User Recommendations for Unidet Series Detonators

DET-3050-001

MAN-DET-001 (R02)

Owen Oil Tools LP

12001 CR 1000

Godley, Texas, 76044, USA

Phone: +1 (817) 551-0540

Fax: +1 (817) 551-1674

www.corelab.com/owen

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.

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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 where the operation environment should not exceed 450 degrees 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 ± 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 the detonating cord into the detonator's crimp sleeve. Carefully make a square, clean cut of the 80 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. When using detonating cord other than 80 gr/ft round detonating cord, use the proper detonating cord adapter to ensure a proper crimp and ballistic connection.

Caution: ***Owen Super Crimpers are designed to consistently create the proper crimping configuration! Use of any other crimping device could result in a misfire, caused by an inadequate crimp or damaging the detonator!***

3.0 Exposed Detonators-Sealing Instructions

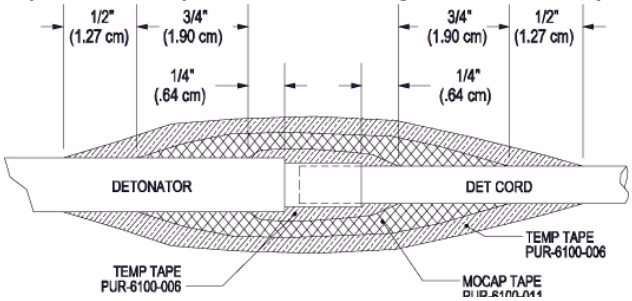
3.1 The connection of the detonator and detonating cord must be sealed as well for an exposed well environment. Owen has developed and proven a best practice for sealing exposed detonator/detonating cord interface. Once the detonating cord has been crimped to the detonator;

A. While stretching, tightly wrap the 1st layer of Temp Tape (PUR-6100-006) starting 0.250 in. (.64 cm) below the crimp on the Detonator Body and ending 0.250 in. (.64 cm) past the crimp on the det cord. Without cutting the tape, tightly wrap (while stretching) a 2nd layer of tape, following the above process, but in reverse. Now with the tape uncut, stretch and tightly wrap 2 more layers, by following the methods of the first 2 layers.

B. Starting 0.750 in. (1.9 cm) past one end of the wrapped Temp Tape, begin tightly wrapping (while stretching) the Mocap Tape (PUR-6100-011) over the Temp Tape, until it extends 0.750 in. (1.9 cm) past the Temp Tape. Without cutting the tape, tightly wrap (while stretching) another layer of tape, following the above process, but in reverse.

C. While stretching, tightly wrap 1 layer of Temp Tape, starting 0.500 in. (1.27) past one end of the Mocap Tape, then over the Mocap Tape until it extends 0.500 in. (1.27 cm) past the end of the Mocap Tape. Now, tightly wrap (while stretching) another layer of tape, following the above process, but in reverse.

Note: It is essential that when wrapping the tape, that you make sure to overlap the wraps of each layer. This detonator was designed and qualified using the specified tape types and sealing method. All Quality Control (QC) tests are performed using these same procedures.



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.