

Operating Instructions

Tripod Turnstile

VAATRP01 Series

V1.1

Note: Before operating this unit, please read this instruction completely.

【Preface】

Thank you for choosing tripod turnstile, this is a product with high technology, so please read this manual carefully before operation.

Please keep this manual for future reference.

Only trained professionals who understand electric and mechanical risk of product are qualified to install and operate this type of product, avoiding unnecessary risks caused by incorrect operation.

All rights to improve and perfect our products are reserved.

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1 Product introduction

1.1 Brief introduction

The electronic tripod turnstile VAATRP01, which is an electronic controlled mechanism installed in the building structure, is used to form an access control system. The rotation unit consists of three tubular arms which are positioned at 120° intervals so that when the unit is at rest, one arm will always be in the horizontal position (barrier position). The movement of the rotation unit can be realized by pushing arms lightly. If arm rotates more than a settled position, the elastic potential energy will drive the rotation unit to complete the whole process of rotation

The electronic tripod turnstile, which has integrated the electronic and mechanical rotation, is a kind of advanced access controller. After being integrated with RFID, biometric readers or QR code readers, it can meet various requirements of customers and therefore can be widely used in such sites as conference room, park and railway station, etc.

1.2 Function features

- ①It has the function of overtime automatic reset. After opening the gate, if it does not pass within the specified time, the turnstile is automatic reset, and the passing time is adjustable (default time is 5s);
- ②During power failure, arm will drop automatically allowing free pass through;

③Card-reading Recording function can be set;

④Uniform standard external port, which can be connected with a variety of access control equipment, and can realize remote control and management through the management computer.

1.3 Technical parameter

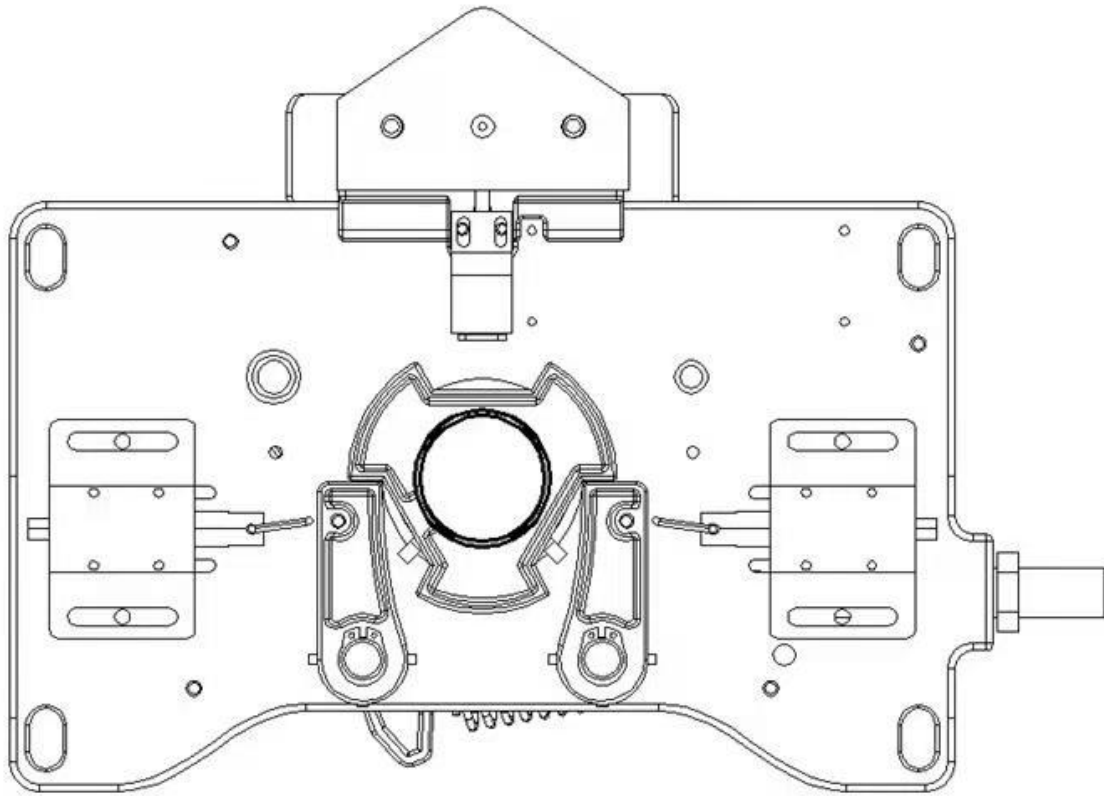
Housing Material	QN1803 stainless steel
Input power	AC220±10% V 50/60HZ
Operating voltage	DC 24V
Relative humidity	≤90%, no condensation
Operating temperature range	-20 °C to 60 °C
Open signal	Passive signals (dry contact)
Communication interface	No
Throughput rate	<35 persons/min
Response time	0.2S

