

# 746 Wrist Strap Tester Operation and Maintenance

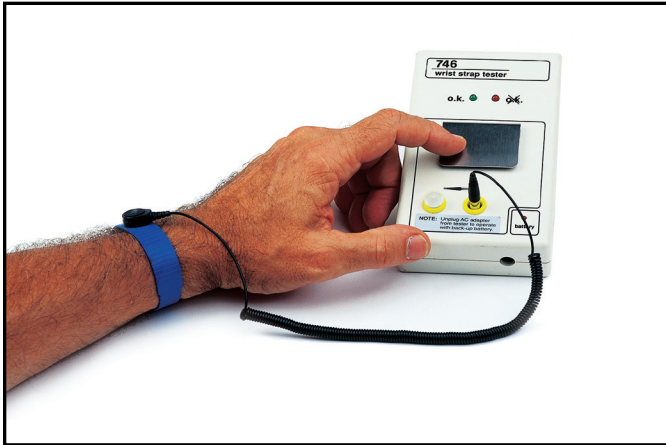


Figure 1. [746](#) Wrist Strap Tester.

## Description

The design of the 746 Wrist Strap Tester allows for testing of wrist straps while being worn by a person or testing of the individual wrist strap components. The 746 Wrist Strap Tester can be mounted to a wall or used as a portable piece of test equipment. It operates from a 120VAC source through an AC adapter, or a standard 9 volt battery. An internally set resistance range extends from 750 Kilohms to 10 megohms . If the wrist strap resistance when tested is within this range, a green LED will illuminate. If outside this range, a red LED will illuminate.

Wrist straps are the primary method used to minimize charge generation on the human body. They must be able to drain this charge as rapidly as it is generated. For this reason, it is important to test wrist straps on a regular basis to ensure they are functioning properly. The test results should be recorded. The form on page 3 of this user's guide can be used as a logbook.

## Specifications

Base Unit	3.75" W x 1.5" H x 6.25" L (95 mm W x 38 mm H x 158 mm L)
Weight	7.5 oz. (213g) without battery
AC/DC Adapter	9VDC regulated 75mA
Accuracy	± 10% (10 megohms limit) ± 20%-0% (750 kilohms limit)
Measurement Voltage	14VDC ± 1VDC (open circuit)

## Installation

The paragraph numbers below are referenced in Figure 2.

## Power Sources

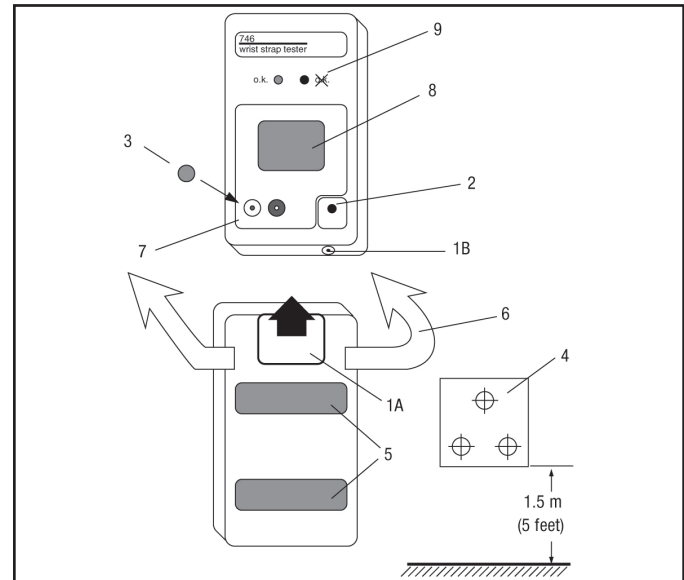


Figure 2. [746](#) Wrist Strap Tester installation diagram.

### 1A. 9 volt backup battery - To correctly install the battery, follow these instructions:

Attach the battery snap connector to the battery. Place the battery into the compartment, locating the snap connector at the opposite end of the compartment from where the battery wires come through the housing, keeping the wires along the top edge of the compartment. Run the battery wires along the side of the battery and tuck them down between the housing and the battery so that the wires clear the cover. Use a small, straight blade screwdriver to gently push the battery wires down below the lip of the compartment. Slide and lock the cover into place. When changing the battery, the battery cover must be removed carefully. To remove the battery cover, slide back the cover slightly. Insert a small, straight blade screwdriver into the opening immediately over the tab area beneath the word "OPEN." Press down with the screwdriver while sliding the cover off. You must use a screwdriver to remove the battery cover.

### 1B. AC/DC Adapter

Connect the AC/DC adapter to the jack at the base of the unit. Plug the adapter into a 120VAC outlet. Caution: If the AC/DC adapter is plugged into the 746 Wrist Strap Tester, it must also be plugged into the wall outlet to allow the unit to function. If the 746 Wrist Strap Tester is to be powered with battery only, the AC/DC adapter MUST be disconnected from the DC input jack (1B) on the tester.

### 2. Battery Indicator

### 3. Jack Cover

Insert the plastic cover into the yellow wrist strap plug-in jack that is not being used. The jack on the right fits standard banana plugs used in North America. The 746 Wrist Strap Tester is now ready for use.

