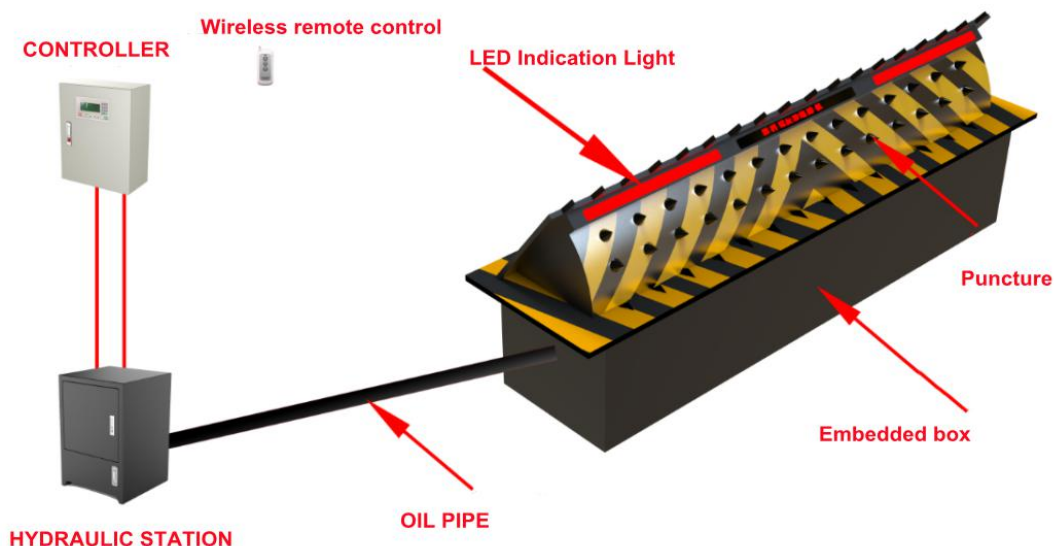




# User Manual and Diagram Of Hydraulic Road Block



## PSHB SERIES

### — Features:

- 1) The structure is sturdy and durable, the bearing load is large, the action is stable, and the noise is low.
- 2) The PLC electronic control system is adopted, and the system operation performance is stable and reliable, and it is easy to integrate.
- 3) The roadblock machine is linked with other equipment such as barriers, and can also be combined with other control equipment to realize automatic control.
- 4) In the event of a power failure or failure, such as when the roadblock machine is in a raised state and needs to be lowered, the raised roadblock machine cover can be manually lowered to a horizontal position to allow vehicles to pass through, or the roadblock can be raised manually To intercept vehicles.
- 5) Adopting the international leading low-pressure hydraulic drive technology, the whole system is safe, reliable and stable.
- 6) The roadblock machine can achieve up and down within 1 second, quickly respond to intercepting vehicles, and possess leading technology in the world.
- 7) There is an LED flashing light on the top, which is not only beautiful at night but also can warn the vehicle.
- 8) The integrated cutting process of raw materials, the panel is formed without welding, which is more durable and anti-collision.



## 二: Parameters

### Road Block

1. System control: electro-hydraulic
2. Passing pressure: container trucks up to 80 tons can pass.
3. Power supply: three-phase 380 (control voltage 24V).
4. System power (w): 3.75KW.
5. Rise time:  $\leq 1-3S$  (adjustable) as fast as 1 second, no impact sound.
6. Falling time:  $\leq 1-3S$  (adjustable) as fast as 1 second, no impact sound.
7. Working temperature:  $-45^{\circ}C \sim 75^{\circ}C$  (suitable).
8. Storage environment:  $-10^{\circ}C \sim 65^{\circ}C$ , rain-proof, moisture-proof and dust-proof.
9. Material: A3 steel, sprayed with anti-rust primer.
10. Color: customized, with yellow reflective strip on the interception part, LED flashing light at the top (optional)
11. Weight: 1.5 tons
12. Protection level: IP68 level (waterproof and dustproof)
13. Anti-collision level: K12
14. Material thickness: 16mm
15. Body specifications: length 4000×width 1000×height 760, lifting height: 500(**Unit:mm**)

