6.1.2 Pull fused Anti-Personnel Mines

The pull fused anti-personnel mines include both jumping and directional fragmentation mines. The first generation of jumping anti-personnel mines similar to the M16A1/A2 mines in Canadian inventory, were built in such a way that a load on one of the trip wires or a direct pressure on the fuse prongs would activate the fuse. Most of the latest generation of jumping anti-personnel mines are still built using exactly the same functioning principles and type of components (see Figure 25). The differences reside in new safety features, operational and functioning mechanisms that are added to improve such mines. For instance, some scatterable electronic jumping mines are now equipped with a safety and arming device, safety time of a few minutes needed to elapse before three trip wires will be automatically ejected by the fuse and a primer detonator misalignment in the fuse until the mine is activated. On activation, the primer train will first align followed by the initiation of the primer and ejection of the mine explosive body. Some electronic jumping mines are also provided with a programming active life time for self neutralization. When the pre-set life time is elapsed, the primer is fired in the misaligned or safe position, this causes an external steel belt to be released and a red band or marker to be displayed, thus indicating a state of neutralization from a distance. The electronic jumping mines are slightly larger in dimensions than first generation mines not equipped with safety and arming device, primer misalignment and self neutralizing devices (see Figure 26).

The retrofit of first generation of jumping anti-personnel landmines similar to the M16A1/A2, with a self destruct or self neutralizing device would require changing the fusing mechanism in order to include a safety and arming device and redesigning the outside and internal bodies to accommodate a misalignment mechanism. The misalignment mechanism will bring modifications on the explosive train located in the internal body while the self destruct or self neutralizing feature will be integrated into the fuse. In the case of a self neutralizing fuse, the display device will be controlled by the fuse but its mechanism will have to be built as part of the internal or outside body. These modifications will affect the entire mine design. Based on literature, no self destruct and/or passive self deactivation devices are available at this time for jumping anti-personnel mines but after discussions with landmine manufacturers, it is found that