Forklift Fuses

Forklift Fuse - A fuse consists of a metal strip or a wire fuse element of small cross-section compared to the circuit conductors, and is commonly mounted between a couple of electrical terminals. Generally, the fuse is enclosed by a non-conducting and non-combustible housing. The fuse is arranged in series which can carry all the current passing all through the protected circuit. The resistance of the element produces heat due to the current flow. The construction and the size of the element is empirically determined in order 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 within the fuse that 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 considered necessary in order to sustain the arc becomes higher compared to the obtainable voltage in 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 greatly enhances the speed of fuse interruption. Where current-limiting fuses are concerned, the voltage needed in order to sustain the arc builds up fast enough so as to really stop the fault current prior to the first peak of the AC waveform. This effect tremendously limits damage to downstream protected units.

Normally, the fuse element consists if silver, aluminum, zinc, copper or alloys that would offer stable and predictable characteristics. Ideally, the fuse would carry its rated current indefinitely and melt rapidly on a small excess. It is important that the element must 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 could be shaped. In large fuses, currents can be separated between multiple metal strips. A dual-element fuse may comprise a metal strip that melts right away on a short circuit. This type of fuse can also comprise a low-melting solder joint that responds to long-term overload of low values than a short circuit. Fuse elements could be supported by steel or nichrome wires. This would make sure that no strain is placed on the element however a spring can be incorporated so as 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. Silica sand, air and non-conducting liquids are a few examples.