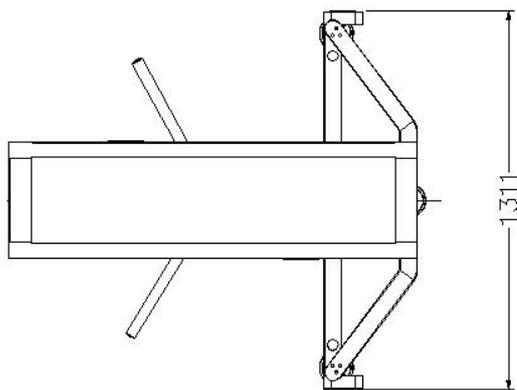
Top View

Base
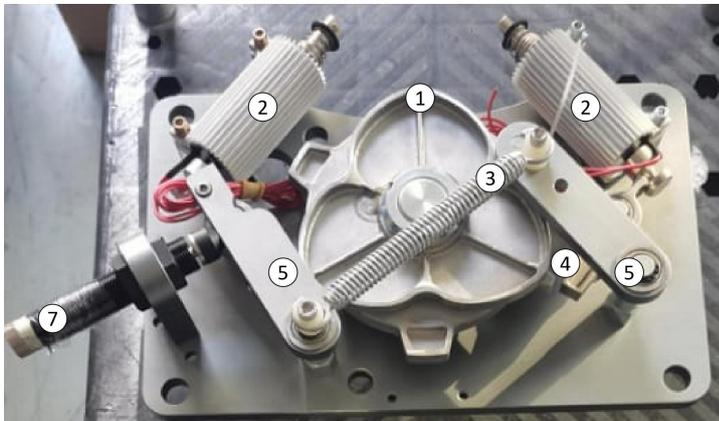
Table of Content

FHG776 Parts
Body

1. Top Assembly
2. Single Pillar
3. Central Rotation Axis
4. Side Fence
5. Card Reader Bracket
6. Base

Machine Core

1. Flower Disc
2. Solenoid Lock
3. Spring
4. Bird Beak
5. Spring Bracket
6. Proximity Sensor
7. Absorber

Electronic control system
1. Main Controller Board
2. DC 24V Switching Power Supply
3. LED Indicator

INSTALLATION GUIDE

Parts and Components

No.	Image	Name	Qty
A01		A01 Single Pillar	1
A02		A02 Single Pillar Rod	10
B01		B01 Side Fence Support Pillar (Left)	1
B02		B02 Side Fence Support Pillar (Middle)	1
B03		B03 Side Fence Support Pillar (Right)	1
B04		B04 Card Reader Box	2
B05		B05 Side Fence Pole	6
B06		B06 Side Fence Top	1
B07		B06 Side Fence Bottom	1

C01		C01 Central Rotation Axis	1
C02		C02 Central Rotation Axis Rod	30
D01		D01 Top Assembly Box	1

No.	Image	Name	Qty
1-1		M12 Washer	7
1-2		M12 Spring Washer	7
1-3		M12 * 75 Hex Socket Cap Screw	7
2-1		M8 Washer	16
2-2		M8 Spring Washer	16
2-3		M8 * 20 Hex Socket Cap Screw	16
3		M8 * 25 Hex Screw	24
4		M8 * 8 Hex Screw	64

5-1		M6 Washer	14
5-2		M6 Spring Washer	14
5-3		M6 * 20 Hex Socket Cap Screw	14
6		M4 * 16 Hex Socket Cap Screw	5

7		Side Fence Joint Cover	22
8		Arm Rod Joint Cover	30
9		Side Fence and Base Plate Cover Cap	7
10		Top Assembly Box Cover Cap	3
11		Clamp Cover	1
12		Base Plate	1
13		Base Bearing	1
14		Keys	1
15		Side Fence Inner Ring	12

