



Technical Note: 10000054

Electrical Grounding for Maxtek Deposition Monitors and Controllers

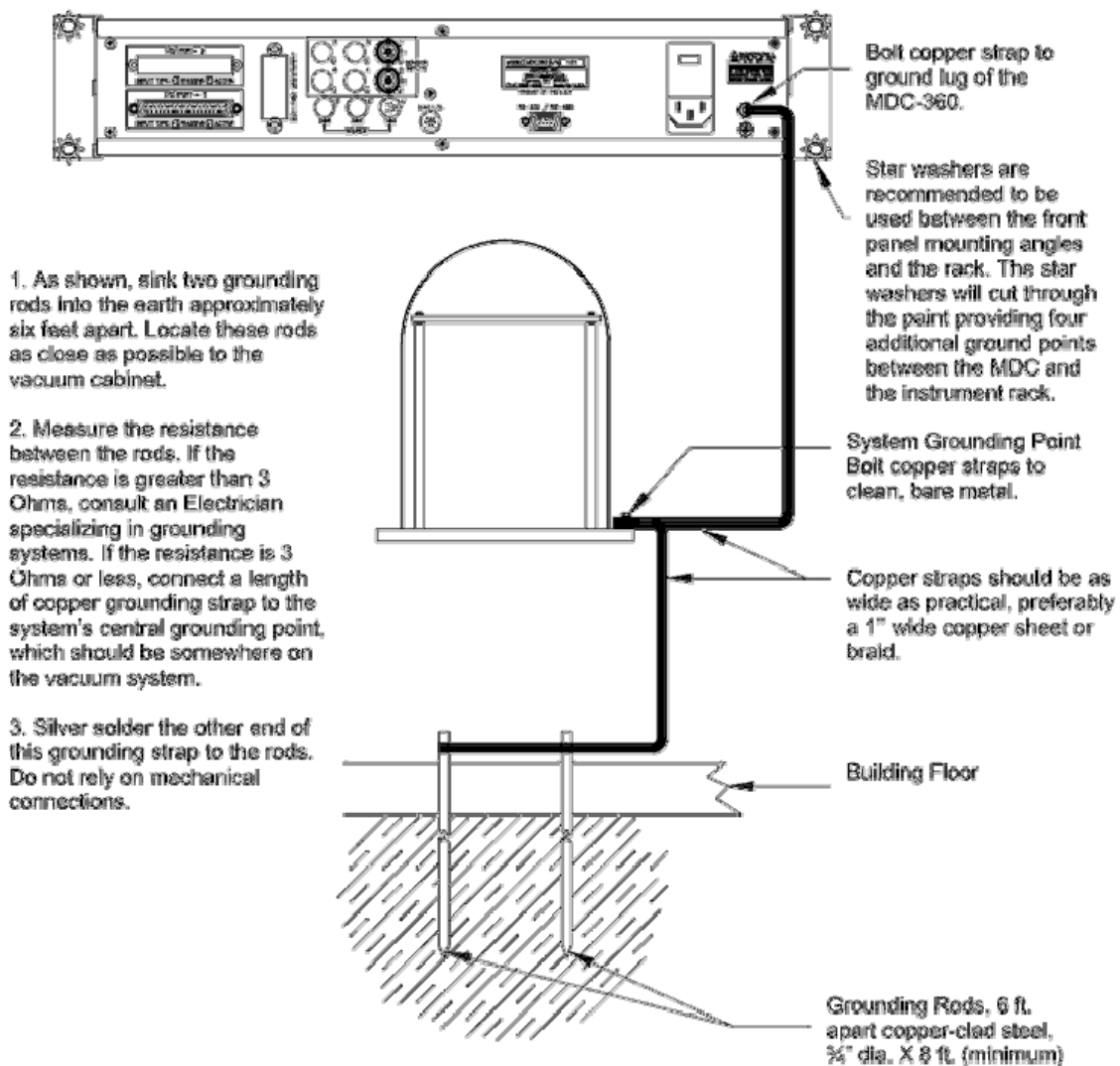
Maxtek Deposition Monitors and Controllers were designed for maximum noise immunity and in most cases will require no special grounding precautions. In unusually noisy environments, more attention to proper grounding may be required to prevent data corruption. It is important that the rack, in which the monitor/controller is mounted, is tightly grounded to the vacuum station. This grounding is best accomplished by a multipoint mechanical connection through the structure itself or through grounding straps. Grounding straps should be as wide as practical, typically 1" wide copper sheet or 1" wide braid.

A small diameter copper conductor does not create an effective ground. Although the D.C. resistance measured with such a connection may be low, the inductance can be high allowing rapidly changing currents to create large potential differences over the length of the ground wire. Multiple current paths significantly reduce the inductance, and since the inductance of a conductor is inversely proportional to its radius, wide straps will have the lowest inductance.

In particularly noisy environments it is desirable to ground the monitor/controller to the rack frame, or other good ground, by means of a grounding strap connected to the grounding lug provided on the rear panel. It is also recommended that star washers be used in between the front panel mounting angles and the rack. The star washers will cut through the paint providing four additional ground points between the MDC and the instrument rack.

With proper grounding as described above, the MDC will be immune to electrical noise caused by e-beam gun arcs, electrostatic discharge, etc.

IMPORTANT! RECOMMENDED GROUNDING METHOD



Document Title:	Electrical Grounding for Maxtek Deposition Monitors and Controllers
Document ID:	10000054
Creation Date:	
Modified Date:	12/12/2005
Related Products:	MDC-360C , MDC-361C , MDC-260
Product Line:	Thin Film / Vacuum
Notes:	This tech note also applies to: MDC-360 (obsolete), MDC-361 (obsolete), MDC-370 (obsolete). Originally released as THIN FILM TECHNICAL NOTE V-154