

"ELECTRO-MAGNETIC INDUCTION BLASTING SYSTEM"

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ABSTRACT

We have developed a new firing system which simplifies the handling and extensively increases the safety in electric blasting operations.

Based on the principle of the transformer, this system is operated as follows: When a high frequency alternating current pulse (70-110 kHz) is applied to the lead wire and connecting wire (primary circuit), magnetic flux is generated in the transcore, and an induced current flows through the looped leg wire of the detonator (secondary circuit). Then the detonators are ignited by the induced current.

The connection is assured by holding wire end loops together with one of the paired connecting wires in the center of the U type transcore and then sliding the I type transcore. Because the end of the leg wire of the detonator is looped and insulated, and also frequency band matching is limited, this system has much more safety against stray current, leakage current, power transmission lines, radio frequency, static electricity and lightning.