

# Shogun 4 Wire System Technical Manual

**MAN-STP1-002 (R06)**

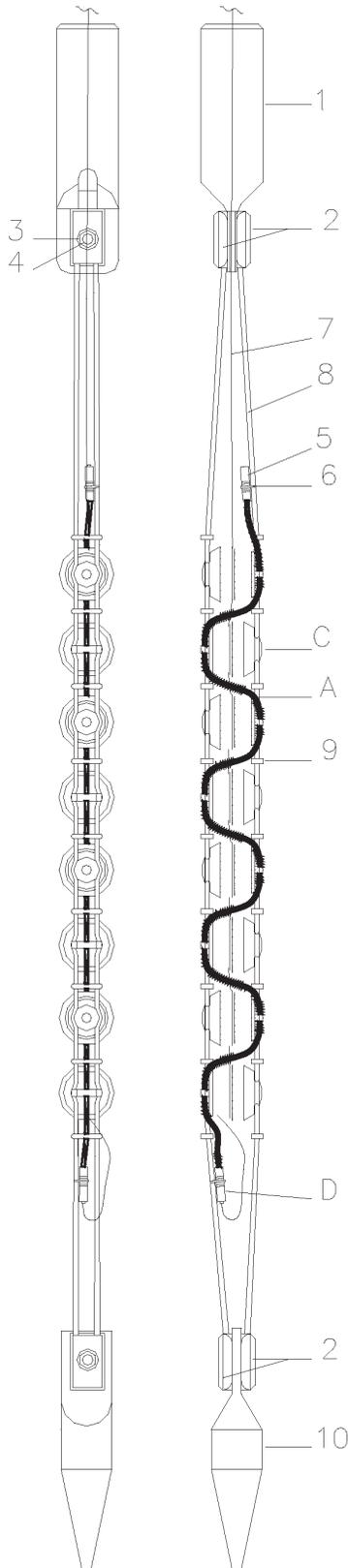
## **OWEN OIL TOOLS**

12001 Cr 1000  
Godley, Texas, 76044, USA  
Phone: +1 (817) 551-0540  
Fax: +1 (817) 551-1674  
[www.corelab.com/owen](http://www.corelab.com/owen)

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## BILL OF MATERIALS:

ITEM	PART NO.	DESCRIPTION
1	FWC-0001-013	Top Sub
2	FWC-0001-014	Clamp
3	PUR-0500-070	Nut, 3/8" - 16
4	PUR-0500-075	Socket Head Cap Screw
5	DET-0010-001	End Seal
6	PUR-6000-005	Seizing Cord
7	PUR-6122-001	Lead Wire, Teflon
	PUR-0600-003	Lead Wire, Nylon
8	FWC-0001-010	Carrier Wire 1/8" dia., 50 ft. coils of 4 matched wires, 1-11/16" & 2-1/8" 4spf
	FWC-0001-016	Carrier Wire 1/8" dia., 50 ft. coils of 4 matched wires, 1-11/16" & 2-1/8" 6spf
9	FWC-0001-012	Hog Ring 3/4"
	FWC-0001-019	Pliers for Hog Ring
-	AES-AS60030	Magnetic Decentralizer for 1-11/16"
	AES-AS90045-218	Magnetic Decentralizer for 2-1/8"
10	FWC-0001-015	Bottom Guide Nose
A	A578010	Detonating Cord, 80 gr., RDX
	A571010	Detonating Cord, 80 gr., HMX
	A576010	Detonating Cord, 80 gr., HMX Teflon
C	STP-1687-301E	Shogun II, 1-11/16" D.P. Charge, RDX
--	STP-1687-085	*Connection Nut for 1-11/16" Charge (Required on each Charge)
C	STP-2125-301E	Shogun II, 2-1/8" D.P. Charge, RDX
--	STP-2125-085	*Connection Nut for 2-1/8" Charge (Required on each Charge)
D	--	Resistorized Detonator (See Det. Ref. Sec.)