1.4 Product structure and principle

1.4.1 Product structure

The structure of the product is mainly composed of mechanical system and electric control system.

The mechanical system is composed of arm and rotary unit, core and housing.



Core

The electric control system consists of access control device, control board, direction indicator, position sensor, solenoid, power supply.

NO	Name	Function
1	Access control device	IC/ID card access control, fingerprint, face recognition, code reader, access control device send delay signal to the turnstile board door signal. Remote control or button to open the door(select the configuration)
2	Control board	The control center of the system, when receiving the access control device delay signal, it control motor running so that the gate opened, the direction indicator light turns green, while receiving hall sensor, infrared sensor, and judging and processing logic of these signals, keep the gate components of intelligent coordination work
3	Indicator	Display the current channel status
4	Square solenoid	Control shaft close or open

5	Circular solenoid	Falling and upper arm
6	Position sensor	Send the door closing signal to the control board
7	Power Adapter	power supply to control board

1.4.2 Work principle

- 1) Turn on power and lift arm manually, the drop device locks on.
- 2) The LED indicator light on the surface, if the control PCB board receive open signal, turnstile will have green arrows in the direction. The Square solenoid opens, user can push the arm and go through. The Square solenoid open arm turn 120 degrees. This process position sensor be induced, send closing signal to board. The Square solenoid locks immediately.
- 3) Turn off power the arm will fall down.

2 Equipment Installations

2.1 Installation notes

- ❖ · If it tests well before installation, then fixed it; before you install and maintain it, please cut off the power;
- ❖ · The product must be earthed, and an earth leakage breaker is necessary on the power supply;
- ❖ · The depth of buried PVC tube should be greater than 60mm, and the exposed height above the ground should be greater than 50mm. The exit mouth should be bending back to avoid water dipping inside the tube;
- ❖ · Don't change internal wiring of the turnstile casually;

- ❖ · During installation, please make each equipment is aligned;
- ❖ Tighten the mounting screws of each arm;
- ❖ · If you use the turnstile outdoor, it need t need to add a canopy to protect the turnstile from sun and rain.

2.2 Equipment Installation

1) Tool preparations

1	A set of allen key	5	Screwdriver and other common wiring tool
2	Phillips screwdriver	6	Multimeter
3	Adjustable wrench	7	M12x90 Expansion screws *4pcs
4	Rotary hammer	8	Cable Tester

2) Ensure the installation location and the system composition, prepare to install after carrying out the system planning.

3) Assure the foundation base is solid and proper for this type of installation.

4) Mark the fixing position of expansion bolts according to fixing plate on the bottom of each turnstile.

5) Drill hole by impact drill, fix with expansion screws.

6) Fix arm: Before delivery, we will dismantle two arm bar, which can reduce package cost and volume, so before using turnstile, firstly, turn the turnstile power on, raise drop arm down device by hand, which making the circle solenoid attracts drop arm down plate. You should assemble arm bar like following picture.

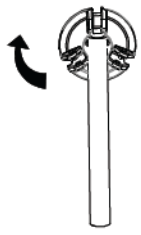


Fig 1. Please rotate turnplate 120°

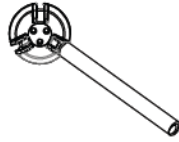
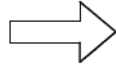


Fig2.

