



Large electromagnet
mounted on cart

Use the large electromagnet permanently mounted on a cart. Adjust the rectangular pole pieces so that the air gap between them is approximately $1/4$ ". With the DPDT knife switch open, connect the magnet to the 120 VDC line. (SEE WARNING.) Two aluminum rings, each 2.25" I.D. and 2.5" O.D., are furnished. The two are identical except that one is continuous whereas in the other the continuity is broken by a saw cut.

Close the DPDT switch. Hold the continuous ring symmetrically between the pole faces, in that position for which it incloses a maximum magnetic flux. Release the ring, noting that it falls very slowly as long as the magnetic field through it is changing. (See Note.)

Repeat the procedure using the ring having a saw cut, noting that this ring falls rapidly as would any other freely falling body.

Note: The rings are not particularly sturdy, and may be damaged in falling. It is therefore advisable to hold one hand in a position to catch the ring as it falls.

WARNING: (1) The current in the magnet is 12 to 15 amperes. Therefore, to avoid damaging arcs, always have the DPDT knife switch open when connecting to or disconnecting from the 120 VDC line, and always open the switch rather slowly (but not too slowly) when breaking the current. (2) Leave your watch in your office, or at least far from the magnet.