

## HIGH SPEED, HIGH ACCURACY PERSONNEL TESTER AND STAND Installation, Operation and Maintenance



Figure 1. 222523 Personnel Test Stand.

### Description

A digital instrument with a programmable IC at its heart that will test the resistance of an operator's grounding system(s) mounted on a black metal frame with a black wooden base board. The 222522 will test the operator's ESD footwear. The 222523 will additionally test the operator's wrist strap. The stations test both feet simultaneously. The instrument will indicate whether the resistance is in the ranges specified in EN 61340-5 and ANSI/ESD S1.1 & S20.20.

"Wrist straps shall be checked before use. Each check shall be made with the wrist band worn in contact with the wearer's skin and with the ground cord attached to the appropriate tester." (EN 61340 5 1 paragraph 9.6 Daily checks, paragraph 9.6.2 Wrist strap) "Where toe and heel straps are used as ESID footwear, once these are worn outside the EPA [ESD protected area], particularly on carpets, they are likely to accumulate fluff and become ineffective; this

requires that they be checked or replaced on every visit to the EPA. ...When ESD footwear is used, it should be noted that ESD footwear alone cannot achieve protection, but needs to be used in conjunction with a suitable ESID floor." (EN 61340-5-2 Paragraph 5.2.8 Footwear) "All wearers shall check that their heel and toe straps meet requirements [of Table 1 NOTE 2 – 'When the footwear/floor systems are used as the primary means of grounding personnel, the resistance of the combination shall be determined by the ESD co-ordinator, and is recommended to be between 7,5 x 10E5 ohms<sup>1</sup> and 3,5 x 10E7 ohms<sup>2</sup>]. The check shall be made before entering the EPA." (EN 61340 5-1 Daily checks, paragraph 9.6.3 Non-permanent footwear)

### Inspection

Remove the test unit from the carton and inspect for shipping damages.

Each 222522 unit should include the following:

- 1 Test unit, item #222522
- 1 Test Stand Assembly

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- 1 Test unit, item #222523
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### Installation

1. Remove the components from the packaging.
2. Lay out the baseboard and upright bar using the packaging to protect the paintwork.
3. Stand the baseboard on the rear edge and offer the upright to connect the 2 leads and align the 4 bolt holes.
4. With the leads connected, feed the surplus cord back into the upright, and then fit the four bolts from the top. The washers and nuts can then be fitted and tightened.

5. Stand the test stand up.
6. Insert the tester plugs through the two larger holes in the instruction panel. The connectors on the back of the tester fit into the sockets on the upright.
7. Place both in position, using the two M5 bolts to secure the tester & panel to the upright.
8. Perform a check on each plate individually to check the connections. If practical, remove a shoe and stand in stocking feet on one footplate. Perform a test - you should obtain a pass or fail low. (Most likely fail low). Repeat the test with the foot on the other test plate.
9. The test station is now ready for use.

### Procedure to test footwear

1. Wear ESD shoes or heel grounders as prescribed.
2. Stand on the footplates.
3. Press the round metal button on the tester with one or two fingers. The tester will now indicate whether the total resistance is within the acceptable range.
4. Green light and buzzer indicate that the total resistance is either less than 10MΩ or less than 35MΩ.

#### Green = OK

You may now enter the EPA.

5. A red light indicates non-conformance.

#### Red = FAIL

Do not proceed in the usual manner but contact your supervisor or follow your company procedure.

6. Contact your supervisor if the battery low light comes on.

### Procedure to test wrist strap

1. Wear wristband. Choose one that fits snugly or adjust it to do so.
2. Connect the ground cord securely to the band using the snap connector.
3. Connect the other end of the cord to a matching termination on the tester.

4. Push the round metal button in the centre of the tester with one finger. The tester will now indicate whether the total resistance is within the acceptable range.
5. Green light and buzzer indicate that the total resistance is either less than 10MΩ or less than 35MΩ.

**Green = OK**

You may now enter the EPA.

6. A red light indicates non-conformance.

**Red = FAIL**

Do not proceed in the usual manner but contact your supervisor or follow your company procedure.

7. Contact your supervisor if the battery low light comes on.

**In case of non-conformance**

The instrument measures the resistance of the external circuit between the metal contact button and the cord connectors or the foot test plates. The wristband and cord, the plates and the footwear, the connection to the operator, the operator's body resistance and the fingertip button contact are all part of the circuit. In case of a failure being indicated, determine whether the wrist strap or the footwear alone is failing by ensuring that the other elements of the circuit are sound.

**Note:**

If 'battery low' light comes on, insert a new 9volt alkaline PP3 battery. The 'battery low' threshold is factory set at 6.5 volt.

**Calibration**

All resistances are in-built using matched fixed resistors. They are measured using an ohmmeter, which

is of known accuracy and standards used are traceable to UKAS. No variable resistors e.g. potentiometers are used. The resistances should nonetheless be re-checked once a year.

Use a calibration unit such as our product code 223002.

The potentiometers are accessible through the two holes on the left-hand side of the case. The upper hole allows the upper limit to be adjusted, the lower hole the lower limit. Follow the procedure described on TB-7543. Alternatively, we offer a calibration service.

**Specifications  
Resistance Limits**

**Wrist straps:** Low - 0.75MΩ  
High - 10 and 35MΩ

**Foot wear:** Low - 0.1MΩ  
High - 10 and 35MΩ

**Accuracy** ±5%

**Weight (of tester)** 0.1kg excluding battery

**Weight (of test station)** approx. 8kg

**Dimensions (of tester)** 145 x 90 x 32mm

**Power supply** 1 x 9 volt PP3 cell, preferably alkaline

**Battery life** typical 2500 tests (5s per test)

**Test voltage** maximum 24V

**Short circuit current** 12μA max

**Limited Warranty**

Vermason expressly warrants that for a period of one (1) year from the date of purchase, Vermason High Speed, High Accuracy Personnel Testers and Stands will be free of defects in material (parts) and workmanship (labour). Within the warranty period, a unit will be tested, repaired or replaced at Vermason's option, free of charge. Call Customer Service at 0044 (0) 1462 672005 for a Return Material Authorisation (RMA) and for proper shipping instructions and address. Any unit under warranty should be shipped prepaid to the Vermason factory. You should include a copy of your original packing slip, invoice, or other proof of purchase date. Warranty repairs will take approximately two weeks.

If your unit is out of warranty, Vermason will quote repair charges necessary to bring your unit to factory standards. Call Customer Service at 0044 (0) 1462 672005 for a Return Material Authorisation (RMA) and proper shipping instructions and address.

**Warranty Exclusions**

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED. The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean or repair products.

**Limit of liability**

In no event will Vermason or any seller be responsible or liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.