



User Recommendations for Unidet 100 Series Detonators

DET-3050-002

MAN-DET-002 (R1)

Owen Oil Tools

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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 Unidet 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 exposed conditions with 100 gr/ft detonating cord where the operation environment should not exceed 450° F and 20,000 psi 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 0.80 amps.
- 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 0.80 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! Always insert the detonator inside a safety tube after removal from packaging and storage!



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 $\pm 5\%$.

2.1 First, insert the detonator into a detonator safety tube, then insure the wireline cable is shunted. Now electrically connect the detonator to the wireline cable while the detonator is still in the safety tube. The blue insulated wire must be ground as it is electrically connected to the body of the detonator internally. Remove the detonator from the tube. The Unidet is a crimp-on detonator which ballistically connects to the explosive train by inserting detonating cord into the detonator's crimp sleeve. Carefully make a square, clean cut of the 100 gr/ft detonating cord using Owen Super Cutters. Insert the newly cut end of detonating cord into the crimp sleeve of the detonator until it meets the explosive powder in the detonator. Crimp the cord in place in a 3/8 in (0.95 cm) area from the end of the detonator using Owen Super Crimpers. Do not use 80 gr/ft round detonating cord with this detonator.



3.0 Exposed Detonators-Sealing Instructions

3.1 The connection of the detonator and detonating cord must be sealed as well for an exposed well environment. Owen has developed and proven a best practice for sealing

exposed detonator/detonating cord interface. Once the detonating cord has been crimped to the detonator;

A. Wrap 4 layers of Temp Tape (PUR-6100-006) over the diameter of the crimp sleeve and extending beyond the ends of the crimp sleeve approximately 1/4 in (0.64 cm) covering the detonator body and detonating cord.

B. Cut a 10 in (25.5 cm) section of Mocap Tape (PUR-6100-011). Wrap 2 layers of Mocap Tape over the diameter of the Temp Tape; extend the end of the tape wrap approximately 3/4 in (1.9 cm) beyond the Temp Tape covering the detonator body and detonating cord.

C. Wrap 2 more layers of Temp Tape over the diameter of the Mocap Tape; extend the ends of the tape wrap approximately 1/2 in (1.3 cm) past the Mocap Tape covering the detonator body and detonating cord.

3.2 Complete the mechanical assembly of the device and tool assembly by attaching the detonator to the toolstring taking care not to force, pinch, crush, or impact the explosive components or wiring.



Note: These procedures must be followed for all Owen Detonators used in exposed applications. Owen exposed detonators were designed and qualified using this sealing method. All Quality Control (QC) tests are performed with the same procedure.