### Hydraulic station:



1. Motor: 3HP\*4P three-phase 380V (industrial grade)
2. Oil pump: (gear pump) (industrial grade)
3. Lifting solenoid valve (industrial grade)
4. Heavy-duty recoil hydraulic cylinder: HOB63-200CA+I, 200-long stroke, heavy-duty industrial pole
5. Double-acting double-oil circuit hand pump 2.3ML/time (industrial grade)



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6. Fuel tank volume: 60 liters
7. Hydraulic pipe: PT international standard interface, 1/2 double-layer steel wire high pressure pipe
8. Body specifications: length 500 × width 500 × height 700 (unit: mm)

## **Controller:**



1. PLC control command PLC chip US imported original chip (industrial grade)\*
2. Power switch (industrial grade)
3. Control solenoid valve (industrial grade)
4. Power supply industrial grade (-28-85 degrees)
5. The remote control range is 30M + wire control 100 meters
6. It can be linked with equipment such as vehicle recognition and ground sense
7. Length 400 × width 200 × height 500 (unit: mm)





## 四： Installation Example

1. The roadblock machine consists of a main frame, a hydraulic transmission station and an electric control system.

2、 1.1 Main frame:

3、 The roadblock machine is mainly composed of a turning body or a lifting body, and a base (anti-collision tooth nails can be installed according to customer needs). The whole machine is a steel structure, welded with 16mm national standard A3 carbon steel plate and channel steel, with high load-bearing and anti-collision capabilities; there are no electrical appliances and wiring in the machine body, and it is waterproof and safe. The device is buried in the lane or at the designated location of the gate, and the passage of vehicles is restricted by the instructions of the personnel on duty.

4、 1.2. Hydraulic transmission station:

5、 The hydraulic transmission station is mainly composed of an oil tank, a manual oil pump, a full set of hydraulic solenoid valve sets, a high-power motor, an oil pump, an oil cylinder, an oil gauge, and a high-pressure hydraulic oil pipe. It can be used with roadblock machine (can change the speed of ascending and descending by adjusting valve), the baffle can be lowered manually or raised manually after power failure.

6、 1.3. Electronic control system:

7、 Automatic electronic control part: PLC control main board, leakage switch, non-contact noise and long-life contactor and other precise starting time settings (the impact force generated after the stroke of the anti-cylinder is in place increases the service life of the cylinder).

8、 Automatic controller: including control box, remote control, manual buttons, etc., controlled by the duty personnel.

## Install Guidance:

### 3.1、 cable quantity need for installation:

2.1.1. When installing, first embed the barricade rack to the position where it needs to be installed. Note that the embedded barricade rack should be level with the ground (the height of the roadblock is 760mm).

