In addition to the ballast and the starter most fluorescent lamps circuits have a capacitor connected across the supply terminals to ensure a high power factor for the circuit.

**Electromagnetic control gear for HID light sources**

There are a number of different types of circuits used for high intensity discharge (HID) lamps; they vary according to the type of lamp and its requirements for starting.

The most common type of ballast used is a choke or inductive ballast in series with the lamp. The choke, which is a coil of copper wire wound on a laminated iron core, limits the current through the lamp. Figure 5.5 shows a typical circuit using a choke.

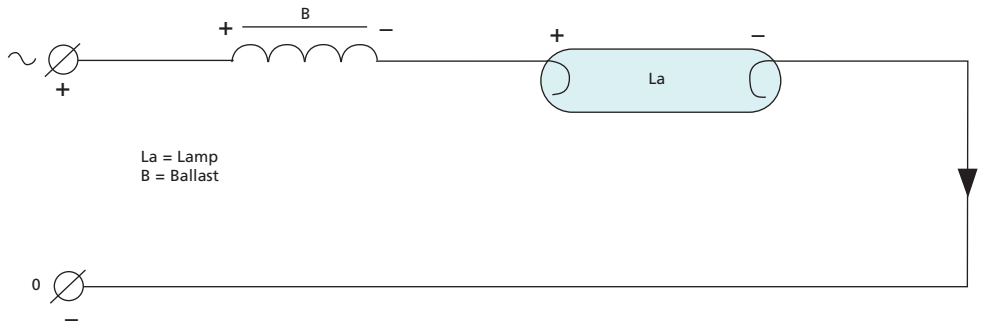


***Figure 5.5*** Schematic diagram of a HID lamp circuit using a choke

This type of circuit is used for all high intensity discharge lamps apart from the low pressure sodium lamp. The low pressure sodium lamp has a long run-up during which time the voltage across the lamp needs to be greater than normal mains voltage; this has given rise to a number of circuits for running the lamp that provide the necessary voltage. The most common of these circuits is the autoleak transformer (Figure 5.6).

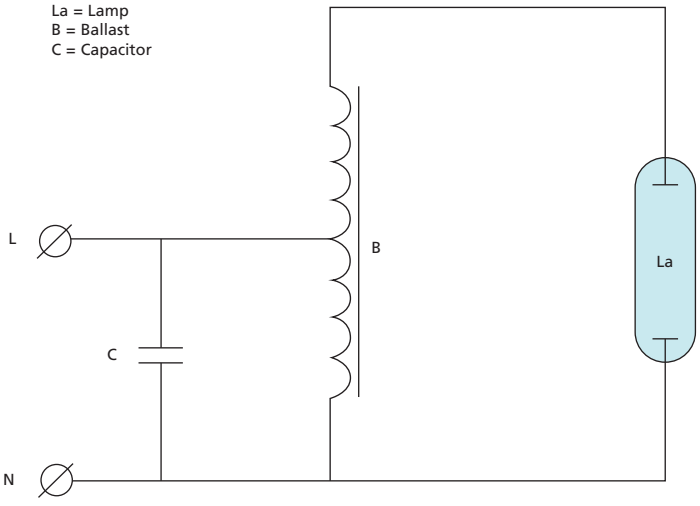


***Figure 5.6*** Schematic diagram of a low pressure sodium lamp circuit using an autoleak transformer