

Fuses for Forklifts

Forklift Fuses - A fuse comprises a wire fuse element or a metal strip of small cross-section compared to the circuit conductors, and is usually mounted between a pair of electrical terminals. Generally, the fuse is enclosed by a non-conducting and non-combustible housing. The fuse is arranged in series capable of carrying all the current passing throughout 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 so as to be certain that the heat produced for a normal 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 that opens the circuit.

When the metal conductor parts, an electric arc is formed between un-melted ends of the fuse. The arc begins to grow until the needed voltage to be able to sustain the arc is in fact greater as opposed to the circuits obtainable voltage. This is what truly leads to the current flow to become terminated. Where alternating current circuits are concerned, the current naturally reverses direction on every cycle. This particular method greatly improves the speed of fuse interruption. Where current-limiting fuses are concerned, the voltage required so as to sustain the arc builds up fast enough in order to really stop the fault current prior to the first peak of the AC waveform. This effect greatly limits damage to downstream protected units.

The fuse is normally made out of silver, aluminum, zinc, copper or alloys as these allow for stable and predictable characteristics. The fuse ideally, will carry its current for an undetermined period and melt fast on a small excess. It is important that the element must not become damaged by minor harmless surges of current, and must not change or oxidize its behavior after possible years of service.

The fuse elements may be shaped to be able to increase the heating effect. In bigger fuses, the current could be divided amongst many metal strips, while a dual-element fuse may have metal strips that melt immediately upon a short-circuit. This particular kind of fuse may even contain a low-melting solder joint which responds to long-term overload of low values as opposed to a short circuit. Fuse elements may be supported by steel or nichrome wires. This ensures that no strain is placed on the element but a spring may 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 intended to speed the quenching of the arc. Non-conducting liquids, silica sand and air are some examples.