

Grounding Brushes



Grounding Brushes are so named because they are intended to be permanently mounted and serve as a flexible, inexpensive conduit to ground

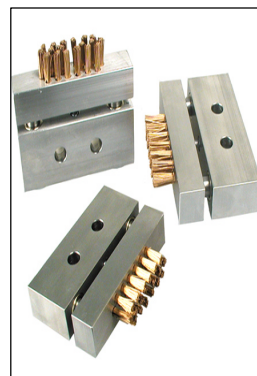
Discharging Conductive Surfaces

When grounding a isolated or insulated conductor, contact need only be made in one location on the isolated surface. In a conductor charges travel freely so a single point of contact is sufficient to discharge the entire ungrounded surface.

An example of this type of grounding was the problem experienced by a roller coaster operator whose cars ran on steel rails but had nylon wheels. The highly charged cars would arc as they approached the metal railing of the station. Installing a brush like those pictured below that touched the bottom of the car before it reached the station served to discharge the car and avert a serious potential problem.

These brushes are normally made using a conductive fiber, for example, conductive nylon, brass, steel or stainless steel.

The brushes used to ground conductive surfaces can be as inexpensive as those pictured left or as sophisticated as the brush shown on the right. This grounding brush is made of 316 stainless steel and has a brush face with a 1" forward reach that is pushed forward continuously at a preset thrust into the grounding steel plate to insure thousands of hours of continuous use without adjustment or need of inspection.



Discharging Non-Conductive Surfaces

Discharging a non-conductive surface is considerably more difficult because the charges can not move, they can not equalize and, only the specific area of the charged surface that is touched is discharged. For example, if you brushed the top side of a plastic sheet with a conductive brush, the top side only would be discharged. The sides and bottom would still have the original charge.

When used for grounding, strip brushes are normally thin [as there is no electrical advantage to thick] and are normally filled with very fine diameter conductive or static dissipative material. If the intent is to touch to charged surface with the brush, the fiber is continuous as shown on the top right.

If inductive discharge is used, the fill material is normally spaced 1mm or 2mm apart. The corona discharge is enhanced by the fineness of the point of the conductor. Those shown on the right have a point that measures approximately 5 angstroms. This tape has a conductive peel-and-stick backing and can be applied to any conductive surface.