16		M12 * 10 Rawl Bolt	13
17		Screw Thread Adhesives	1
18		Installation Template	1
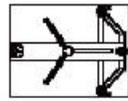
Assembly
Single Pillar (Left)
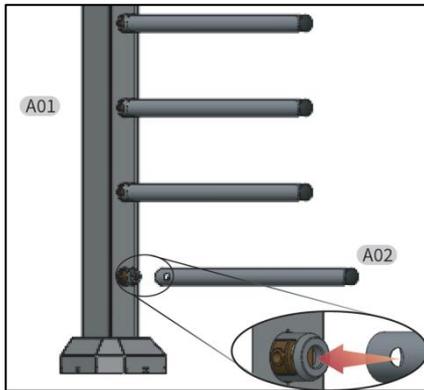
1. Fix A02 rod into A01 Single Pillar.
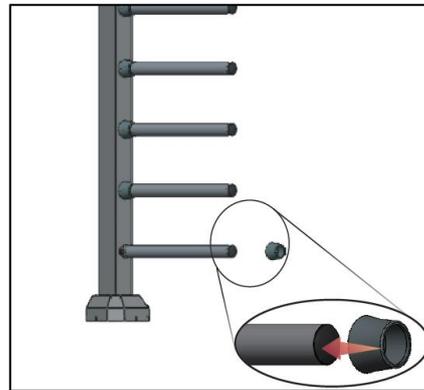
4. Insert the joint cover to conceal the joint.
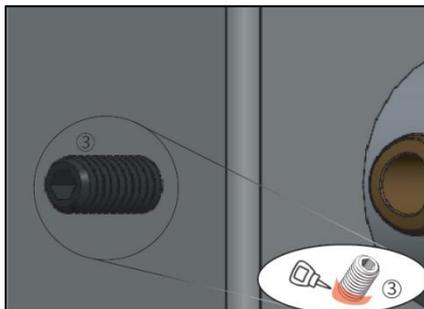
2. (Optional) Apply adhesives to hex screw before securing.
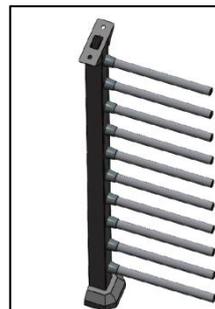
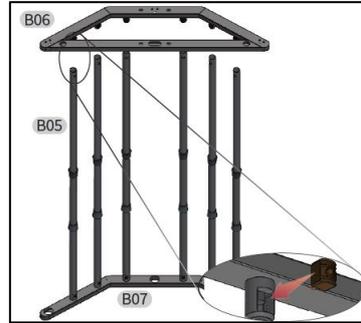Repeat Step 1 to 4 for all 10 rods.
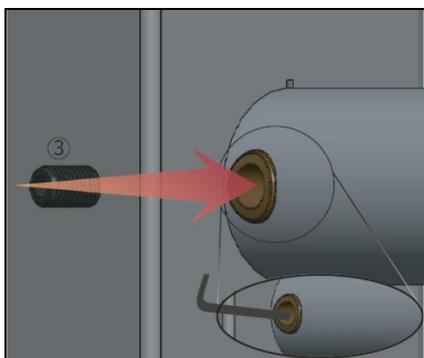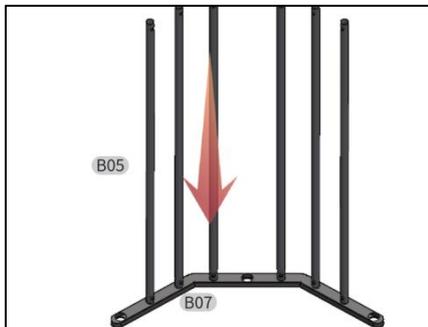

3. Secure the rod with the hex screw

Side Fence (Right)
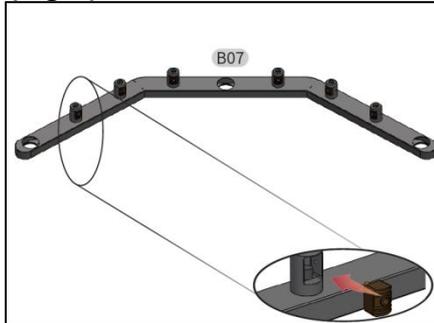
1. Place the inner ring into the allocated slot for all 6 slots of B07 frame.

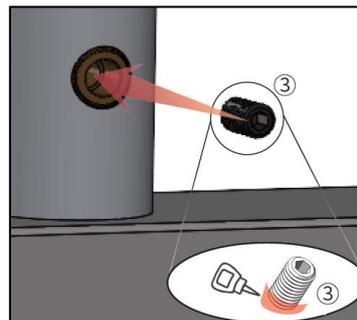4. Place the inner ring into the allocated slot for all 6 slots of B06 frame.

2. Insert all 6 B05 column into B07 frame.
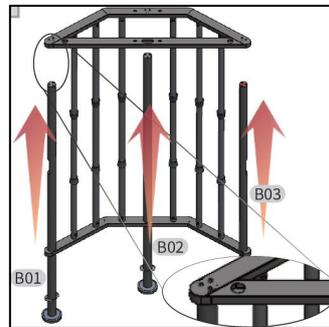
5. Align and insert B01, B02, B03 pillar into respective holes to support B07 and B06.
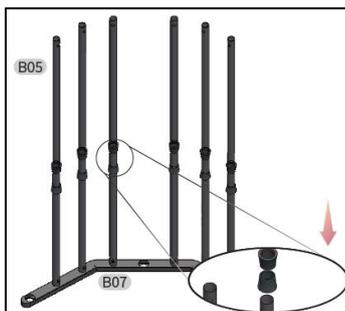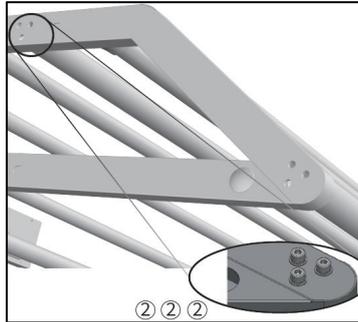
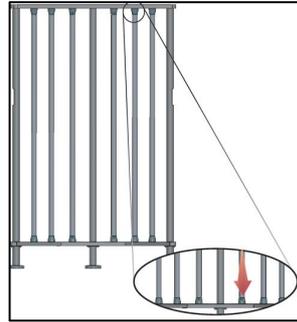

3. Insert bottom and top joint cover in order in advance.

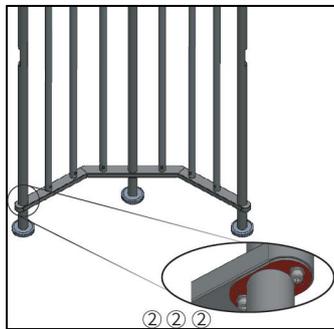6. (Optional) Apply adhesives on the hex screw, then use it to secure all B05 column.