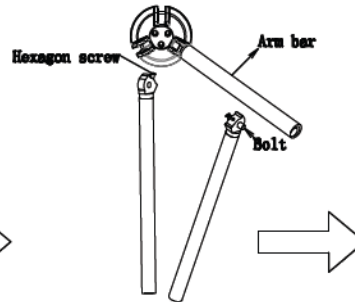
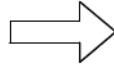


Fig 3. Please loose hexagon socket cap screws

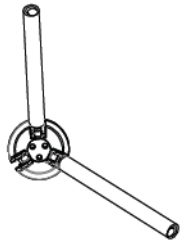
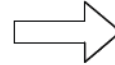


Fig 4. Please insert arm bar

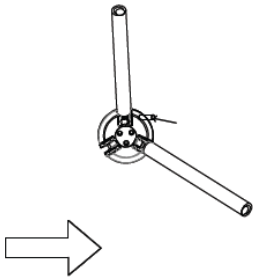


Fig 5. Please insert bolt

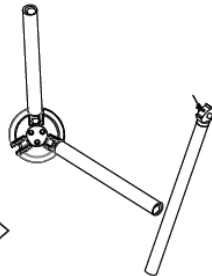
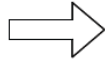


Fig 6. Please tighten hexagon socket cap screws

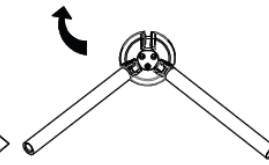
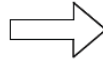


Fig 7. Please install third arm bar like second arm bar

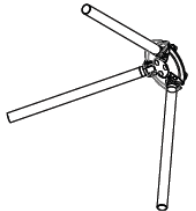


Fig8.

7) Tighten the expansion screw after the functional test is completed.

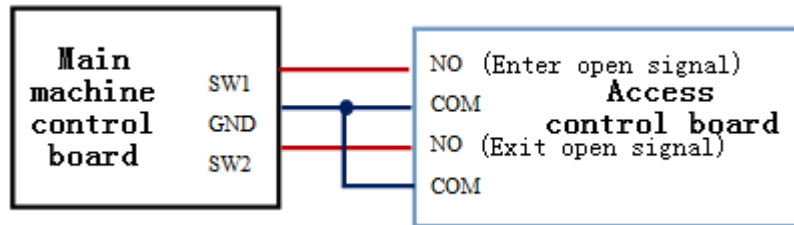
2.3 Connection

1) Connecting AC 110/220V power input

Connect the main machine power adapter to 110 or 220V and connect the protective ground wire.

2) Access control device connect

Access control device send open signal to control board, arm will be released immediately. The relay time of access control device must be set to 0-1 seconds.



Note: It is strictly forbidden for the access control equipment to take power directly from the gate control panel.

2.4 Debugging instruction

1) The test preparation

Such as the installation, we have completed connection of the circuit drive in the plate, and provide AC power for turnstile, control PCB board connected to the computer (control PCB board is external equipment of turnstile, not turnstile inside parts).

2) Check the wiring

When connected power debugging, please check the wiring diagram according to each part of the line is connected.

Note: Protective earth wire of equipment requires reliable grounding.

3) Function test

Turn on power and lift arm manually.

The LED indicator light on the surface, if the control PCB board receive open signal, turnstile will have green arrows in the direction. Push arm and go through, arm turn 120 degree. Turn off power the arm will fall down.

