NORASTAT® EPA KITS
Installation, Operation and Maintenance

Made in Britain

Figure 1. 231695 Norastat® EPA Kit.

Description

Vermason EPA kits can be used to set up a safe working area for a single user, a self contained EPA. All Vermason EPA kits are supplied with a guide to Electrostatic discharge control, to enable the user to comply with the recommendations of EN 61340-5-1.
The kits can be used as a permanent workstation or folded away for field service applications. All components are manufactured in the UK.

"All field work shall adhere to the requirements specified for permanent EPA with respect to the material quality, training, labelling, packaging and personal responsibilities.

Field work shall be carried out in accordance with the requirements of 5.3.

The operator, any temporary work surface and flooring and the equipment being serviced shall be bonded and, where practical, connected to EPA ground (see figures 14 and 15).

When ESDS are removed from equipment and transferred to a temporary work surface away from the equipment, the ESDS shall be placed in protective packaging as in table 2.

Faulty ESIDS which may be required for failure analysis or repair shall be placed in protective packaging prior to removal from the EPA." [EN 61340-5-1 paragraph 5.4 Field work]

Per EN 61340-5-1 Figure 14 Field Work Implementation of an EPA:

- "Only handle unprotected ESDS [ESD sensitive items] when bonded to system
- Bond mat to system with ground cord
- Only rest ESDS on grounded mat"

The kits are designed to create an EPA, a working space where static-sensitive electronic components may be unpacked and handled with electrostatic charges minimized reducing the risk of being damaged by electrostatic discharges (ESD).

They are suitable for general use - in stores, assembly and packing areas. The mats are static dissipative which has generally been proven to provide protection in electronics manufacturing. The kits can be used where powered electrical equipment is to be used, as the mats are static dissipative.

Inspection

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

Each 231675 and 231695 kit includes the following:
1 Hard-wearing Norastat® work surface with Four 10mm male studs
1 Adjustable anti allergenic wrist band set
1 Norastat® protector pad
1 Connection earth bonding point
1 Grounding cord
1 EPA warning sign

Each 231660 and 231665 kit includes the following:
1 Hard-wearing Norastat® work surface with Four 10mm male studs
1 Vinyl floor mat with Four studs
1 Norastat® protector pad
1 Adjustable anti allergenic wrist band set
1 Connection earth bonding point
2 Grounding cords
1 EPA warning sign

Each 231685 kit includes the following:
1 Hard-wearing Norastat® work surface with Four 10mm male studs
1 Adjustable anti allergenic wrist band set
1 Earth bonding point block with built in wrist strap tester
1 Earth facility bracket
1 Grounding cord
1 EPA warning sign

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Instructions for installation and use

Kit with Bench Mat and UK Plug (231675 and 231695)

1. Lay the bench mat loose on the workbench. It forms the working surface.
2. Mount the "caution" sign in such a position that it can clearly be seen by anyone approaching the ESD protected area.
3. Connect the conical 10mm socket of one of the straight ground cords to the mat.
4. Connect the other end of the straight ground cord to one of the 10mm press studs on the EBP plug. Insert the EBP plug into a mains socket in order to obtain an Earth connection. The bench mat is then held effectively at Earth potential.
5. The bench mat determines the boundaries of the EPA.
6. Connect one end of the coiled cord to a 10mm press stud on the EBP plug.
7. Connect the other end of the coiled cord to the press stud on the wristband. Fit the band snugly around the wrist. The operator is then also connected to Earth potential.
8. Test the assembled kit for resistance to Earth: that of the mats should be approximately 5 x 10^6 to 5 x $10^7\Omega$ at 100V test voltage, that of the operator > 0.75 < 35MΩ at < 30V.

Kit with Bench Mat, Floor Mat and EBP Bar (231660 and 231665)

1. Lay the bench mat loose on the workbench. It forms the working surface. The operator pad should be placed on top of the workbench mat to protect the area most used.
2. Mount the "caution" sign in such a position that it can clearly be seen by anyone approaching the ESD protected area.
3. Connect the conical 10mm socket of one of the straight ground cords to the mat.
4. Connect the other end of the straight ground cord to one of the 10mm press studs on the EBP plug. Insert the EBP plug into a mains socket in order to obtain an Earth connection. The bench mat is then held effectively at Earth potential.
5. Lay the light grey vinyl floor mat in front of the work area. Using adhesive tape secure it in position.
6. Connect the conical 10mm socket of the second straight ground cord to the mat.
7. Connect the other end of the straight ground cord to one of the 10mm press studs on the EBP plug. The floor mat is then held effectively at Earth potential.
8. The bench mat and the floor mat together determine the boundaries of the EPA.
9. Connect one end of the coiled cord to a 10mm press stud on the EBP plug.
10. Connect the other end of the coiled cord to the press stud on the wristband. Fit the band snugly around the wrist. The operator is then also connected to Earth potential.
11. Test the assembled kit for resistance to Earth: that of the mats should be approximately 5 x 10^6 to 5 x $10^7\Omega$ at 100V test voltage, that of the operator $\geq$ 0.75 $\leq$ 35MΩ at < 30V.

Kit with Bench Mat and Wrist Strap Tester (231685)

1. Lay the mat on the workbench or table. It forms the working surface and determines the boundaries of the ESD Protected Area (EPA).
2. Mount the earth facility bracket conveniently out of the way, usually on a wall at the rear of the work bench. Connect the bracket to earth, either electrical mains earth or to metal piping, such as a heating system or the frame of the building.
3. Mount the EBP tester (224709) on the work surface or onto the side of the bench, and route its ground cord to the earth facility. The latter should be checked for correct path to earth.
4. Connect one end of the straight mat ground cord to a 10 mm press stud on the mat and the other end to the earth facility.
5. Connect the power supply to the mains supply and the DC plug to the tester, 224709. This should power the unit and the 'Fail High' LED should come on.
6. Connect one end of the coiled cord to the free 10mm press stud on the EBP tester.
7. Connect the other end of the coiled cord to the stud on the wristband. Fit the band snugly around the wrist. The operator is then also connected to Earth p otential.
8. Mount the "caution" sign in such a position that it can clearly be seen by those approaching the ESD protected area.
9. Test the assembled kit for resistance to Earth: that of the mat should be 7.5 x 10^5 to 1 x $10^9\Omega$ at 100V test voltage, that of the operator $\geq$ 0.75 $\leq$ 35MΩ at < 30V.

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Important points on use of the Vermason Work Station Kit

1. An operator handling ESD sensitive devices using the Vermason Work Station Kit must at all times wear the wrist band, adjusted so that it is a snug fit to the skin and grounded by the coiled cord connected to the EBP.
2. Components and assemblies that are static sensitive must not be touched or exposed outside an EPA. ESD sensitive devices are to be transported from protected in appropriate ESD packaging that includes the ESD control property shielding (i.e. in a closed metal in shielding bag).
3. No materials capable of causing static damage to unprotected devices may be taken into the EPA. Therefore sensitive devices must always be unpacked down to their special ESD packaging outside the area.

Operator safety in an EPA

1. Safety issues should be directed to the facility's safety officer.
2. Note: This product is not recommended for use on equipment with operating voltage exceeding 250 VAC or 500 VDC.
3. CAUTION: The product is for electrostatic control. It will not reduce or increase your risk of receiving electric shock when using or working on electrical equipment.
   Follow the same precautions you would use without wrist straps, including:
   - Make certain that equipment having a grounding type plug is properly grounded.
   - Make certain that you are not in contact with grounded objects other than through the ESD Series.

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