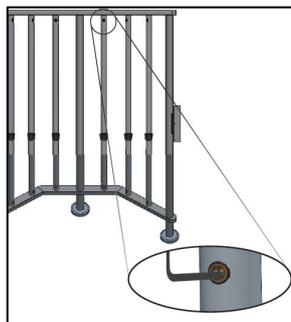7. Use screw 2 to secure the top end of B01, B02 and B03 pillar.

8. Use screw 2 to secure the bottom end of B01, B02 and B03 pillar.

9. Similarly, use the hex screw to secure the top of all B05 column.

10. Use the cover to conceal all the joints

11. Secure the 2 reader box base to the front and back column with screw 5.
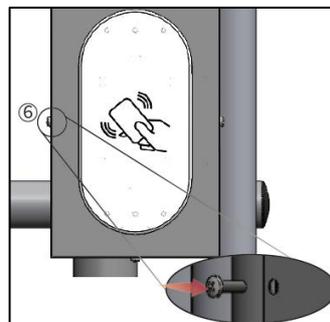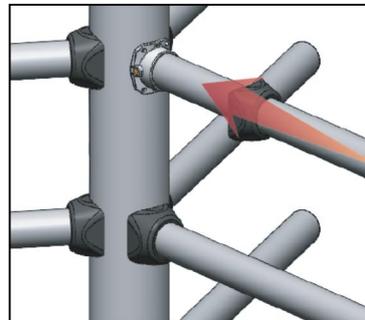

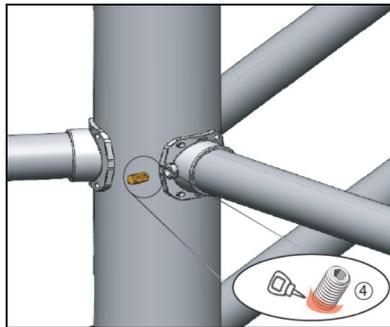12. Close the reader box with screw 6.
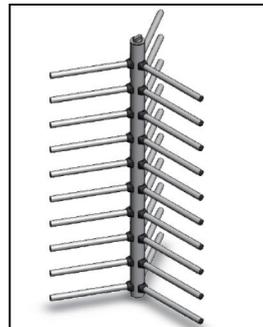
Central Rotation Axis
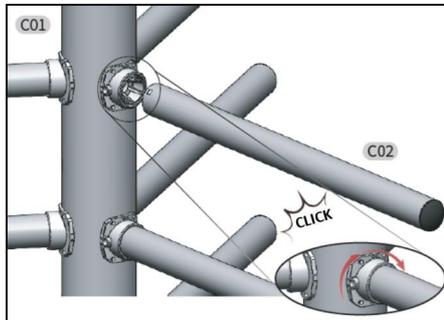
1. Insert C02 rod into C01 axis, then rotate clockwise until an audible click is heard.
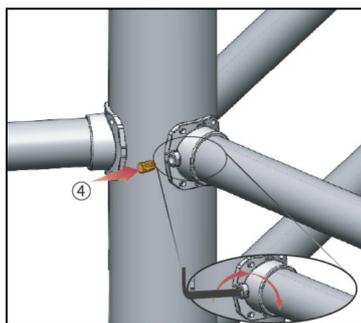

4. Conceal the joint with a cover.

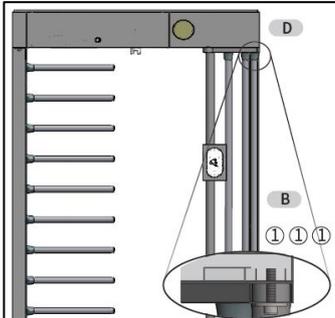2. (Optional) Apply adhesives to hex screw (4) before securing it.

Repeat Step 1 to 4 for all 30 C02 rods for the central rotation axis.

3. Insert the hex screw and fasten it with a hex key.

Assembly

1. Position Single Pillar, Side Fence and Top Box as shown. Then secure side fence with screw 1.
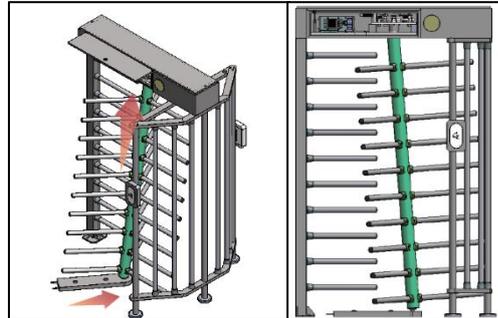
4. Position the Central Rotation Axis to be upright, and slide to align it as shown.
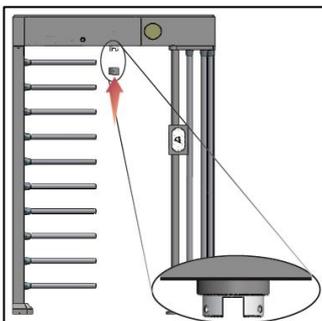
2. Insert the clamp cover.
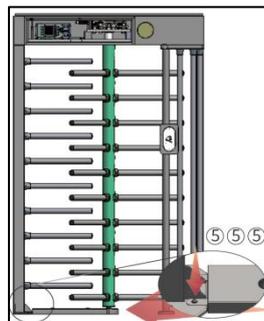
5. Secure the Base Plate with screw 5.
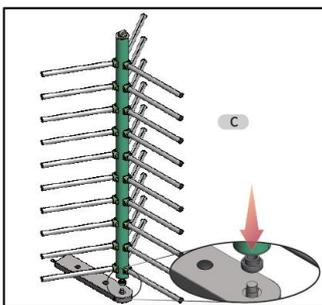
3. Assemble the bottom bearing, base plate and Central Rotation Axis as shown.
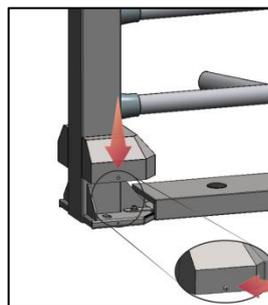
6. After securing the base with wall plug, conceal the base with its cover.

