

A laser printer or photocopy machine works by arranging positive charges in the pattern to be copied on the surface of a photosensitive drum, then sprinkling negatively charged toner particles onto the drum. Later, the particles are transferred to the paper and fused with heat to produce the copy.

Suppose a toner particle has a mass of 9.0×10^{-16} kg and carries an average of 20 extra electrons to provide the charge. Assuming the electrical force must be 2x the weight of a particle, what is the necessary E field strength near the surface of the drum?

