



INSULATION COMPONENTS

National Electrostatics Corp.

Insulating Support Post

APPLICATIONS

The NEC ceramic/titanium insulating support post was developed as the basic structural member in the NEC electrostatic accelerators.

The NEC support post is used in vertical high voltage structures with potential ratings up to 25MV and horizontal structures with potential ratings up to 8MV.

The NEC support post is ideal for applications which require the holding of high voltage gradients while under significant compressive loads.

DESIGN

The NEC ceramic/titanium support post is a metal bonded assembly using no organic compounds. It is insensitive to thermal stress with very high mechanical strength. The support post is constructed of alumina ceramic bonded to titanium electrodes. These electrodes form toroidal spark gaps which completely protect the alumina ceramic during high voltage discharge. The spark gaps are designed for operation in 80 psig SF₆ insulating gas. The voltage rating is 1 million Volts when a potential grading system is used. Potential graded support posts have been tested at the factory at voltages above 1.5 million Volts.

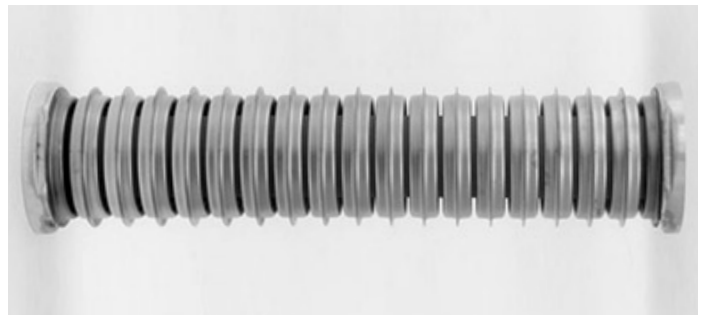
Immediately after manufacture, each post is mechanically stress tested. The post is attached to a vertical wall with the post in a horizontal position. A 165 lb. weight is attached to the free end. In this way, each post is stress tested at 265 ft. lbs. Every 20th post is tested in the same manner with a 300 lb. weight for a 481 ft. lbs. test. These tests assure that each post meets quality standards.

Brackets are available on the NEC support post for attaching potential grading systems. These brackets have a threaded opening which allow the insertion of a #4-40 x 3/8" socket head cap screw.

The NEC support posts are connected via blind tapped holes in the end cap, at both ends. These holes have a standard #10-32 NF thread on a 3.250" bolt circle diameter.

OPTIONS

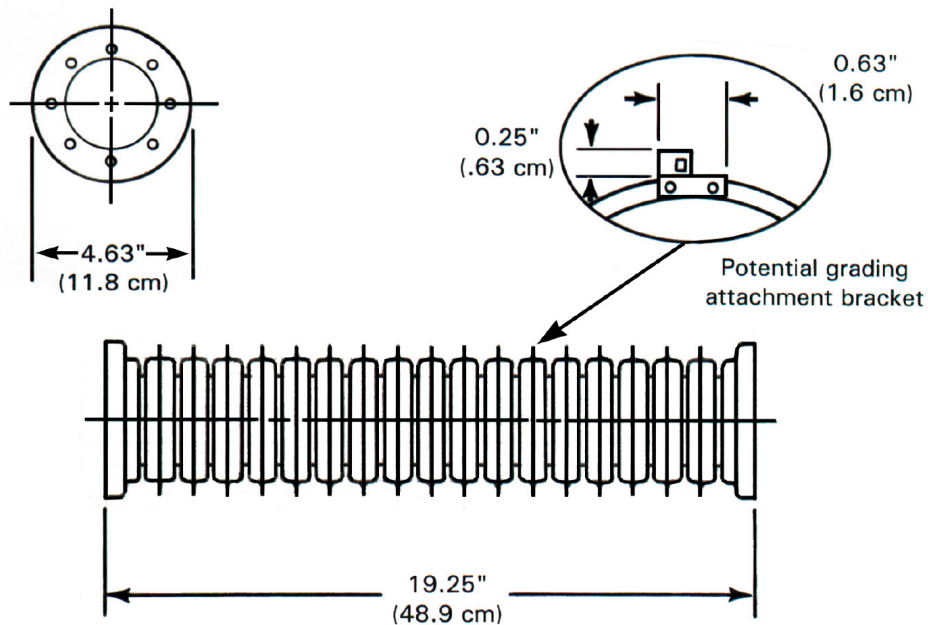
As stated above, the standard NEC support post is designed for operation in 80 psig SF₆ insulating gas. An open air version of the support post is also available and has been in use on high voltage structures up to 500kV in ambient air. A description is available upon request.



NEC ceramic/titanium insulating support post with 1MV rating in 80 psig SF₆ insulating gas.

SPECIFICATIONS

Voltage Rating:	1MV in 80 psig SF ₆
Modulus:	1" (2.54cm)
Ceramic:	Alumina, 2.50" (6.35cm) diameter
Electrodes:	Titanium, torroidal spark gap
Length:	19.25" (48.90cm)
Number of Insulating Gaps:	18
Mechanical Stress Test: (see text)	Horizontal, 265 ft - lbs. (every 20th post to 481 ft - lbs.)
Connection:	8 blind tapped holes (#10-32 NF) in both end caps
Voltage Grading Connection:	Brackets available, accepting #4-40, 3/8" socket head cap screw



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