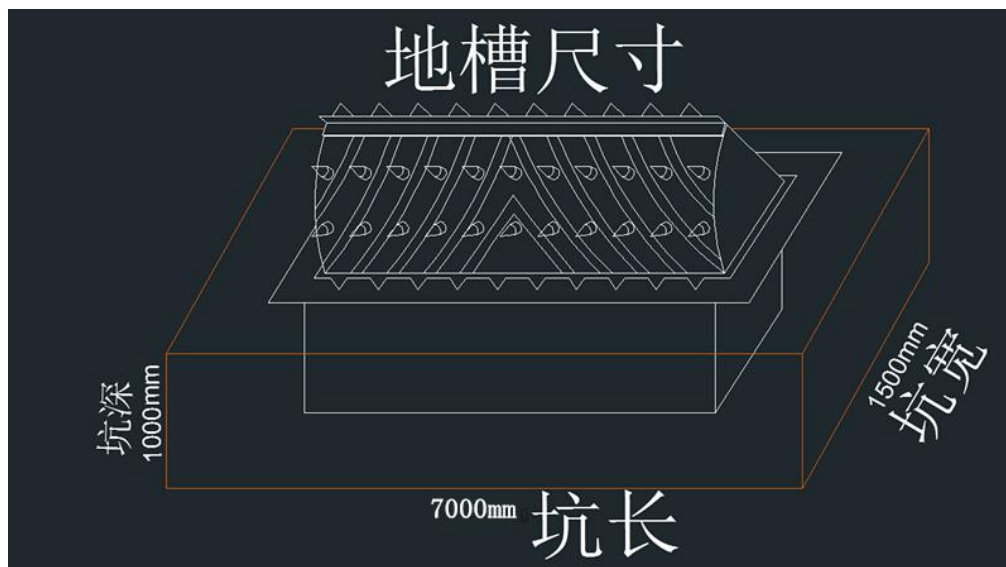
2.1.2. First determine the position of the hydraulic station and the control box when wiring, and insert 1×2cm (oil pipe) between the main frame and the hydraulic station; there are two sets of lines between the hydraulic station and the control box, one of which is 2× 0.5 m<sup>2</sup> (signal control line), the second is 3×4 m<sup>2</sup> (380V control line), and the control input voltage is 380V.



### 3.2. Foundation digging:

At the entrance and exit of the road designated by the user, a square slot (length 4500mm\*width 1500mm\*depth 1000mm) is dug into the main frame of the roadblock (the size of the slot for the installation of a 3.5-meter roadblock

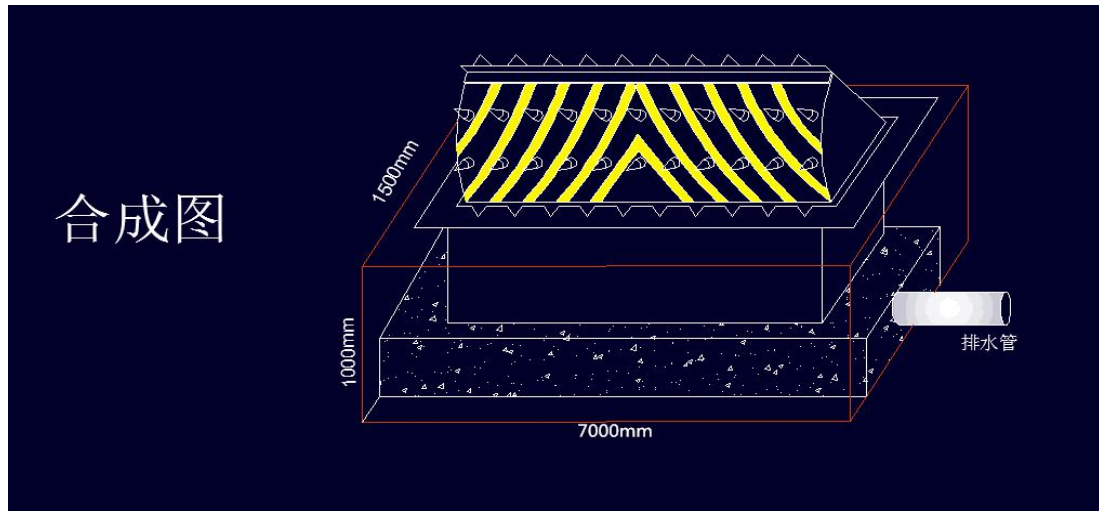




### 3.3. Drainage system:

Fill the bottom of the trough with concrete with a height of 240mm, with high level accuracy requirements (the bottom of the barricade machine frame can all touch the face of the underlying concrete, so that the entire frame can bear the force), and in the middle of the lower part of the trough Place, leave two drain pipes for drainage. .



