

# JOHNEX explosives

## INSTANTANEOUS ELECTRIC DETONATORS

### RECOMMENDATION FOR USE

- JOHNEX INSTANTANEOUS ELECTRIC DETONATORS contain sensitive components and must be handled with care and respect at all times.
- JOHNEX INSTANTANEOUS ELECTRIC DETONATORS used inside blastholes should always be secured inside suitable primers which fully enclose the detonator shell to protect it from abrasion or impact damage during charging.
- JOHNEX INSTANTANEOUS ELECTRIC DETONATORS are tested for continuity and resistance after assembly, but each unit should be checked before use, as required by local Statutory Regulations.
- An approved circuit tester and a suitable container, to enclose the detonator, should be used when testing detonators.
- The resistance of the circuit should be measured, using an approved tester, to confirm that the exploder or firing equipment available can supply sufficient energy to reliably initiate all detonators in the circuit. Single series connections are recommended to simplify hook-up and avoid the need to "balance" parallel circuits.
- JOHNEX INSTANTANEOUS ELECTRIC DETONATORS are supplied with the lead wires shorted together, and should remain this way until final hook-up. Before touching bare lead wires, operators should make contact with an effective earthed point to disperse any static electrical charges which may have accumulated during charging.
- After joining the detonator lead wires together, the bare connections should be insulated to minimise the possibility of current leakage from the circuit.



- JOHNEX INSTANTANEOUS ELECTRIC DETONATORS have proven to be robust in a wide variety of applications, but reasonable care should be taken to prevent damage to the lead wires during handling. If the plastic insulation is damaged in any way which exposes the wire core within, misfires may result due to current leakage to earth.
- JOHNEX INSTANTANEOUS ELECTRIC DETONATORS can be safely used in the vicinity of radio frequency transmitters in accordance with the "safe distances" specified in Australian Standard 2187, Part 2 - 2006.
- The Australian Explosives Legislation (particularly AS2187.2 - Use of Explosives) recommends the correct procedure to initiate detonating cord with an electric detonator, is to firmly attach the detonator to the detonating cord pointing the detonator in the direction of propagation (see FIG 1).
- JOHNEX INSTANTANEOUS ELECTRIC DETONATORS are #8 strength detonators and supersede the standard for the lead block strength tests.
- JOHNEX INSTANTANEOUS ELECTRIC DETONATORS have a convex cone shape at the end of the detonator ("the Monroe effect" shape charge) which allows for significantly improved initiation of High Explosives, i.e. the PETN in the det cord. The detonation wave will propagate over a larger distance than a flat shape detonator end and there should be no reason to point the detonator in the opposite direction from the face to avoid shrapnel. The shrapnel is "melted" when the shaped charge base is initiated.

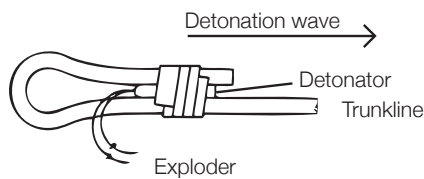
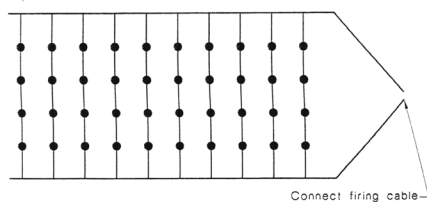
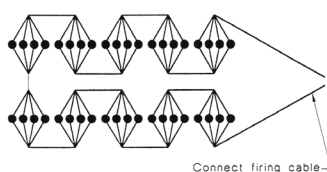


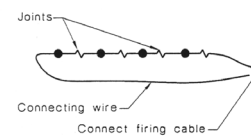
FIG 1. INITIATING DETONATOR



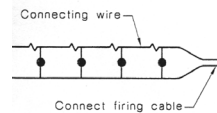
SERIES-IN-PARALLEL CIRCUIT



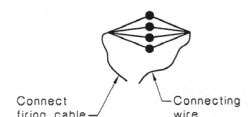
Connect firing cable



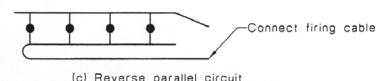
SIMPLE SERIES CIRCUIT



(a) Simple parallel circuit



(b) Alternative simple parallel circuit



(c) Reverse parallel circuit

NOTE: The resistance of each parallel series should be balanced to avoid misfires.

PARALLEL CIRCUITS

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