

VECTECH 492EP

WRIST STRAP & FOOTWEAR TESTER

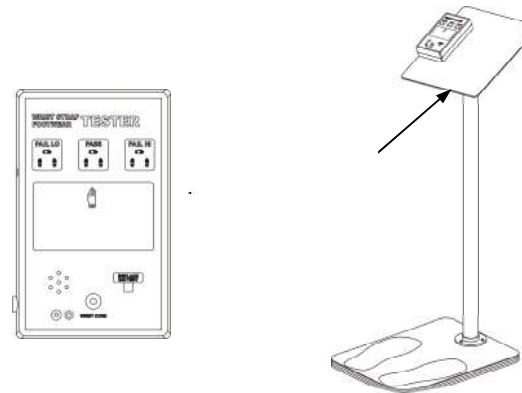
## **MANUAL OPERATION**

Thank you for purchasing this tester. The device is exclusively designed for testing the wearing of the wrist strap and footwear. Please carefully read this manual before operating the device. Store this manual in a safe, easily accessible place for future reference.

## 1. Summary

This tester is a kind of can convenient to quickly test the wrist and foot of ring, conductive shoes or anti-static shoes the wear of the device, according to GJB 3007-97, SJ/T 10694-1996 and the ESD S20.20 AN SI standard production. Tester operation is very simple, green light shows that normal, while the red light said test unqualified (specific usage see test specification). The parameters of the tester are set up in the factory, the user can also according to the need to reset.

## 2. Picture



## 3. Specifications and Characteristics

### 3.1 Specifications

- 1 Power supply: 9VDC or AC, or coupling adapters (8~12VDC)
- 2 Output: with nine testing lights, sound, contact output and lower voltage indicating
- 3 Contact output: Voltage  $\leq 400\text{V}$ (peak value, DC /AC)  
Switch current  $\leq 130\text{mA}$ , contact resistance  $< 30\ \Omega$

Qualification: Contact closing      Disqualification: Contact not closing

- 4 Precision: Wrist strap's resistance  $\pm 10\%$   
Footwear's resistance  $\pm 10\%$
- 5 Weight: 0.6kg
- 6 Out size: 160mm×100mm×40mm

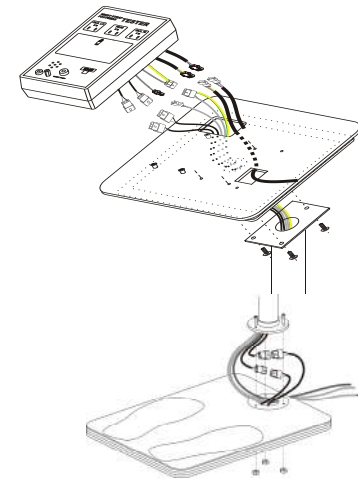
### 3.2 Characteristics

1. This tester can not only separate test wrist band, one foot or both feet (foot ring, conductive shoes, anti-static shoes) wear; And set up a comprehensive test mode, can test the wrist belt and at the same time the foot ring, conductive shoes, anti-static shoes wear situation, save the test time.
2. Tester can be connected to the entrance guard system, the output test signal to the entrance guard system, control personnel in and out of the need to be protected against static electricity
3. Tester adopts micro electric current test, make the test more stable, more accurate test data.
4. Tester batteries electricity shortage, low voltage alarm (REPLACE ') in the red light.

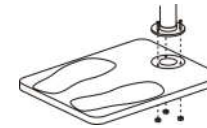
## 4. Installation and connection

1. The foot end test cables (Feet) In the three core plug and socket for white; Two core shielded wire cable is black (including white connecting line for the foot end test, black line for shielding grounding line)
2. Access control cables (Relay Out) the plug & socket is black; Two conductor cable is gray.
3. The Power/ground wire (Power) In four core plug & socket is white. Among them, yellow-green cables for the grounding line, two core gray line for power supply cable (white line is positive, the black wire is negative).
4. The telecommunications cable (RS232) plug & socket for four core is black. Among them, the green line (COM) is a public side, the red line (RXD) for receiving signal, the blue line (TXD) signal lines for launch.
5. The foot end test connection: from the packing column, the foot end test cable wear out from the post. Pillar top wear out test cables (three core white plug) and tester (three core white) socket on the back of the line is linked together, at the bottom of the column in the cable and the cable according to the corresponding plug from the bottom.


