

Foot Grounders - Grounding, Testing and Maintenance



Description

The ESD Systems.com line of foot grounders provides a continuous ground path between the operator and a properly grounded ESD protected flooring. Foot grounders are designed for use in applications where user mobility is required, such as wave solder, kitting, and quality control. Per ANSI/ESD S20.20 Paragraph 6.2.2.2, “ESD protective flooring used with approved footwear, may be used as an alternative to the wrist strap system for standing operations.” Foot grounders quickly and effectively drain the static charges which collect on personnel during normal, everyday activities.

General Guidelines

1. It is recommended that foot grounders be worn on both feet, in order to assure that a continuous path to ground is maintained.
2. The grounding tab should be tucked inside the shoe with as much contact area as possible to the bottom of the stockinged foot. Foot grounders rely upon the perspiration layer inside of the shoe to make contact through the stocking.
3. Foot grounders should be used in conjunction with floor surfaces which have a surface resistivity of less than 10^{10} Ohms.
4. For most applications, a current limiting resistor in series with the grounding tab is recommended.

Testing Your Foot Grounders

The best test of your foot grounder is one that includes all three components: the individual foot grounder, the grounding tab and the interface between the grounding tab and the wearer’s sweat layer.

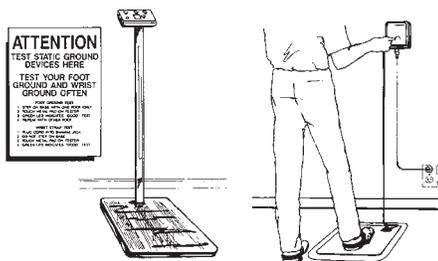


Figure 1. ESD Systems.com foot ground testers: 41203 Combo Tester with Stand and 41220/41213 Multi-Range Tester (41217 not shown).

ESD Systems.com has testers designed to properly test foot grounders. For more detailed information on these testers, ask for tech briefs PS-2057 (41203, 41205), PS-2094 (41220/41213), and/or PS-2095 (41217, 41219).

If you obtain a fail reading from the tester you should stop working and test the foot grounder and grounding tab individually to find out which item has failed. Replace the foot grounders or replace the bad component if possible. Retest the system before beginning work.

Cleaning

Foot grounders are to ground static charges, while dirt generally provides an insulative layer adversely effecting reliability. For proper operation, the Foot Grounder and its conductive strip must be kept clean.

The rubber portion of the Foot Grounder should be cleaned using our Rezstore™ Antistatic Surface & Mat Cleaner or “Static-Wipes” wipers. An alternative would be to clean using isopropyl alcohol. The ESD Systems.com cleaning products are specially formulated for cleaning ESD control components and are silicone free. This is critical as silicone is an insulator. ESD Systems.com ESD cleaners should not be used to clean the nylon polyester grounding tab.

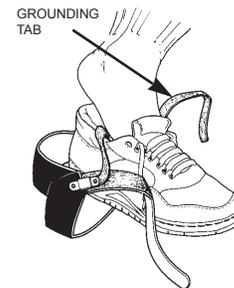
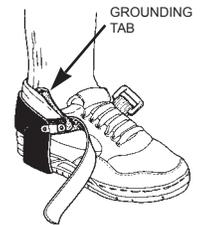
Foot Grounders can be safely hand or machine washed on gentle cycle. Mild detergents, such as Woolite® or a liquid dish washing product and warm water are recommended. However, care must be taken to ensure that these detergents are silicone free.

Installation

STANDARD D-RING HEEL GROUNDERS MODELS 24010 (U), 24040 (U), 24100, 24101 (U), 24210 (U), 24211 (U), 24500 (U), and 24510 (U).

Standard D-ring heel grounders are equipped with an elastic D-ring fastening system which provides snug cinching of ankle strap and allows “flex” during walking. They are designed for use on most types of shoes and boots.

1. Place the grounding tab in the shoe so that it will lay under the heel. Once heel is repositioned inside tied shoe, tuck excess ribbon material into side of shoe.



2. Place heel cup onto the shoe. For models with a non-marking interior, install so that the lined cup surface is making contact with the shoe.

3. Pull the strap through the D-ring and cinch down for snug, comfortable fit.

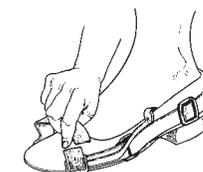
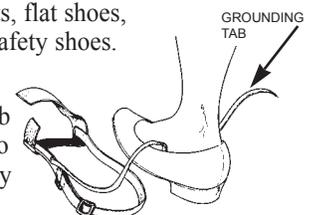


4. Test each heel grounder to confirm proper installation.

STANDARD D-RING TOE GROUNDERS MODEL 24515 (U)

ESD Systems.com toe grounders with the elastic D-ring fastening system are designed for use with a variety of men’s and women’s shoes including high heels, cowboy boots, flat shoes, loafers and safety shoes.

