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# WSST-300

## WRIST STRAP SYSTEMS TESTER



# OPERATIONAL MANUAL

**IMPORTANT!! READ THIS MANUAL BEFORE OPERATING  
UNIT!!**

# WSST-300

## WRIST STRAP SYSTEMS TESTER

The Voyager wrist strap system tester model WSST-300 is manufactured by Pinion Products Corporation and designed to permit a fast, simple, safe, and convenient means to test the integrity of the total static dissipative wrist strap systems. All of the elements of the wrist strap system; continuity of the strap, integrity of the strap protective resistor and satisfactory strap to skin contact is confirmed by simply depressing the top cover of the tester. The WSST-300 tests the operator for a resistance to ground greater than 750K ohms and less than 10 or 100 megohms, depending on the range selected with a switch. The upper limit tests whether static is being effectively dissipated from the operator. The lower limit of 750K ohms is considered a minimum for reasons of personnel safety. The WSST-300 may also be used to test other grounding methods such as ankle straps or heel straps with conductive flooring.

### **OPERATING INSTRUCTIONS**

The WSST-300 should be located on or near a workstation. Installation of the WSST-300 consists of connecting the post on the back of the unit to ground using the wire provided and selecting the desired range for the upper limit. The upper limit should be selected based on the ESD sensitivity of the components being handled by the operator. The WSST-300 case must be isolated from ground, with only the rubber feet touching the work surface. Operators should test their wrist strap system several times a day.

To operate the WSST-300, simply depress the top cover of the unit while the wrist strap is being worn. A tone and green light indicates that the wrist strap system (person, strap, and ground connection) is effectively dissipating charge. The tone will come on only when the green light is on. An amber light indicates a resistance too high (greater than the upper limit of 10 or 100 megohms) to satisfactorily dissipate static charges within desired time limits. A red light indicates the resistance to ground is below the lower limit of 750K ohms.

The WSST-300 may be used to test just the wrist strap. This test is performed by pressing the operator end of the strap to the top plate of the unit while the ground end of the strap is connected to the post on the back of the unit. The lights and the tone indicate the same information for the resistance of the wrist strap.

### **TROUBLESHOOTING**

Most apparent problems with the WSST-300 can be traced to a weak or dead battery, or improper ground connections.

While depressing the lid, if the light levels are low, there is no tone when the green light is on, or there are no light or tone, the 9-volt battery should be replaced. To replace the battery, remove the 4 screws on the sides of the unit and lift the lid off. Replace the battery and reassemble the unit, making sure the lid still pivots on the screws.

If test results seem to be wrong, check that the unit and the wrist strap are grounded properly. They should be attached to a common ground. The WSST-300 ground wire should be checked for continuity and the wrist strap should be tested separately for its specified resistance. If all of this checks out, return the unit to Pinion Products Corporation for calibration.

## **SPECIFICATIONS**

Parts included:

WSST-300 unit  
Ground wire (7ft, with alligator clip on one end)  
Documentation (instruction sheet)

Resistance Tolerances:

Lower Limit -	750K ohms	±10%
Upper Limit -	10 megohms	±15%
	100 megohms	±20%

Battery:

9 volts (battery life > 3 yrs typical for 10 tests/day)

Test Voltage:

7.6 volts normal

## **CALIBRATION CHECK**

The calibration of the WSST-300 should be checked every year, using the procedure defined here or using the Pinion Products Corporation, WSST-CAL calibration check unit. The WSST-300 is checked for calibration by checking the test results for resistances at each of the three possible limits, at the extremes of the tolerance values. The following resistance values should be used, giving the results listed. The resistance used should be within the tolerances listed. Perform the test by connecting one end to the resistor to the post on the back of the unit and the other end to the lid of the unit, while depressing the lid to activate the unit.

Lower limit (750 KΩ)	675KΩ(±1.0%)	red light	no tone
	825KΩ(±1.0%)	green light	tone
Upper limit (10MΩ):	8.5MΩ(±1.5%)	green light	tone
	11.5MΩ(±1.5%)	amber light	no tone
Upper limit (100MΩ):	80MΩ(±4%)	green light	tone
	120MΩ(±4%)	amber light	no tone

Contact Pinion Products Corporation for further technical assistance in the case that the calibration does not check out.

## **RELATED PRODUCTS**

Pinion Products Corporation offers the following related products:

GST-400	Ground System Tester (WSST-300 with work surface to ground test capability)
WSST-CAL	Calibration check unit for WSST-300 and GST-400
SRM/110	Surface Resistivity Meter
RTG-210	Resistance To Ground Meter
SRM/RTG	Combination Meter

Contact Pinion for information on these and other products offered.