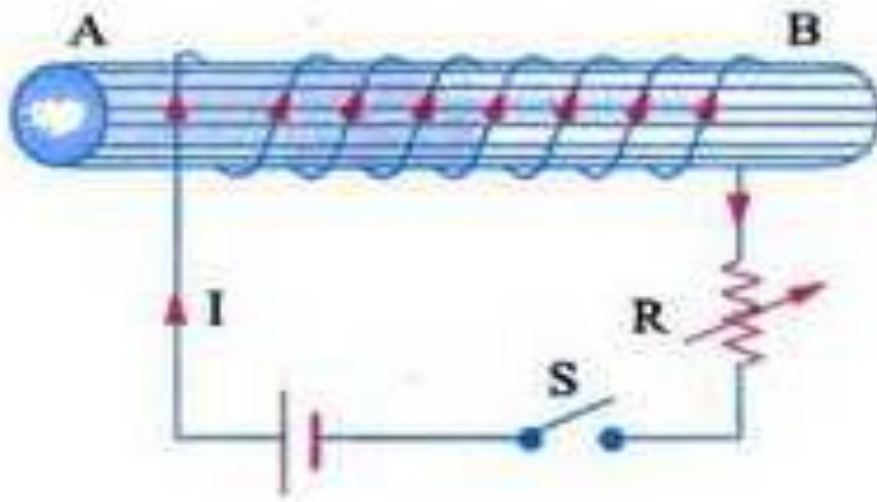




- Any further increase will have no effect on the value of B , and the point on the graph where the flux density reaches its limit is called Magnetic Saturation.
- An electromagnetic coil with a high field strength due to the current flowing through it, and that the ferromagnetic core material has reached its saturation point, maximum flux density.
- This is because there is a limit to the amount of flux density that can be generated by the core as all the domains in the iron are perfectly aligned.
- If we now open a switch and remove the magnetizing current flowing through the coil we would expect the magnetic field around the coil to disappear as the magnetic flux reduced to zero.
- However, the magnetic flux does not completely disappear as the electromagnetic core material still retains some of its magnetism even when the current has stopped flowing in the coil.
- This ability for a coil to retain some of its magnetism within the core after the magnetization process has stopped is called Retentivity or remanence, while the amount of flux density still remaining in the core is called Residual Magnetism, B_R .
- Now if the magnetizing current in the coil is reduced to zero, the magnetic field circulating around the core also reduces to zero.
- To reduce the flux density at point b to zero we need to reverse the current flowing through the coil.
- The magnetizing force which must be applied to null the residual flux density is called a "Coercive Force".