User Recommendations for 009E Cutter Detonators

DET-3050-009E

MAN-DET-009E (R02)

OWEN OIL TOOLS

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Warning: use of owen equipment contrary to manufacturer's specifications or operating instructions may result in property damage, serious injury or fatality. If you are not trained in the handling and use of explosive devices, do not attempt to use or assemble any owen perforating systems or owen firing devices.

This technology is regulated by and, if exported, was exported from the united states in accordance with the export administration regulations (EAR). Diversion contrary to U.S. Law is prohibited. Export and/or re-export of this technology may require issuance of a license by the bureau of industry and security (BIS), U.S. Department of Commerce. Consult the BIS, the EAR, and/or Owen Compliance Services, Inc. To determine licensing requirements for export or re-export of this technology.

Warning: ***Explosives are destructive by nature! Do not attempt to disassemble or alter the detonator in any manner! Do not crush, hammer, pinch, impact, pull wires or abuse the detonator or any explosive!***

Warning: ***Be sure to follow safe operating practices as found in API RP-67 in accordance with governmental regulations, company policies and manufacturer's recommendations!***

Owen Oil Tools' Resistorized Bridge Detonators are designed to detonate when an electrical current greater than 0.2 amps is applied. The 009E Cutter Detonator is a resistorized electrical detonator manufactured to API RP-67 recommendations and employs a 51 Ohm resistor in the firing circuit. It is designed to be used in pipe recovery tool such as tubing cutters and casing cutters where the detonator has a directional output designed to initiate another explosive device. The 009E has a spring and wire electrical contacts with a large boot that fits over the male electrical button-style contact which was designed for use with a firing head and/or shock sub extension mandrel with electrical button-style contacts. This detonator is intended to be used in operating conditions less than 475° F for 1 hour.

The user should satisfy themselves, as to the suitability of this product for the user's application.

1.0 Procedures for Panel Setup and Firing Resistorized Bridge Detonators

1.1 Before attaching a gun or detonator to the wireline cable:

- Short circuit the toolstring below the CCL.
- Apply DC voltage and adjust the rheostat to achieve 1.0 amp.
- Mark the rheostat location, then return the rheostat to zero.

1.2 When ready to fire a gun or detonator downhole, increase the power to the firing circuit from 0 to the 1.0 amp rheostat position over 4-6 seconds until the detonator fires.

Note: *If an alternative firing technique is used, do not surge the firing circuit with power as it may cause the detonator to fail and a mis-run to occur.*

2.0 Arming

Warning: ***Detonators should be removed from their packaging and storage in the loading/arming area at the time of arming!***

2.1 After removing the detonator from the packaging, disconnect the ground wire from the spring; and wrap the ground wire around the body of the detonator. The detonator will still be shunted as the temporary shunt has not been removed. Install the detonator over the male end of the button-style contact sub. A shunt should be applied to the button-style contact sub for proper electric before ballistic arming. Insert the detonator, output end first, into the cutter top sub until the output end of the detonator is flush with the bottom of the cutter top sub. The Cutter Top Sub should be mechanically attached to a shunted button sub Firing Head or shock sub extension Mandrel. With the detonator shunted through the Top Sub, remove the temporary shunt and install the cutter body (without explosive components) onto the cutter top sub. With the cutter body attached to the Top Sub, the shunt may be removed from Firing Head or extension Mandrel.

Note: *An electrical check of the detonator's firing circuit may be conducted while the detonator is confined within a safety tube. Using electrical detonator circuit testing instruments, Owen's 51 Ohm Resistorized Bridge Detonators will measure a resistance of 51 Ohms ± 5%.*

2.2 Insure the wireline cable is shunted. Mechanically connect the firing head to the wireline which will electrically connect the detonator to the wireline cable or cable connections while the detonator is still in the confined hardware. Remove the cutter body from the top sub, and assemble the explosive cutter components in the cutter body. The ballistic arming will be completed by attaching the top sub to the loaded cutter body taking care not to force, pinch, crush, or impact the explosive components.

Note: *Refer to Owen's Tubing Cutter Assembly Manual (MAN-REC-CUT), Drill Pipe Cutter Assembly Manual (MAN-REC-DPC), NT Super Tubing Cutter Manual (MAN-REC-STC) and NT Segmented Casing Cutter Manual (MAN-REC-SCC), for more information on the proper use and installation of the 009E detonator.*