

## **MY MOTOR IS RUNNING OH SO SLOWLY... MODEL N-100V VAN DE GRAAFF GENERATOR**

It's January, maybe February, it's a cold winter, the furnace is going and it's the right time to teach electrostatics. But it only lasts for a week or two and then that trusty Van de Graaff Generator goes back on the closet shelf or into some storeroom. With only a few hours of running time each year, these machines will last many, many years. We've had lots of calls from schools with machines that were built in the '70s and '80s.

A long happy life is a wonderful thing, but age does not treat all parts of your machine equally. The sheet metal, spun aluminum, and plastic column survive with little or no change. Ahh, but the oil in motor bearings will dry out and, without that slippery help, the motor will struggle to overcome the added friction.

What to do? Why, of course, oil the motor. Here's how:

1. Remove six cabinet screws; two down low in the front, two down low in the back and two on top of the cabinet near the handles. Lift the upper part clear of the bottom and set the bottom aside.
2. Tilt the unit and release the belt from the pulley on the motor shaft. Return to upright position.
3. Locate the two screws that hold the motor to the cabinet. Loosen them. Now, keeping one hand holding the motor, remove these two screws.
4. Keep holding the motor while you position the unit horizontally.
5. Turn the motor about ninety degrees and you will see two oil holes, one at either end of the motor.

6. Using a needle oiler from your local hardware store, put three or four drops of oil in each hole.

7. Reassemble the motor to the cabinet, being extremely careful to put the long motor mounting screw through the collar that holds the column, and the short one through the sheet metal of the cabinet. **IF YOU CARELESSLY PUT THE LONG SCREW THROUGH THE SHEET METAL OF THE CABINET, IT WILL PENETRATE THE STATOR WINDINGS AND THE MOTOR WILL BE RUINED.**

8. Run the motor for a few minutes without the belt to verify that performance is indeed better. Put the belt back over the motor pulley and reattach the cabinet bottom.

9. You're done!