### 4. Wall Mounting

The enclosed SCS Dual Lock Wall Mounting System adhesion discs must be screwed onto the wall, using the attached template, approximately 1.5 m (5 ft.) off the floor. Drill three holes of 5 mm (0.2 in.) diameter at marked locations.

5. The enclosed Dual Lock Adhesion Strip must be cut in two halves and adhered to the rear of the 746 Wrist Strap Tester, parallel to the bottom edge and below the battery compartment. Make sure the area on the 746 Wrist Strap Tester where the adhesion strips are to be placed is free of dust and dirt. Press the back of the case firmly against the discs to secure the tester to the wall.

6. For removal, lift the 746 Wrist Strap Tester at the two top corners with both hands.

## Testing Procedure

### 7. Wrist Band/Cord Test

Put the wrist band on with the ground cord attached and insert the ground cord banana plug into the yellow wrist strap plug-in jack.

8. Depress the metal contact plate and hold.

9. One of the LED indicators will illuminate. An illuminated green LED indicates that the wrist strap assembly performs within the resistance range of 750 kilohms to 10 megohms. If a red LED is illuminated, the resistance of the wrist strap assembly may be outside the range of 750 kilohms to 10 megohms. To check the resistance of the ground cord, leave the banana plug end attached to the tester. Unsnap the cord from the wrist band. Place the metal side of the ground cord snap end against the metal contact plate. Depress the plate and check to see which LED illuminates. If the red LED illuminates, the ground cord is outside of the resistance range. If the green LED illuminates, the ground cord is "OK" but the wrist band may need to be replaced. NOTE: In some cases, a high contact resistance between the person's skin and the wrist band will cause the tester to indicate a red LED (greater than 10 megohms). This higher resistance may be caused by dry skin or hair on the wearer's wrist. A loose fitting wrist band can also cause intermittency or high resistance. If these conditions do not exist, a new wrist band should be obtained and tested on the person.

## Verification Procedure

The 746 Wrist Strap Tester cannot be adjusted by the user, but the following steps can be used to verify that the 746 Wrist Strap Tester is operating within its specification.

### Equipment needed

1. Resistance substitution box, 700 kilohms - 11 megohms, accuracy < 2%.
2. Two lead wires to connect the resistance box to the 746 Wrist Strap Tester.

### Checking wrist strap test circuit

Connect the resistance substitution box to the tester as shown in Figure 3. Adjust the resistance substitution box to each value of resistance indicated in the test table below and press contact plate A. The LEDs will indicate, as shown below, if the unit is functioning within specifications.

Resistance Substitution box settings	Resistance range of the tester	LED Indication
750 kilohms	750 kilohms	Red
900 kilohms		Green
9.0 megohms	10 megohms	Green
11.0 megohms		Red

The 750 kilohms threshold is approximate for that range and could vary slightly. Actual threshold resistances are not listed.

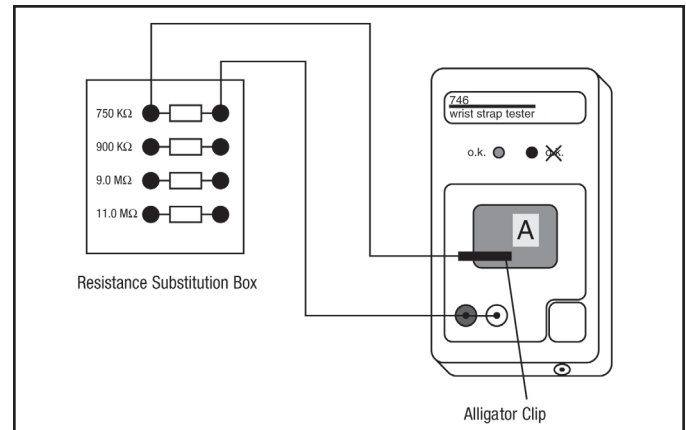


Figure 3. Checking wrist strap test circuit.



Test Parameters:	min.	750K $\Omega$
	max.	10M $\Omega$

Serial No. \_\_\_\_\_

## Safety Information

**Intended Use:** The SCS 746 Wrist Strap Tester was designed and tested to be used for measuring the electrical resistance of single-conductor wrist strap assemblies.

**Battery Replacement:** The use of an 9V alkaline battery is recommended for the SCS 746 Wrist Strap Tester.

If the AC/DC adapter is plugged into the 746 Wrist Strap Tester, it must also be plugged into the wall outlet to allow the unit to function. If the 746 Wrist Strap Tester is to be powered with battery only, the AC/DC adapter **MUST** be disconnected from the DC input jack (1B) on the tester.

- Battery may explode if misused. Do not recharge or disassemble.
- Do not dispose of in fire.

The following information is only for EU-members States:  
The mark shown to the right is in compliance with Waste Electrical and Electronic Equipment Directive 2002/96/EC (WEEE). The mark indicates the requirement NOT to dispose the equipment as unsorted municipal waste, but use the return and collection systems according to local law.

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