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Role of Electromagnet Coils in Designing Electromagnets by [Chris Adam](#)

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Electromagnetic coils are simply coils that are wound around a metallic core to form an electromagnet when electricity is passed through them. They can be used in a variety of devices that comprise cars to computer hard drives. There are a lot of things that one needs to consider while designing such a piece that the mere core and wires.

The first thing that needs to be considered while designing electromagnets is the materials used to prepare them. The wire and the metallic core are the two most important things to ponder about. Iron is the prime choice for the core. As far as the electromagnetic coil is considered, it depends on the strength of the electromagnet you want to have. The substances which conduct electricity better will produce a stronger electromagnet and the reverse condition holds true too. Insulating the electric wires is another important thing to do. The insulating substance must be able to withstand the strength of current flowing through the electromagnet coils. The insulating wire should be thick enough to resist the voltage. The size of the electromagnets is another deciding factor in choosing all the elements mentioned above.

Then what you need to consider in the designing of the electromagnets is the technicalities associated. The number of turns of the electromagnetic coil around the core is important as it will decide the flux density of the electromagnet. The magnetic field around it is directly proportional to the number of turns of the wire. The voltage should not be too high as it may melt the core and decrease the usability of the electromagnets. Again, a voltage too low will decrease the electromagnetic property. The battery to be used should be selected wisely. The alkaline batteries should be preferred over the NiCad batteries as the latter varieties are quite prone to explosion. The control of voltage and adjustments may become necessary if electromagnets are used in various purposes.

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