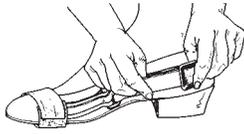
1. Place the grounding tab in the shoe so that it will lay under the heel. Once heel is repositioned inside tied shoe, tuck excess ribbon material into side of shoe.



2. Place rubber toe material under toe area of shoe sole. Pull velcro strap over top of shoe and cinch down until snug.

Install so that the lined surface is making contact with the shoe.

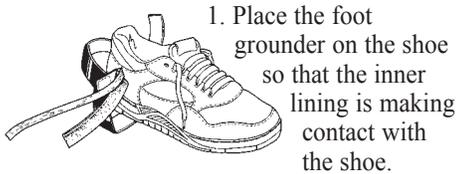
3. Pull elastic strap around the back of the heel. Adjust D-ring plastic loop for a comfortable fit.



4. Test each toe grounder to confirm proper installation.

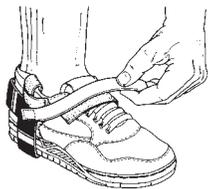
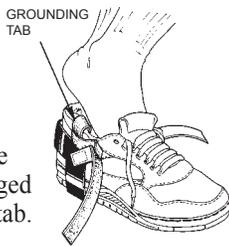
HEEL GROUNDER WITH HOOK AND LOOP CLOSURE
MODELS 24720 (U), 24723 (U), and 24724 (U).

These heel grounders are designed for use on standard shoes. They can be easily adjusted to fit the individual wearer.



1. Place the foot grounder on the shoe so that the inner lining is making contact with the shoe.

2. Insert the conductive ribbon inside of the shoe and under the foot. Make sure that a solid contact is made between the stockinged foot and grounding tab. You may also wrap conductive strip around foot if desired.



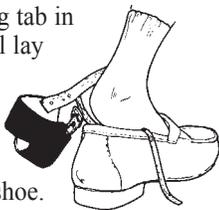
3. Fasten hook and loop straps together, securing foot grounder firmly on shoe.

4. Test each foot grounder to confirm proper installation.

HEEL GROUNDER WITH SNAP-LOC FASTENING SYSTEM
MODELS 24104 and 24105 (U).

These heel grounders are equipped with a Snap-Loc quick release fastening system.

1. Place the grounding tab in the shoe so that it will lay under the heel. Once heel is repositioned inside tied shoe, tuck excess ribbon material into side of shoe.



2. Fit the heel cup snugly to shoe and connect the Snap-Loc fastener together. Adjust elastic strap for comfortable fit. Tuck excess elastic strap behind itself.

3. Test each heel grounder to confirm proper installation.

SOLE GROUNDER
MODELS 24801 (U) and 24803 (U).

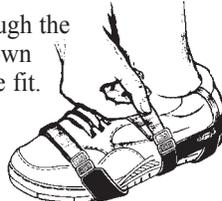
Sole grounders are equipped with an elastic D-ring fastening system which provides snug cinching of ankle strap and allows "flex" during walking. They combine the features of heel and toe grounders and are designed for use on most types of shoes and boots.

1. Place the grounding tab in the shoe so that it will lay under the heel. Once heel is repositioned inside tied shoe, tuck excess ribbon material into side of shoe.



2. Place cup of sole grounder onto the shoe so that the lined cup surface is making contact with the shoe.

3. Pull the strap through the D-rings and cinch down for snug, comfortable fit.



4. Test each heel grounder to confirm proper installation.

DISPOSABLE HEEL GROUNDER

The ESD Systems.com model 24166 disposable heel grounder is designed for applications where the use of permanent foot grounders is not economical or practical. They are constructed so that they may be used once and then discarded.

1. Fold and clip aluminum strip to top of shoe or boot.



2. Strip release paper from pressure-sensitive adhesive.

3. Pull strap snugly down and under heel.

4. Step firmly onto pressure sensitive adhesive and tear off excess material at serration.

5. Test each foot grounder to confirm proper installation.

Note: This product is not recommended for use on equipment with operating voltage exceeding 250 VAC.

CAUTION: The ESD Series 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.**

Note: No silicone is used in the materials that make our heel grounders.

Limited Warranty

ESD Systems.com expressly warrants that for a period of one (1) year from the date of purchase, ESD Systems.com foot grounders will be free of defects in material (parts) and workmanship (labor). Within the warranty period, a unit will be replaced at our option, free of charge. Call Customer Service at 508-485-7390 for proper shipping instructions and address. Include a copy of your original packing slip, invoice, or other proof of purchase date. Warranty repairs will take approximately one week.

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 ESD Systems.com 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.



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