7. Tighten the clamp and secure its cover.

8. Place the Top Assembly Box cover and secure it with screw 5.
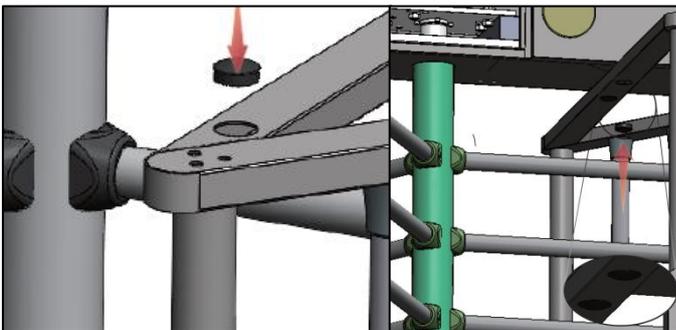
9. Seal the holes of Side Fence and Base Plate and Top Assembly Box with cover.
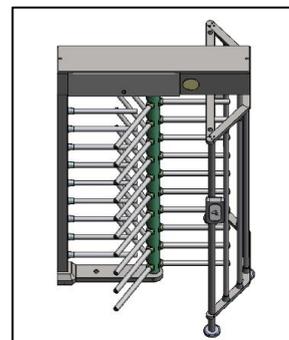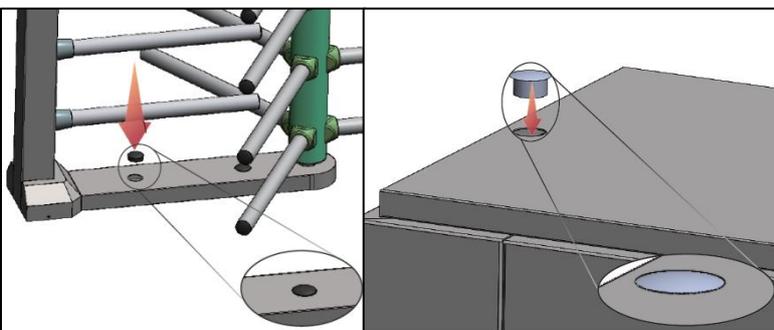
10. Assembly is complete.

Installation

Pre-requisite

- Ensure base height is at least 200mm for outdoor installation.
- Ensure the concrete base is at least C30 grade.
- Ensure the installation is level, and central rotation axis is vertical. Non-level installation may cause damage to bearings and loud noise during operation.
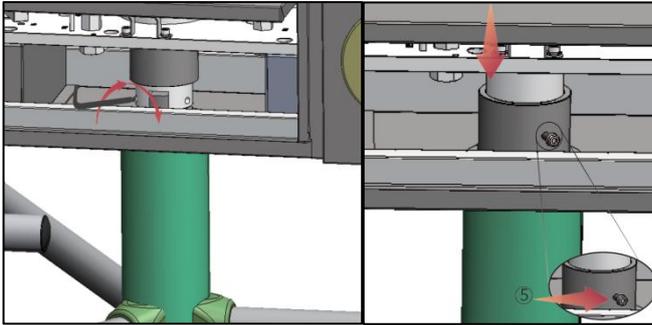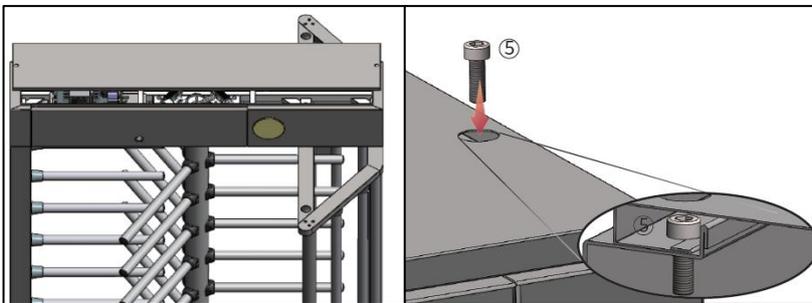- Proper earthing must be done.
- Ensure there is enough height clearance for installation (recommended >2.6m).
- Awning is recommended for outdoor installation to protect against weather elements and provide comfort to user.

Wiring Layout

-AC 240V power line (not included).

-Access control system / fire alarm wiring (not included).