## SPECIFICATIONS:

PART NO.	CHARGE DESCRIPTION	PRESSURE RATING
STP-1687-301E	Charge, 1-11/16" RDX, Shogun II DP	15,000 psi (103 Mpa)
STP-2125-301E	Charge, 2-1/8" RDX, Shogun II DP	
STP-2125-301BE	Charge, 2-1/8" RDX, Shogun II BH	

## 1.0 Pre-Assembly



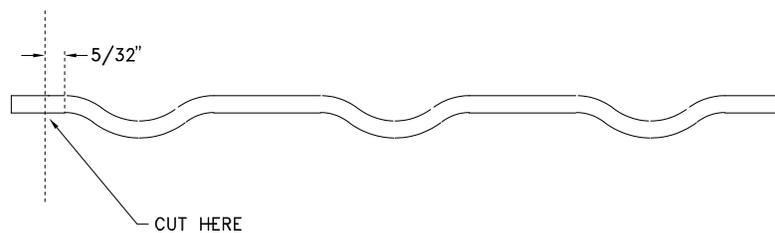
**Warning:** *Explosives are destructive by nature! Do not attempt to disassemble or alter explosive products in any manner! Do not crush, hammer, pinch, impact, pull wires or abuse any explosive product!*



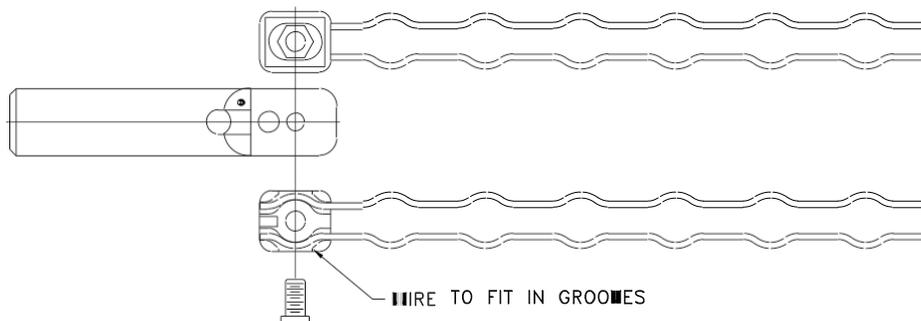
**Warning:** *Be sure to follow safe operating practices as found in API RP-67, governmental regulations, company policies and manufacturer's recommendations!*

## 2.0 Assembly

- 2.1 Assemble Gun on flat clean surface. Cut the four matched pair of Carrier Wire at least 4 ft. (1.3 m) longer than the zone to be shot. Cut the wire  $5/32$  in. (4 cm) after the hump (groove) on the wire - as shown.



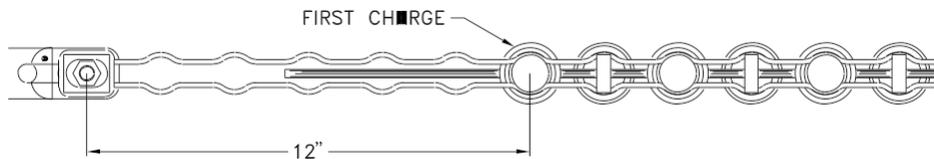
- 2.2 Attach the 4 matched Carrier Wires to the Firing Head Assembly. Be sure the wires fit firmly in the grooves provided.



- 2.3 Cut Detonating Cord 35% longer than gun length (use a sharp razor knife on a non-metallic surface when cutting det cord). Thread a charge onto Detonating Cord and position the charge in place. Install the first charge about 1 ft. (30 cm) from the Firing Head Assembly.



**Caution:** *If the Charges are placed too close to the Firing Head, the chance of severing the Carrier Wire is increased!*



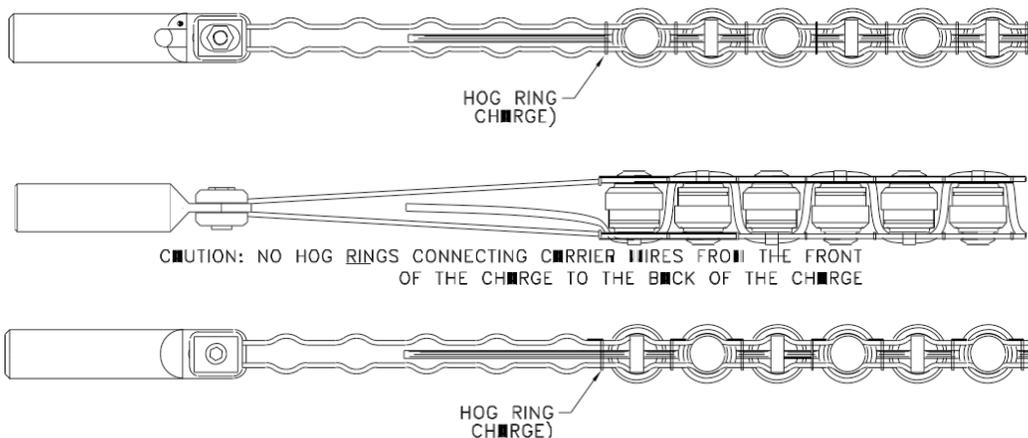
- 2.4 Thread next Charge onto Detonating Cord and position it in place next in line in the Wire Carrier.



