

Fuses for Forklifts

Forklift Fuse - A fuse consists of either a metal strip on a wire fuse element in a small cross-section which are connected to circuit conductors. These units are normally mounted between two electrical terminals and quite often the fuse is cased in a non-conducting and non-combustible housing. The fuse is arranged in series that could carry all the current passing through the protected circuit. The resistance of the element produces heat due to the current flow. The size and the construction of the element is empirically determined to be sure that the heat produced for a regular current does not cause the element to reach a high temperature. In cases where too high of a current flows, the element either melts directly or it rises to a higher temperature and melts a soldered joint in the fuse which opens the circuit.

An electric arc forms between the un-melted ends of the element whenever the metal conductor components. The arc grows in length until the voltage needed in order to sustain the arc becomes higher as opposed to the accessible voltage within the circuit. This is what results in the current flow to become terminated. Where alternating current circuits are concerned, the current naturally reverses direction on every cycle. This method really improves the fuse interruption speed. Where current-limiting fuses are concerned, the voltage needed so as to sustain the arc builds up fast enough to essentially stop the fault current before the first peak of the AC waveform. This effect greatly limits damage to downstream protected devices.

Generally, the fuse element is made up of aluminum, zinc, copper, alloys or silver which will offer stable and predictable characteristics. Ideally, the fuse will carry its rated current indefinitely and melt quickly on a small excess. It is vital that the element should not become damaged by minor harmless surges of current, and should not change or oxidize its behavior following possible years of service.

So as to increase heating effect, the fuse elements may be shaped. In big fuses, currents can be divided between multiple metal strips. A dual-element fuse can have a metal strip which melts immediately on a short circuit. This type of fuse could also have a low-melting solder joint that responds to long-term overload of low values than a short circuit. Fuse elements can be supported by steel or nichrome wires. This ensures that no strain is placed on the element however a spring can be incorporated in order to increase the speed of parting the element fragments.

It is common for the fuse element to be surrounded by materials that are meant to speed the quenching of the arc. Air, non-conducting liquids and silica sand are a few examples.