2.5 Notice of use

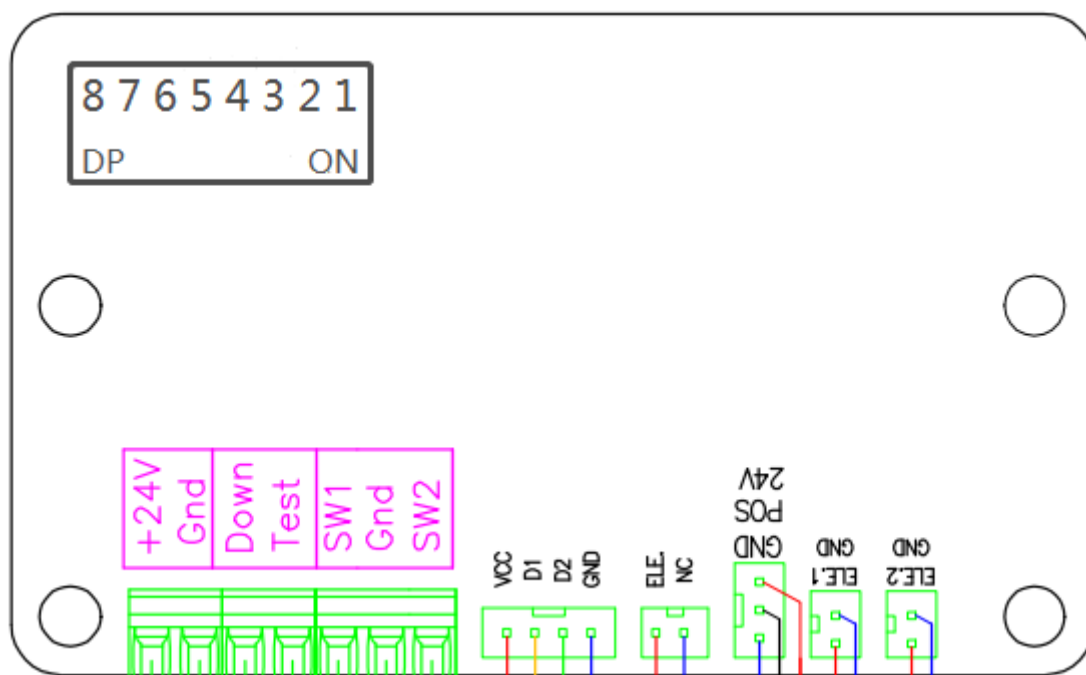
- ❖ Please keep the control button or remote control far away from children;
- ❖ Please don't use the turnstile under the thunder and lightning condition to get

rid of damage to the equipment.

- ❖ Do not permit children to play on or around a turnstile. If child want to go through the turnstile, the parents must look after them.
- ❖ Follow the order when swipe card.