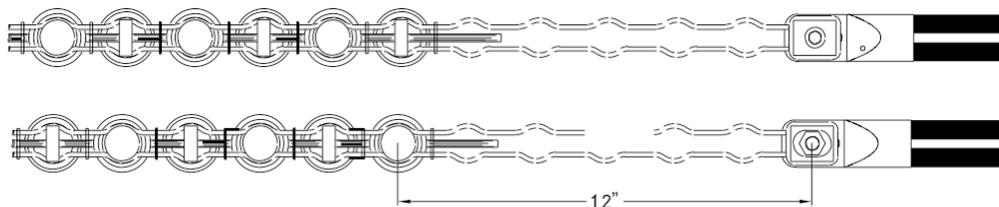
**Caution:** *Be careful not to cut the cover of the Cord! After each charge is placed between the wires, Hog Rings are placed on the two wires on each side and squeezed together with the Hog Ring Pliers to secure the charge in position (2 Hog Rings per charge)!*



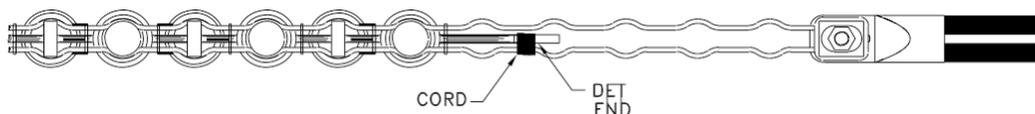
**Caution:** *Never clamp front and back carrier wires together (except at Top Sub and Guide Nose)! If these 4 wires are clamped together in the carrier (anywhere near the charges) it will sever the carrier wire!*



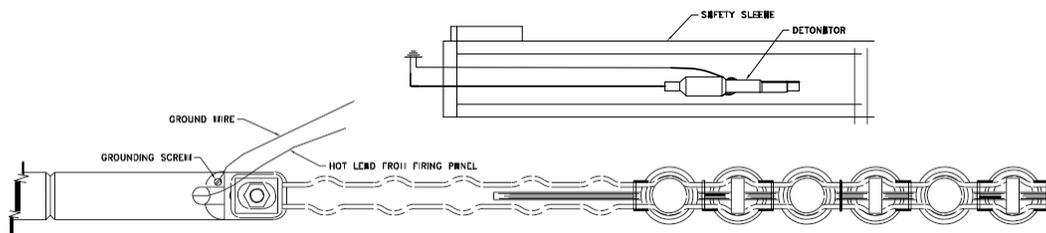
- 2.5** Leave about 1 ft. (0.3 m) between the last charge and the Bottom Sub Assembly. Attach the Bottom Sub Assembly to Wires, with Wires fitting in grooves. Be careful not to cut the cover of the Cord.



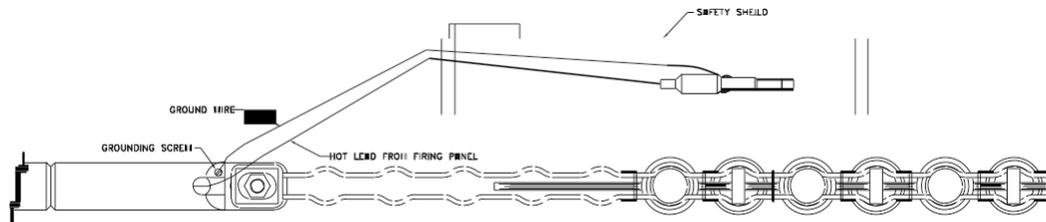
- 2.6** Leave about 1 ft. (0.3 m) between the last charge and the Bottom Sub Assembly. Attach the Bottom Sub Assembly to Wires, with Wires fitting in grooves. Be careful not to cut the cover of the Cord. Use seizing cord to tie the end seal to one of the carrier wires.