\* Note: the foot end test cable connection, please test the connection is correct. If the test cables plugged into the wrong foot end, output indicator will foot, please exchange connection plug location at this time.



6. Fixed columns: after connected at the bottom of the well, remove the package of three 6 x 25 hex socket screws, according to the icon will be fixed on the column base plate, the post tighten screw.

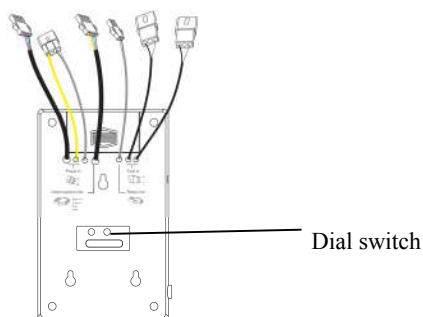


7. Fixed column panel: after connected at the top of the line, using column panel comes with three screws, nuts will be fixed on the upright post panel. Then tester is fixed on the upright post panel: floor has three holes on the back of tester, pillar panel on the left side of the three screw, is used to test instrument are attached in the column on the front panel.
8. Access control cables (gray) and the power supply ground wire (gray & yellow-green) can choose according to need. When used, the entrance guard cables or power supply ground wire wear into the column, wear out, from the top post at one end and the tester is connected to the plug of the relative should be on the back, from the other end of the column at the bottom of the wear out.

 Note: if you are connected to the entrance guard system, please contact switch signal in accordance with the requirements, otherwise you may damage the tester or cause an accident.

## 5. Test Description

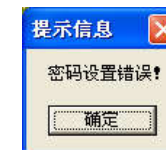
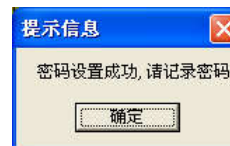
This tester is a digital switch, containing 10 dial the code switch which dial the code switch 1 ~ 10 is used to control the test mode, test the resistance of wrist and foot range and online address Settings, the user can adjust themselves according to need. The inside of the digital switch on the back of tester. Dial the code switch 9 no specific function.



### 5.1 Model specification

When the digital dial the code switch "1" in the next (OFF), said the current mode setting state.

1. When the digital dial the code switch "1" in the next (OFF) and "2" in (ON), indicates the current state for the comprehensive test, that can simultaneously detect the wrist band, foot wear and grounding.
2. When digital dial the code switch "1" in the next (OFF) and toggle switch "2" next (OFF), also represents a separate test model, which only can test the foot side wear and grounding, while can not detect wrist band grounding and wear conditions.
3. When dial the code switch 3 in (ON), said the hand test high-end for 35 m Ω; When dial the code switch 3 next (OFF), said the tests of the hand of high-end for 10 m Ω. Note: 750 k wrist low-end Ω.

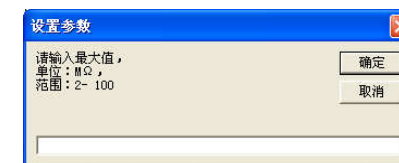
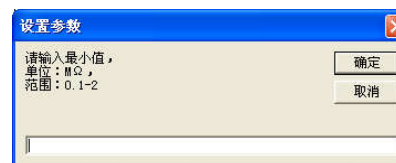


Once the password after the success, need to input the correct password to set the parameters of the acceptable range "the maximum and the minimum".

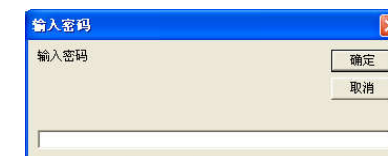
### 8.2 Acceptable range of parameter values set

In the condition of tester address Settings, need in the PC software "acceptable range" of "maximum" and "minimum" enter the appropriate parameter values, to the wrist band, foot ring, conductive shoes or anti-static shoes wear is a good test.