3 Board and wiring diagram

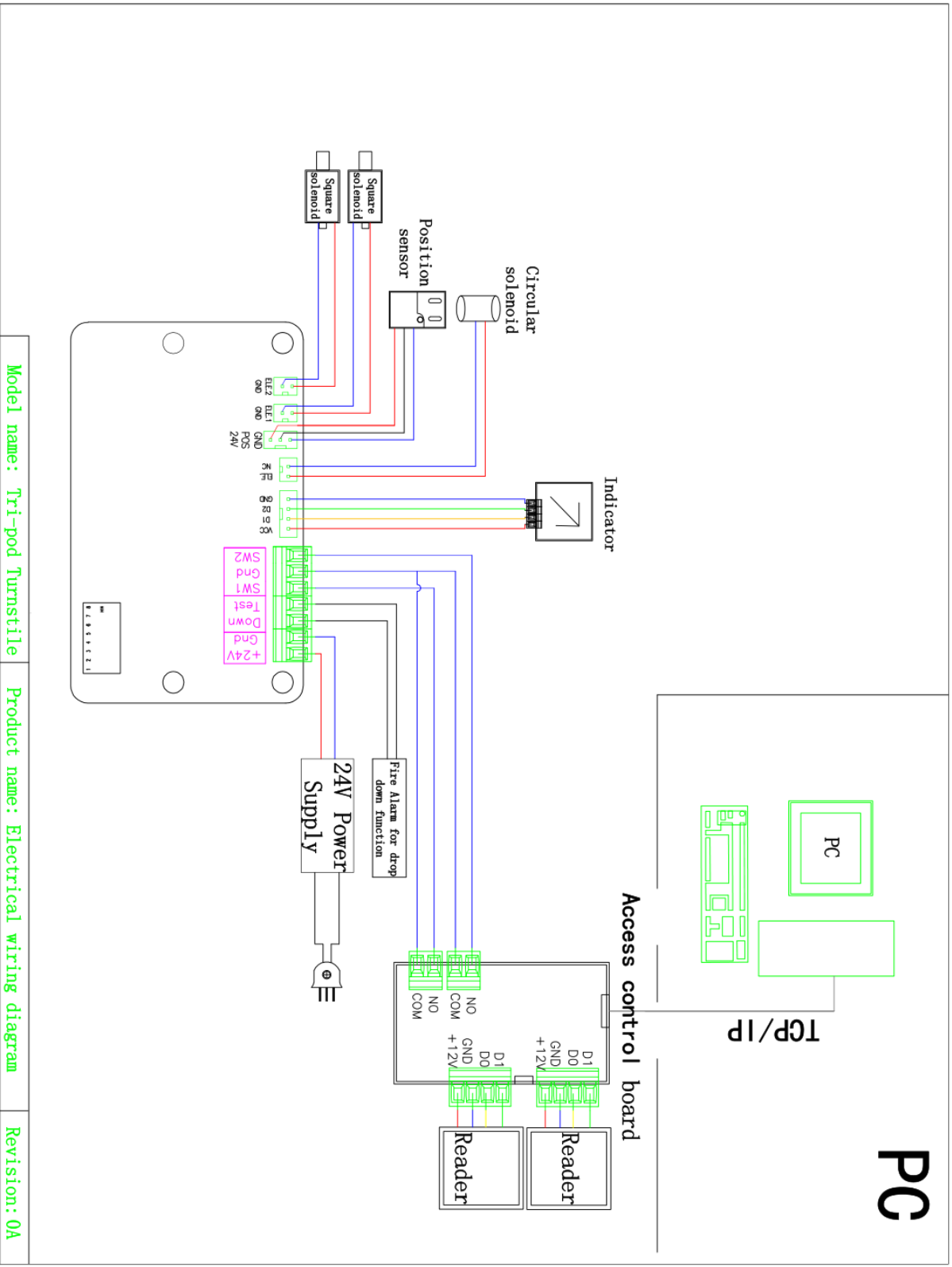
3.1 Board instruction



No	Port Sign	Instructions
1	+24V	24V input power supply to PCB board
2	GND	
3	Down	Testing for drop down function
4	Test	

5	SW1	Entry opening signal input, Dry contact signal and Access control PCB board entry opening relay signal (NO connect SW1, COM connect GND, and the relay time of access control board should be set “0” or “1”
6	GND	common port
7	SW2	Exit opening signal input, Dry contact signal and Access control PCB board exit opening relay signal (NO connect SW2, COM connect GND, and the relay time of access control board should be set “0” or “1”))
8	VCC	+12 V power supply for indicator
9	D1	Entry LED indicator signal input
10	D2	Exit LED indicator signal input
11	GND	+12 V power supply for indicator
12	ELE	+12 V power supply for arm drop down circular solenoid
13	NC	
14	+24V	Position sensor full close in place signal input, once arm turn 120 degree, it will give closing gate signal
15	POS	
16	GND	
17	ELE-1	Output for entry square solenoid, normally 0v t, when board receive open signal. This port will be 24v output
18	GND	
19	ELE-2	Output for exit square solenoid, normally 0v t, when board receive open signal. This port will be 24v output
20	GND	

3.2 Wiring diagram



Model name: Tri-pod Turnstile

Product name: Electrical wiring diagram

Revision: 0A

3.3 DIP switch instructions



Dial code 1-3: pass time;

Dial code 4-8: function mode setting.

Function mode setting					Dial code, dial to ON, means 1			Auto reset time
8	7	6	5	4	3	2	1	Dial code
4. Restore factory settings: Before power-on, dial 4 to ON, and dial 4 to OFF after power-on.					0	0	0	5S
					0	0	1	6S
					0	1	0	7S
5. Flowing water light mode & light bar mode: (Default dial code OFF is flowing water light mode) Set light bar mode: dial 4 and 5 to ON before power on, and dial 4 to OFF after power on.					0	1	1	8S
					1	0	0	9S
					1	0	1	10S
					1	1	0	11S
6. Electromagnet operating mode: (Default dial code OFF means electromagnet: Power off when closing the gate, Power on when opening the gate.) Set electromagnet operating mode: Power on when closing the gate, Power off when opening the gate. Before power-on, dial code 6 to ON, and then power-on again.					1	1	1	12S
7. Sensory switch operating mode: (Default dial code OFF is travel switch) Set limit switch: Before powering on, dial 7 to ON, and then power on again.								
8. Passing memory: (Default dial code OFF is not enabled) Set passing memory: Before powering on, dial 8 to ON, and then power on again.								

With memory function, if swiping valid card 5 times, it can pass five peoples; without memory function, if swiping valid card 5 times, it only can pass one people.