AC power (incoming to MCB)

Access Control Signal (e.g. Main Board to Card Reader)

To Controller / Server / Fire Alarm
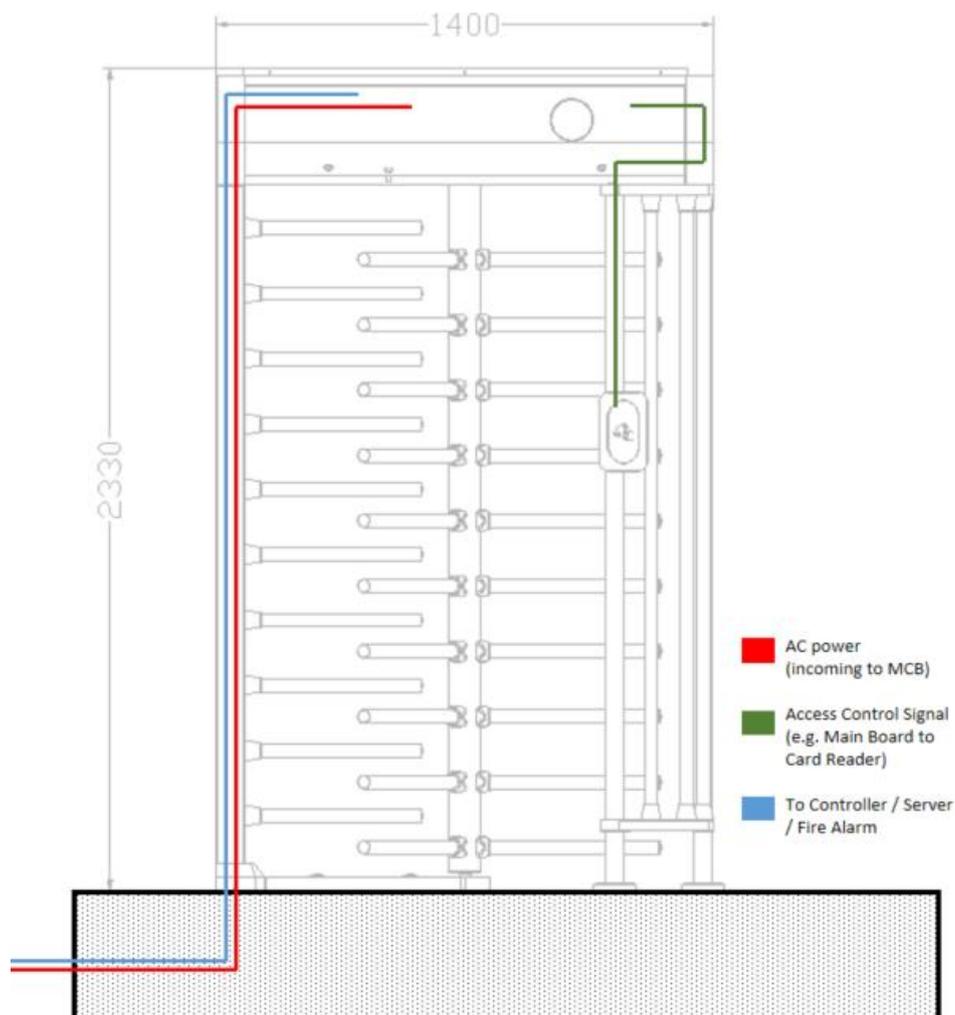
Base and Body Installation

*Tips: Use the template provided for accurate installation.
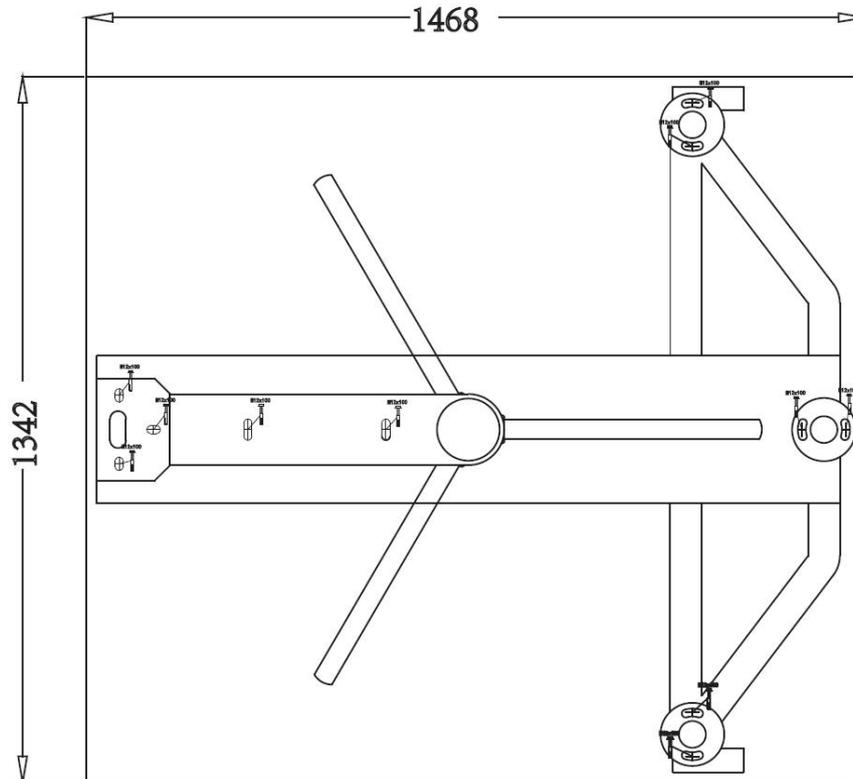
Wiring Connection