1. The value of the maximum or minimum bar double click the left mouse button, the pop-up "Settings" dialog. If the value of "minimum value" column, double-click the "minimum" pop "Settings" dialog box. If the value of "maximum" column, double-click the "maximum" pop "Settings" dialog.



2. If you have set a password, you must enter the correct password can modify the data. If the input password error does not pop up the Settings dialog.



3. After the input data, click on the "refresh" data. Only set the values of the parameters and what digital dial the code switch Settings right (that is, the address Settings, parameter values can be set successfully).

## 8. PC software Settings

### 8.1 System Settings

There are three sub menu system Settings, "set alarm", "serial port Settings", and "password".

#### 8.1.1 Alarm

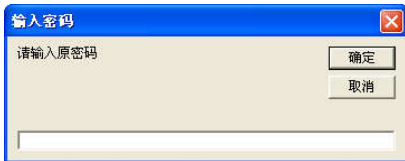
Through the alarm set, and can choose communication when an error occurs if an alarm. Can choose "voice alarm" or "no sound" call the police.

#### 8.1.2 port Setting

Via port Settings, can choose the serial port communication. A total of five serial port COM1 ~ COM5 for choice.

#### 8.1.3 password

Click "system setup" menu under the submenu "password", pop up "please enter the original password"



1. After enter the original password, click on the "confirm" button, the pop-up enter a new password dialog box. Enter a new password, click on the "confirm" button, the pop-up "please enter the password you set again," dialog box.



2. Enter the password again, click the "confirm" button, the pop-up message dialog.

4. When dial the code switch 4 in (ON) and dial the code switch 7 next (OFF), said the tests of the foot high of 1000M  $\Omega$  ;

When dial the code switch 4 and 7 are all next (OFF), said the tests of the foot high of 100M  $\Omega$  .

When dial the code switch 7 said in (ON) ON foot test high-end of 35M.

5. When dial the code switch 5 in (ON), said the foot of the tester measuring low at 750K  $\Omega$  ;

When dial the code switch 5 next (OFF) and dial the code switch 6 in (ON), said the tests of the foot low-end is 500K  $\Omega$  ;

When dial the code switch 5 and 6 are next (OFF), said the tests of the foot bottom at 100K  $\Omega$  .

6. When the next dial the code switch 1, are set in the dial the code switch test gear, dial the code switch in 10, the said double band model, said the next single wrist band model.

7. When in the dial the code switch 1, said the tests of the working mode and gear are set in the upper machine

Chart 1 Dial the code switch---Mode setting

测试端	阻值	数字拨码开关 (开关为白色)										说明			
		1	2	3	4	5	6	7	8	10					
综合测试模式		<input type="checkbox"/>												同时测试手端和脚端	
单独测试模式		<input type="checkbox"/>												仅测试手端或脚端	
单线腕带测试												<input type="checkbox"/>		双线手腕带测试	
双线腕带测试													<input type="checkbox"/>	单线手腕带测试	
手腕	低端 (K $\Omega$ )	100										<input type="checkbox"/>		手测试低端100K $\Omega$	
		750										<input type="checkbox"/>		手测试低端750K $\Omega$	
	高端 (M $\Omega$ )	10		<input type="checkbox"/>											手测试高端10M $\Omega$
		35		<input type="checkbox"/>											手测试高端35M $\Omega$
脚端	低端 (K $\Omega$ )	100				<input type="checkbox"/>	<input type="checkbox"/>							脚测试低端100K $\Omega$	
		500				<input type="checkbox"/>	<input type="checkbox"/>							脚测试低端500K $\Omega$	
		750				<input type="checkbox"/>								脚测试低端750K $\Omega$	
	高端 (M $\Omega$ )	35									<input type="checkbox"/>				脚测试高端35M $\Omega$
		100				<input type="checkbox"/>					<input type="checkbox"/>				脚测试高端100M $\Omega$
		1000			<input type="checkbox"/>						<input type="checkbox"/>				脚测试高端1000M $\Omega$

开关	功能说明
开关 1	set "mode controlled by toggle switch" or "instrument address number controlled by toggle switch"
开关 2	Used to set up "mode is controlled by a toggle switch" or "instrument
开关 3	set the wrist test high-end resistance value
开关 4	cooperate switch 7, used set the ankle test high-end resistance value
开关 5	cooperate switch 6,Used to set the ankle test low resistance
开关 6	cooperate switch 5,Used to set the ankle test low resistance
开关 7	cooperate switch4, 用于设置脚腕测试高端的电阻值
开关 10	用于设置单线腕带和双线腕带模式

## 5.2 Address setting of tester

When the digital dial the code switch "1" in (ON), said the current setting for the tester is the address of the state.