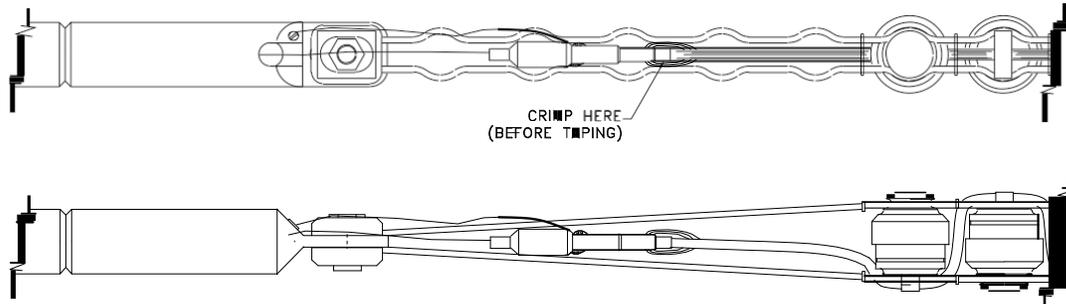
- 2.7** The Detonator should be still shunted and placed in the Safety Shield. Before the Detonator is attached to the Lead Wire, the Gun should be assembled to the entire assembled string (Cable Head Collar Locator (CCL), Sinker Bar and Sub Adapter). Check the Cable and CCL circuits and place the Truck (Surface) Shooting Panel in “SAFE/NO-FIRE” position. All safety rules should be observed in wiring up the Detonators.



- 2.8** After the Circuits are in the “Safe” position and while the Detonator is positioned inside a Safety Sleeve, attach the Detonator to the Lead Wire.



- 2.9 Attach the Detonator to the Det Cord and crimp on the sleeve provided. Do not crimp beyond the sleeve.



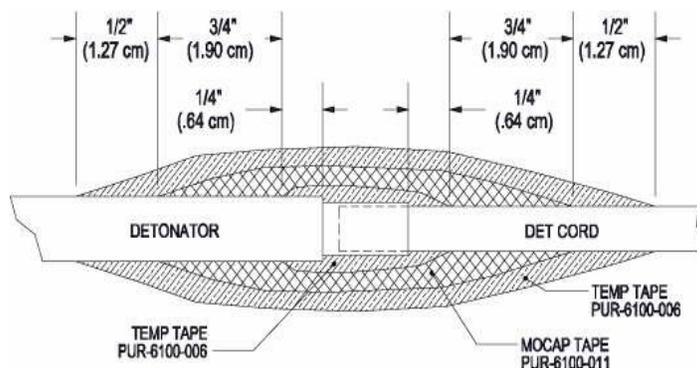
**Caution:** *XHV Detonating Cord should not be used for exposed applications. Users should refer to the Detonating Cord selection chart to select a detonating cord rated for the intended application.*

- 2.10 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.*



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.

## 3.0 Running Guidelines



**Caution:** *Wire Shogun Systems should only be shot in liquid environments to assure retrieval of wires!*

- 3.1 Always run a gauge thru the tubing before running any gun. When “on zone” flag the line. Also on this run any correlating logs necessary can be done which saves time on bottom, especially in cases where high temperature and pressure exists.
- 3.2 Slowly insert the gun in the lubricator being careful not to bump the back edge of the charges. This could knock a charge loose and cause it to hang the gun in the tubing. Never try to raise the gun without using the lubricator, this could cause the gun to be bent and cause a misrun or a fishing job because a charge could come out of the bent carrier strip.
- 3.3 The gun can be lowered at any reasonable speed except when traveling through some trouble spot or seating nipple, packers etc. where slower speeds are required.
- 3.4 When collars have been checked and the gun is in zone. The firing power is gradually raised to max of one amp or the gun fires.
- 3.5 After firing, the gun is raised to the surface by slowly raising the gun thru the end of the tubing, seating nipple, packer etc..., then at any reasonable speed to the surface.