4 Daily maintenance and trouble shooting

4.1 Tips and trouble shooting

Q1: When access board send open signal, arm move reverse and indicator show reverse?

Solution: Exchange SW1 GND and SW2 GND terminal of board.

Q2: Indicator is not working?

Solution: 1. Check wiring of indicator;
2. Replace indicator or board.

Q3: One indicator is not in the correct direction ?

Solution: Interchange the control board D1 D2 wiring.

Q4: Arm can not push when swipe card and indicator show green ?

Solution: 1. Check if the wiring is loose; 2. After startup, measure whether there is voltage output at the solenoid port of the control board.

Q5: Passing two or three people after swipe card at a time.

Solution: Open the upper cover of the cabinet body. Short-circuit the SW1 GND port, the square electromagnet will open automatically. Then short-circuit the POS 12V port. If the square solenoid is not turned off, the

control board needs to be replaced. If it is closed immediately, you need to adjust the travel switch or limit switch close to the middle runner.

Q6: Abnormal noise during operation?

Solution: Check whether the turntable and the rotating rod are scratched.

4.2 Maintenance

1) General indications

The tripod turnstile should be inspected and cleaned at regular intervals in order to maintain the components in good working order and to check for signs of wear. The following indications refer to the installation where the average number of transits per year is equal to two million. When the tripod turnstile is used in a dusty area, the regular interval for inspection should be shortened. If used in the subway or the light rail station, the inspection interval is recommended to be 6 months. The users are also encouraged to determine the interval according to their own situation.

To avoid the risk of electric shock, always ensure that the electrical power is disconnected before inspecting the mechanism.

2) Component

Lock arms and solenoids (Operation to be carried out with the power supply disconnected.): —Grease the pins of the lock arms that slide on the solenoid shaft. —Grease the solenoid shaft and spring, and do not grease the core of the solenoid—check that the shaft/lock arm assembly moves freely.

3) Oil pressure of the damper

Operation should be carried out with the power supply disconnected: --check whether the damper oil spills; --check whether the force exerted by the spring is enough; -- The force exerted by the spring should match that exerted by the damper. Generally speaking, the former need to be slightly more powerful.

4) Upper positioning cam

Operation should be carried out with the power supply disconnected. —Loosen the spring of the positioning lever.—Check the guide way in the cam is clean and not excessively worn. —check some metal powder or the like sticks to the solenoid —Check the guide pin of the positioning lever for excessive play. —Check the magnetic strip is perfectly attached to the edge of the cam —Refit the cam -- adjust the spring of the positioning lever.

5) Tripod

Operation should be carried out with the power supply disconnected. Check tightness of the three securing the base plate to the mechanism shaft.

6) Emergency Drop Arm Device

Clean all dust from the arm detents, the arm drop lever and the relative solenoid. Do not lubricate these parts.

7) Cable and Connectors

Operation should be carried out with the power supply disconnected:

--Check that the wire connectors are firmly attached.

--Check that the terminals are fully tightened.

--Check that the insulation of the wires is in good condition and that no conductors are exposed.

Guarantee Instruction

Our company products are guaranteed for one year, from date of sale, providing free maintenance based on not being damaged by any man-made.

- During the warranty period, all faults caused by the product itself can be maintained for free. Please carry the filled warranty card and the purchase invoice to the authorized service centers across the country or return the machine to our company for free repair.
- Within the period of free maintenance, faults or damages caused by man-made or natural disasters can be maintained with additional charge.
- Over the period of free maintenance, faults or damages can be maintained with additional charge.

The following conditions are not under warranty:

- Damages caused by abnormal operation, man-made or natural disasters;
- Damages after disassembling any portion of the machine (lines, components etc.) ;
- Damages caused by wrong guide of non-professional technicians;
- Damages caused by adding other functions with unauthorized modification or installation with other equipment.

Note: The warranty card and purchase invoice are used as warranty certificates to maintain the machine. Please reserve them carefully. Lose won't repair.

User Data Card

User Name		User Contact		Postcode	
User Address					
Machine Model					
Seller Unit		Seller Contact		Postcode	
Seller Address					
Sell Date					

Maintenance Records

Maintenance Date	Fault Description	Maintenance Method	Maintenance Man	Maintenance Unit Seal