1. Tester is the Numbers on the backs of the switches, can install tester online address. When digital dial the code switch "1" in (ON), the digital dial the code switch 3, 4, 5, 6, said address "instrument", namely, dial the code switch 3, 4, 5, and 6 corresponding binary code value plus one. When the digital dial the code switch 3, 4, 5, and 6 are next (OFF), said "address = 1"; When digital dial the code switch 3, digital dial the code switch 4, 5, 6, said "address, = 2", Specific shown in the following table.

In this state, the testing value of 492 set the values of the parameters of ep PC software, Set up in 492 ep software (which can be reference to "three, qualified range of parameter values set").

2. Connection, click on the 492 ep PC software has "query tester can inquire online communication tester address number.

3. Reset address, must cut off the power to search again

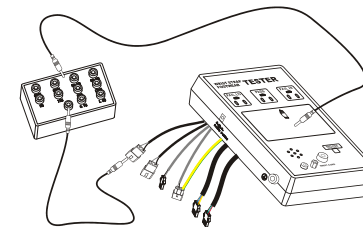
Note: digital switch device address number shown in the following table (digital switch the toggle switch to white).

100K  $\Omega$  / 500 K  $\Omega$  / 750K  $\Omega$  - 35M  $\Omega$  / 100M  $\Omega$  / 1000M  $\Omega$  Test range—foot ring, Page6  
conductive or anti-static shoes

	Standard	Result
<b>100 K <math>\Omega</math></b>	90K $\Omega$	red (FAIL LO)
	110K $\Omega$	green (PASS)
<b>500 K <math>\Omega</math></b>	450 K $\Omega$	red (FAIL LO)
	550 K $\Omega$	green (PASS)
<b>750 K <math>\Omega</math></b>	675K $\Omega$	red (FAIL LO)
	825K $\Omega$	green (PASS)
<b>35M <math>\Omega</math></b>	31.5M $\Omega$	green (PASS)
	38.5M $\Omega$	red (FAIL HI)
<b>100 M <math>\Omega</math></b>	90M $\Omega$	green (PASS)
	110M $\Omega$	red (FAIL HI)
<b>1000M <math>\Omega</math></b>	900M $\Omega$	green (PASS)
	1100M $\Omega$	red (FAIL HI)

## 7.2 Calibration method

Test the wrist or ankle bracelets when low or high end the output of the corresponding instructions. When need to change mode or testing scope, adjust the internal comprehensive tester digital switch, will switch to the corresponding position, and then test.



5. 4. 2 Comprehensive Test Page 11

1. Check whether the end test cable connection plug connection is correct.
2. Wear a wrist band, foot ring, conductive or anti-static shoes wear good shoes.
3. The WRIST band cable directly inserted into the WRIST band jack (WRIST CORD) or connected to a connection column.
4. Two feet by testing personnel respectively on two footprints in the column base plate.
5. Touch the touch pad on the tester (hand icon), and keep the 1 to 2 seconds.
6. If the three "PASS" green light, indicating that the wrist band, foot ring, conductive or anti-static shoes wear good shoes.
7. If the corresponding to the red light somewhere "FAIL LO" or "FAIL" HI bright, should check whether the connection is good, the corresponding wrist band or foot ring, conductive shoes, anti-static shoes are in good condition.

### 6. Battery replacement

Body comprehensive test instrument includes a low voltage indicator alarm circuit, in the red light, please stop test and REPLACE the BATTERY. If you don't replace the battery, continue to test, the test results of accuracy is not guaranteed. Battery replacement is very simple, need to move the tester is lifted the lid on the back of the battery, change a new battery.