Overview

Main Board

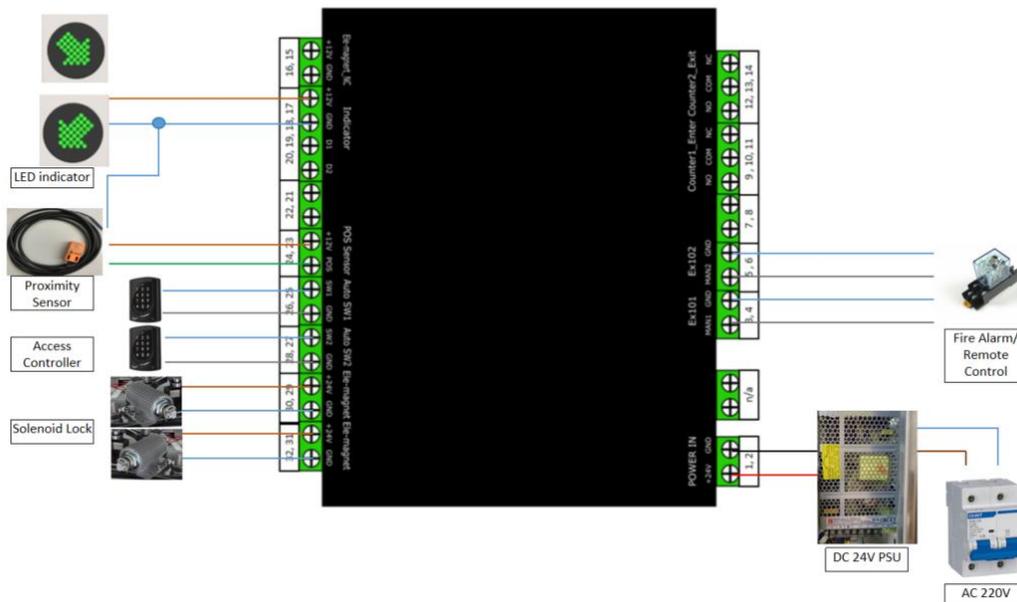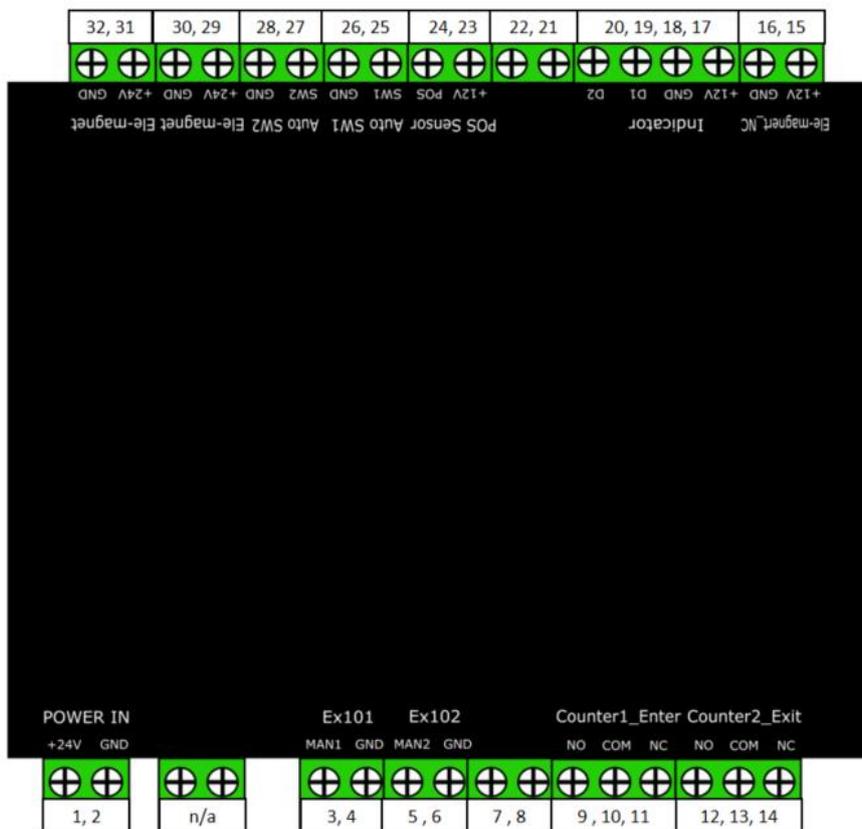| 1	+24V	Power In	24V DC power supply input
2	GND		
3	Man1	ExIO1	Manual Gate Opening Input (Direction 1)
4	GND		
5	Man2	ExIO2	Manual Gate Opening Input (Direction 2)
6	GND		
7	A+	not in use	-
8	B-		
9	NO	Counter 1	Relay Output for Direction 1
10	COM		
11	NC		
12	NO	Counter 2	Relay Output for Direction 2
13	COM		
14	NC		
15	+12V	12V output	-
16	GND		
17	+12V	LED indicator	Connect to direction LED indicator. D1: Direction 1 LED signal D2: Direction 2 LED signal
18	GND		
19	D1		
20	D2		
21	-	not in use	n/a
22	-		
23	+12V	POS sensor	Connect to proximity sensor
24	POS		
25	SW1	SW1	Direction 1 opening signal
26	GND		
27	SW2	SW2	Direction 1 opening signal
28	GND		
29	+24V	Electromagnet 1	24V DC Output to electromagnet By default, will output 24V when locked, and reduce to 0V when unlocked
30	GND		
31	+24V	Electromagnet 2	
32	GND		

