

# User Manual

## Tyre Killer

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Applicable model: ZK-TK500

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## Chapter 1 Statement

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(1) We are not responsible for breakdown caused by improper operation.

(2) Due to product updates frequently, this manual may have differences from the actual product, please prevail in kind.

(3) We will not announce any further notice when we update the user manual.

### Contact

Company: ZKTECO CO., LTD

Address: ZKTeco Industrial park, 188 Industrial Avenue, Pingshan, TangXia town Dongguan province, China.

ZKTeco Building, Wuhe road, Bantian, LongGang district, Shenzhen.

Website: [www.zkteco.com](http://www.zkteco.com)

E-mail: [marketing@zkteco.com](mailto:marketing@zkteco.com)

## Chapter 2 General Information

### 2.1 Main Features

Electromechanical tyre killer is one of the highest security vehicle access control products to prevent entering of a vehicle without permission.

Drive unit is placed to one end of the tyre killer, it stands above the ground level and is a complete assembly with the body. In this way, both smooth transmission of motion and minimum effect of external factors are achieved.

To operate this device, you just need to press the remote controller button to raise spike and the spike will be raised within 1~2 second to block the vehicle, and it is one directional driveway control.

- Electromechanical operated
- Blocking width 1m to 6m
- Blocking height of spike above surface level: 520mm
- Loop detector provided for safety
- For manual operation in case of power failure
- The solid blocking spikes 10mm thick welded to the solid rotation axis at a distance of approx. 150mm to each other

## 2.2 Technical Features

<b>Model</b>	ZK-TK500
<b>Material thickness</b>	A3 steel
<b>Surface treatment</b>	Paint with reflective strip
<b>IP rate</b>	IP67
<b>Specified color</b>	Black and yellow
<b>Length</b>	1500/2000/2500/3000/3500/4000/4500/5000/5500/6000mm
<b>Width</b>	550mm
<b>Height</b>	85mm
<b>Raise height</b>	150mm
<b>Max loading weight</b>	80T
<b>Weight</b>	≥0.3T
<b>Spike thickness</b>	12mm
<b>Drive mode</b>	Electromechanical
<b>Working environment</b>	-40°C/+70°C
<b>Raising/Lowering time</b>	1-2s
<b>Power supply</b>	220V(110V: customization)
<b>System power</b>	180W

## Chapter 3 System Components

### 3.1 Tyre-Killer Main Parts

1. Top Plate
2. Teeth
3. Frame
4. Drive Mechanism
5. Control Electronics

### **3.2 Control Cabinet**

Control cabinet is manufactured from A3 Quality Steel with thickness of 2mm. All cabinet parts are electrogalvanized, RAL 2004 orange electrostatically power coated and furnace. Control cabinet is fixed on the main frame by 4 anchors. Top lid transmission rod casing is assembled on control cabinet by help of in oxidizing bolts and washers. There are air circulation openings and lock on front cover.

### **3.3 Mechanism and Drive Unit**

A high torque AC Motor is utilized for driving Electromechanical Tyre-Killer. Coupled to the motor, there is a reducer with 1/53 reduction ratio. Casing of the reducer is cast aluminum, preventing formation of dust. All the gears in reducer are heat treated so that wear is reducer to minimum.

The mechanism is produced utilizing most advanced processes of mechanical engineering. All the ensures are manufactured on CNC machines.

### **3.4 Control Electronics**

Control electronics utilized in Electromechanical Tyre-Killer is programmable logic control. Raise/Lower function can be achieved by limit switches. Besides, safety accessories like inductive loop detectors, flashing lights or red/green lights can be integrated to control electronics very easily. As control of the Tyre-Killer is always through an electronic control cabinet, it is possible to interface any control method as part of a complete site security system.

Lowering Tyre-Killer teeth can be utilized by automatic time delay facility, as well as inputs from other sources. Time delay arming of the electromechanical Tyre-Killer can be adjusted between 0-50 seconds. Power requirement of Electromechanical Tyre-Killer is 220V, 50-60Hz. For safety reasons, only 24V and 5V are running through the control electronics.

## **Chapter 4 Installation**

1. Place the tire-killer to the installation site.

### **Installation and wiring**

- (1) In order to ensure the safety of construction, according to the location of tire killer and control box, combined with the topography, arranging the direction of the line and marking. Prevent other

construction damage.

(2) Generally, the embedded depth of the line is 5-15 cm, and the width is about 5 cm (can walk on the wall); the PVC pipe should be protected when the control line is installed.

### Construction steps

(1) In the position of vehicle entrance and exit, confirm the position according to the size of tire killer, and confirm the excavation of grooves along the underground direction of pipeline.

(2) After the position is fixed, the tire killer can be placed directly on the ground which needs to be installed. The ground needs to be smooth, so that the whole body can balance the force, and then fixed with M10 expansion screw.

(3) When the tire killer is fixed, the power line and signal line are extended.

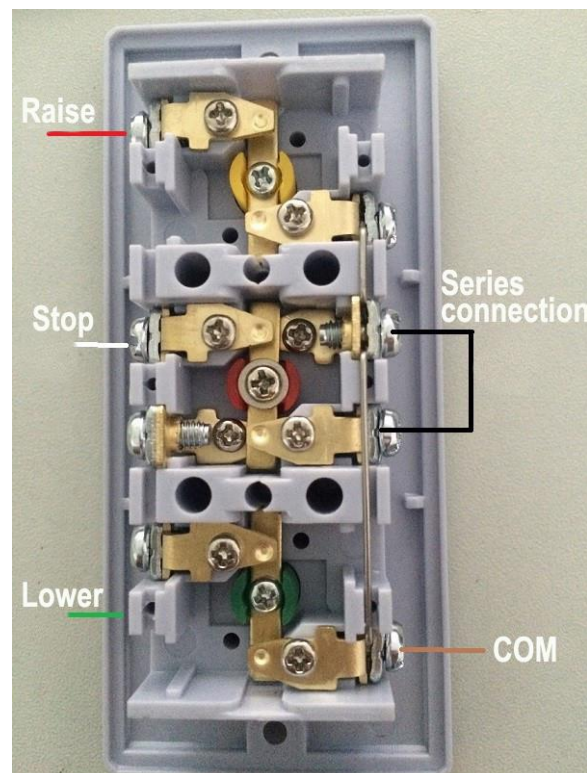
2. Mark the floor through the holes on the base of the tire-killer.

3. Take the tire-killer aside and fix the steel anchors.

4. Put the tire-killer back to its original position.

5. After putting washers on the base plate of the tire killer, through the studs, tighten the nuts.

6. Test device.



(Push button station)



(Control box)

## Chapter 5 Practical trouble shooting procedures

If the Tyre-Killer seems not to be working(properly):

- (1) Make sure there is power. Check 220V current inputs.
- (2) Check fuse on PLC.
- (3) Make sure relay is working properly (Normally it is possible to hear a click when an input command is executed).
- (4) Check motor input cable connections.
- (5) Check loop detector connections.
- (6) Check terminal group connections.

**\*If the system is not running after all these controls please contact with the manufacturer.**



ZK Building, Wuhe Road, Gangtou, Bantian, Buji Town,  
Longgang District, Shenzhen China 518129

Tel: +86 755-89602345

Fax: +86 755-89602394

[www.zkteco.com](http://www.zkteco.com)