### 7. Correct

750KΩ - 10MΩ / 35 MΩ Test range --- wrist

	Standard	Result
<b>100 KΩ</b>	90 KΩ	Red (FAIL LO)
	110 KΩ	Green (PASS)
<b>750 KΩ</b>	675KΩ	Red (FAIL LO)
	825KΩ	Green (PASS)
<b>10 MΩ</b>	9MΩ	Green (PASS)
	11MΩ	Red (FAIL HI)
<b>35 MΩ</b>	31.5 MΩ	Green (PASS)
	38.5 MΩ	Red (FAIL HI)

Table 3 dial the code switch - address Settings

Code switch	Address
	1
	2
	3
	4
	5
	6
	7
	8
	9
	10
	11
	12
	13
	14
	15
	16



## 5.3 The online Test

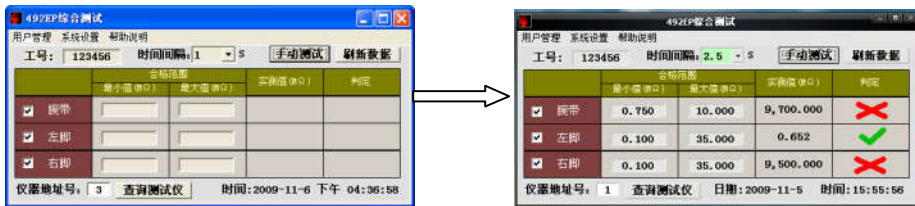
1. Good connection communication mouth and the comprehensive test instrument, and then choose the need to test on the 492 ep software "wrist band", "left" or "right".

2. Click on the "query tester", the system automatically search "address" instrument. If the connection is normal communication, instrument address number will display instrument's address, otherwise you will be prompted to "not find tester".

Find tester, click on "manual test" and refresh the

data, the interface will show the test data and the result of decision.

Note: before the test, the user must determine the login system, realize the online, can detect.



## 5.4 Test Specification

### ⚠️ Attention:

- In the process of test, don't contact with other metal parts.
- Do not use this in the case of insufficient voltage tester, in case the test result is not accurate.

Please check whether the tester is on line right before the test, in case the test result is not accurate.

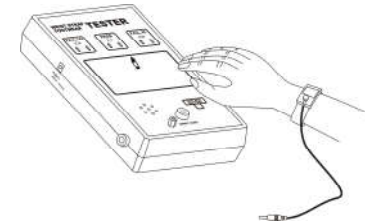
1. Within the tester into 9 v battery, or use the ac coupling type adapter (8-12 VDC power supply, insert the plug of adapter output tester of the upper left jack (INPUT 12 v DC) or insert in the bottom of the post power socket.

2. If need to be connected to the entrance guard system, the entrance guard system and will contact switch line connection.

## 5.4.1 Separate Test Page 8

Separate test state, can test the wrist band or foot ring, conductive shoes, anti-static shoes wear conditions.

### 1. Wrist band wear test



(1) Wear a good WRIST band, the WRIST band cable directly into the WRIST with jack (WRIST CORD) or connected to a connection column.

(2) Touch the touch pad on the tester (hand icon), and keep the 1 to 2 seconds.

(3) If "PASS" green lights, suggesting that the wrist band wear well.

(4) If you hand in the shape of a red "FAIL LO" or "FAIL" HI lights, should check whether the wear is good, the corresponding wrist band, lines are in good condition.

### 2. Foot ring, conductive shoes or anti-static shoes wear test

(1) Dressed after foot ring, conductive shoes or anti-static shoes, by testing personnel two feet stand in the footprints of test plate respectively.

(2) Touch the touch pad on the tester (hand icon), and keep the 1 to 2 seconds.

(3) If tested feet (one foot or both feet) of "PASS" green lights, show that tested the foot ring, conductive or anti-static shoes wear good shoes.

(4) If tested feet (one foot or both feet) of red light "FAIL LO" or "FAIL" HI bright, should check whether the connection is good, the corresponding foot ring, conductive shoes or anti-static apparel are in good condition.