Typical Connection for Access Control
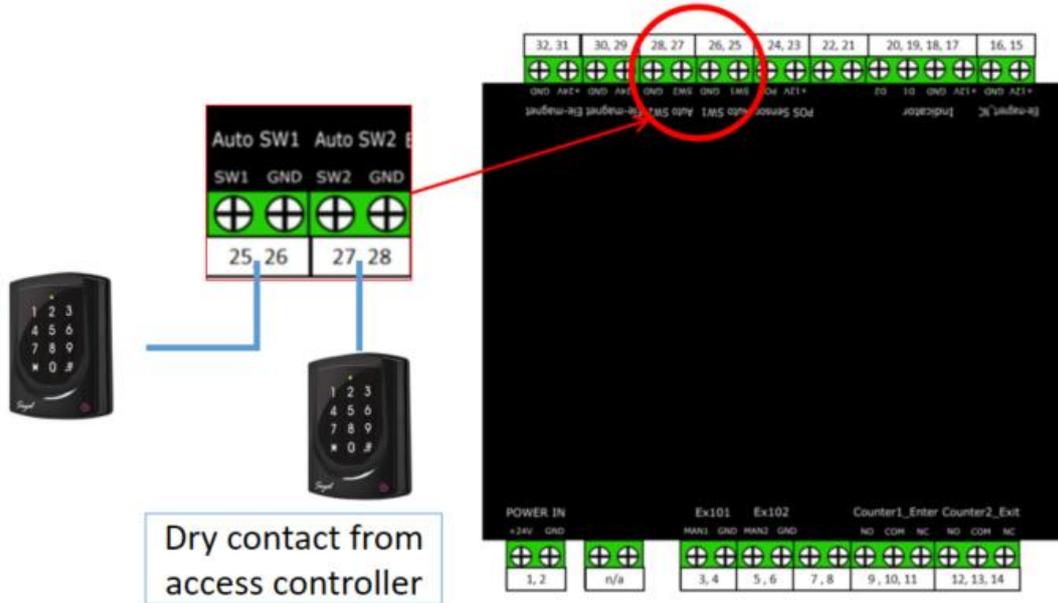
Note: Access control output signal should be set to 1s.

Optional Fire Alarm Connection
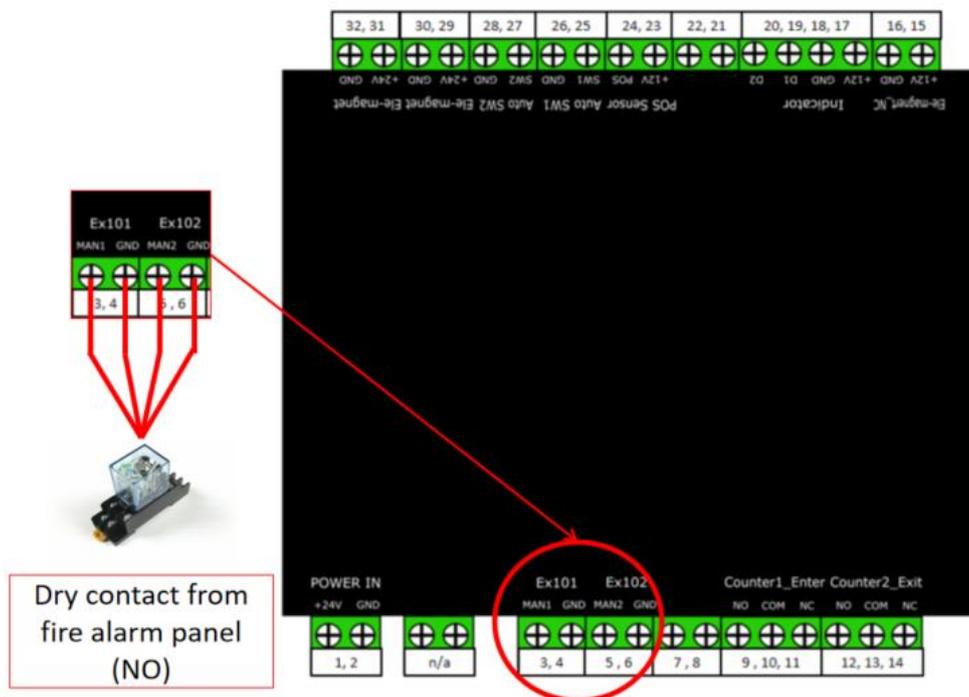
Alternatively, FHG776 can be unlocked by switching off the power supply.

Parameters Settings

Dipswitch can be access by opening the main board plastic cover.

DIP Switch 1 - 3: Auto-Relock Timer*

Default auto-relock timer (how long arm will stay unlock without user passing through) is 5s.
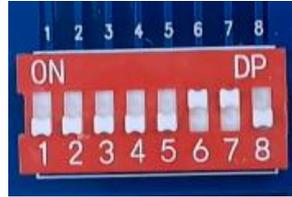
1	2	3	Auto -Relock Duration
OFF	OFF	OFF	5s
OFF	OFF	ON	6s
OFF	ON	OFF	7s
OFF	ON	ON	8s
ON	OFF	OFF	9s
ON	OFF	ON	10s
ON	ON	OFF	11s
ON	ON	ON	12s

DIP Switch 4, 5: N/A, do not change

DIP Switch 6: Solenoid Mode
Default: ON
Only used when changing to fail-secure solenoid.