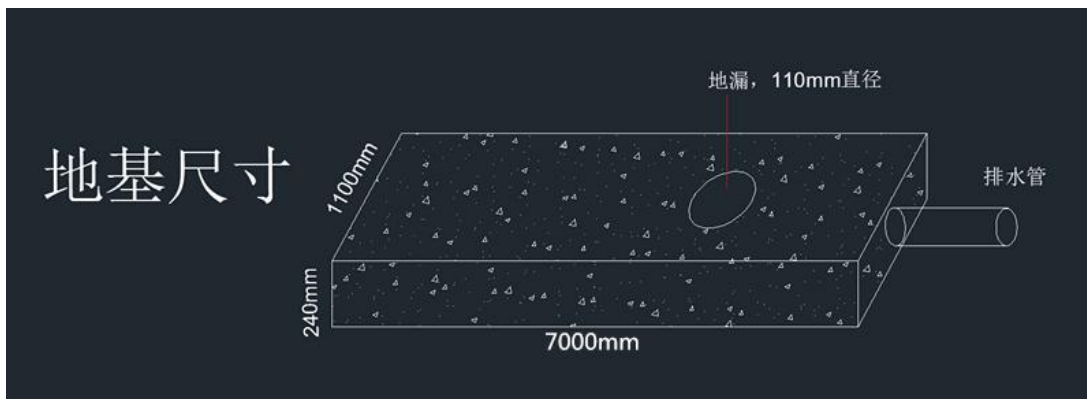


### 3.4. Drainage method:

4.3.1. The manual drainage or electric pumping mode is adopted, and a small pool must be dug near the column, and the manual and electric drainage should be performed regularly. 4.3.2. Adopt the natural drainage mode and directly connect to the sewer. If there is no sewer nearby, it can be used as a reservoir to divert the water from the drain pipe to the reservoir and pump water regularly.



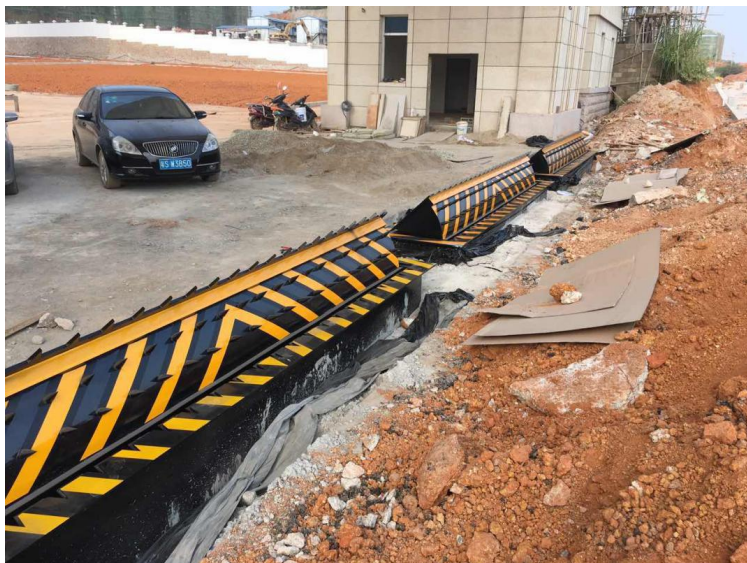




### 3.5、.Put down the equipment, wire and debug



### 3.6. After debugging, backfill





## 5、Installment

### 5.1. Installation location:

The main frame is installed at the entrance and exit of the vehicle designated by the user. According to the actual situation of the site, the hydraulic station should be installed in an appropriate position for easy operation and maintenance, and as close to the frame as possible (both indoor and outdoor on duty). The control box is placed in a place that is easy to control and operate according to customer requirements (next to the operator's console on duty).

### 5.2. Pipeline connection:

5.2.1. The hydraulic station is equipped with pipelines within 5 meters when it leaves the factory. After determining the installation position of the rack and hydraulic station, when carrying out foundation excavation, the layout and arrangement of hydraulic pipelines and control lines should be considered according to the topography of the installation site. Go, and bury it safely while ensuring that the pipeline does not damage other underground facilities. And make a mark in the appropriate position, so as not to damage the pipeline and cause unnecessary losses during other construction operations.