DIP Switch 7: Sensor Type, do not change

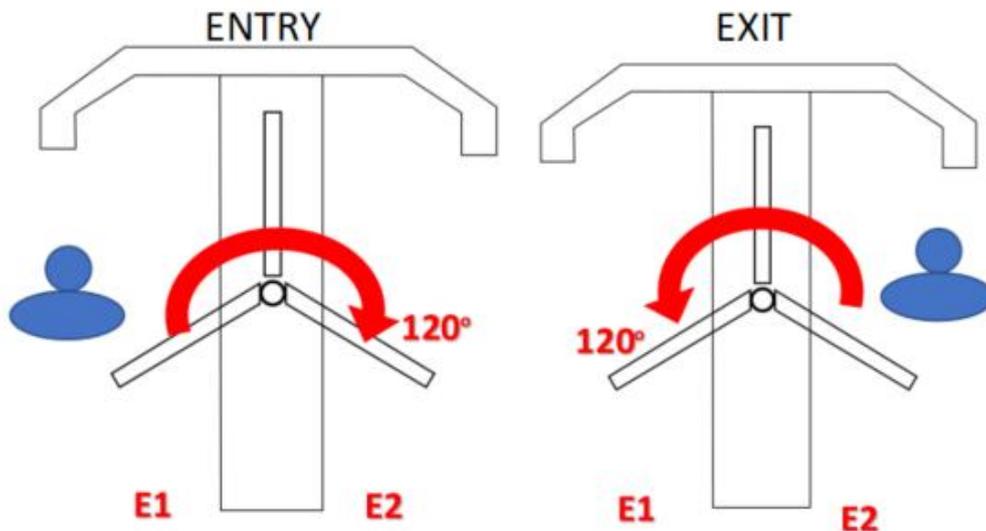**DIP Switch 8: Multiple Access Memory**
Default: OFF
Turn ON to enable multiple access memory:
When valid card is flashed five time (i.e. five signal given to main board), turnstile can be turn for 5 rotations for 5 people to pass before re-locking.

Features

Normal Operation

1. The user flashes a valid card on the card reader.
2. The solenoid lock is released.
3. The user pushes the arm manually while walking through the full height turnstile.
4. The central rotation axis rotates 120° as the user passes through. Solenoid will re-lock at 60° to prevent reverse rotation for tailgating.
5. The solenoid fully locks the flower disc once the rotation completes the 120° cycle.
6. The user exits the turnstile.

Operation During Power Failure
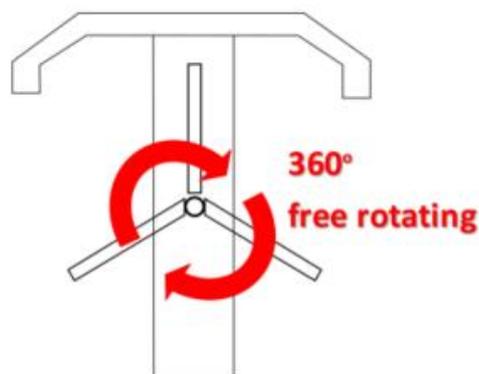
During power failure:
i. Power supply to solenoid lock is cut off.
ii. The bird beak will release the flower disc, central axis is now free to rotate.
iii. When power resumed, the solenoid will automatically re-lock.

INSTALLATION GUIDE

Version Control

Date	Version	Changes
2025-04-23	V1.0.0	First Version.

FAQ

1. Why full height turnstile can be rotated multiple time before locking?

Check and ensure the proximity sensor is working properly. Otherwise, check and ensure the output signal from access controller is 1s.

2. How to achieve free access for one way?

For permanent application, disconnect one of the solenoid from the main board, based on the direction.

For temporary application, short either one of the EX101 or EX102 interface based on the direction.

3. Why turnstile arm is hard to push?

Ensure the Central Rotation Axis is vertical and perpendicular to the base.

Adjust the hydraulic absorber to reduce the force.

If the arm is still hard to push, remove the Central Rotation Axis and check the base bearing to ensure it is in good condition.

4. Why there is noise when the turnstile is turning?

Fine tune the hydraulic absorber to lessen the noise. Otherwise, check and ensure the full height turnstile installation is level and Central Rotation Axis is vertical.

5. Why are there brown rusty spots on the stainless steel panel?

SS304 is generally rust-resistant, not rust-proof. Any prolonged exposure to corrosive element due to lack of maintenance will ultimately cause rusting. Most of the time, the visible tiny rusty spots are metal dust from the environment (e.g. rail dust, brake dust, industrial residue), and can be removed by regular cleaning the surface with microfiber cloth or clay bar.

6. Regular maintenance

- Regular cleaning and protection of the outer housing of the full height turnstile using a stainless steel cleaner (e.g. WD40) is highly recommended to maintain its clean appearance.

- Regularly check the arm rotation to ensure it is neither too loose nor too tight. Fine-tune the hydraulic absorber for smoother rotation.

- Ensure all wiring connections are secured.