5.2.2. The size of the pipeline embedded groove should be determined according to the specific topography. In general, the embedded depth of the hydraulic pipeline is 10~30 cm and the width is about 15 cm. The embedded depth of the control line is 5~15 cm and the width is about 5 cm.

5.2.3. Wire pipe (PVC pipe) should be added to protect the control line.

### 5.3. Test operation of the whole machine:

After the hydraulic pipelines, control box wiring, and roadblock equipment are connected, check again and confirm that there are no errors before performing the following tasks:

5.3.1. Connect the 380V three-phase power supply.

5.3.2. Start the motor idling, and check whether the rotation direction of the motor is correct, if it is not correct, please change the three-phase access line, and proceed to the next step after it is normal.

5.3.3. Add hydraulic oil and check whether the oil level indicated by the oil level gauge is above the middle.

5.3.4. Start the control button to debug the switch of the roadblock machine. The switch time interval should be longer during debugging, and pay attention to whether the opening and closing conditions of the movable flap of the roadblock machine are normal. After repeated several times, observe whether the oil level indicator on the hydraulic oil tank is in the middle of the oil level gauge. If the oil is insufficient, refuel as soon as possible.

5.3.5. When debugging the hydraulic system, pay attention to the oil pressure gauge during trial operation.

### 5. Barricade machine reinforcement:

After the roadblock machine works normally, the secondary pouring of cement and concrete is carried out around the main frame to strengthen the roadblock machine.

### Fourth, use and maintenance:

#### 1. Daily use and maintenance:



The daily use and maintenance of the hydraulic roadblock machine is divided into three parts: main frame, hydraulic system, and control system. The daily maintenance of the main frame is mainly to clean up the stagnant under the movable flap and dredge the drainage pipe. The daily maintenance of the hydraulic system is mainly to observe the oil level of the oil level gauge and the indication of the pressure gauge. The electric control system should be dustproof and waterproof. All systems should be kept clean and hygienic frequently to extend the service life of the equipment.

2. 500 hours maintenance:

- 2.1. Clean the main frame of the roadblock machine and the stagnant and dirt at each movement pair.
- 2.2. Check and tighten the bolts at the bolt connection.
- 2.3. Check the connecting pipeline and circuit once.

3. One-year maintenance:

- 3.1. Replace the hydraulic oil in the hydraulic station once.
- 3.2. Clean the hydraulic oil tank once.
- 3.3. Replace the oil suction filter element.
- 3.4. Use Shell hydraulic oil as hydraulic oil.

5. Common faults and their elimination:

Common fault causes and troubleshooting methods are shown in Table 10-1:

For faults that cannot be eliminated by the user, you should contact the company's after-sales service department in time, and perform troubleshooting under correct guidance. Do not disassemble without authorization to avoid unnecessary losses.



Table 5-1 Common faults and troubleshooting methods.

Fault characteristics	Failure phenomenon, cause, and location		Method of exclusion	
Can not start	1	Power is not turned on	1	Check and power on
	2	Leakage switch, relay	2	replace
	3	Poor contact of control output contacts	3	Check control output
Roadblock machine movable flap Lax closure	1	There is stagnant material at the closed position of the movable flap	1	Removal of remnants
	2	Is the fall time normal	2	Check system time
The cylinder does not move after starting	1	The motor and solenoid valve do not work	1	Overhaul or replace
	2	Damaged seals in the cylinder	2	Overhaul or replace
	3	Insufficient pressure or oil leakage	3	Check whether the pressure of the oil pressure gauge meets the requirements or if there is oil leakage
Slow movement of the active flap	1	Throttle valve throttling	1	Adjust the throttle valve
	2	Cylinder leakage	2	Overhaul or replace
	3	The tubing joint is not tightened	3	Tighten the connector