



# Shogun Strip Technical Manual

## MAN-STP1-000 (R07)

### 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](http://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.

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.

This document contains Confidential Information of Owen Oil Tools LP (Owen) and is furnished to the customer for information purposes only. This document must not be reproduced in any way whatsoever, in part or in whole, or distributed outside the customer organization, without first obtaining the express written authorization of Owen. This document is the property of Owen and returnable upon request of Owen.

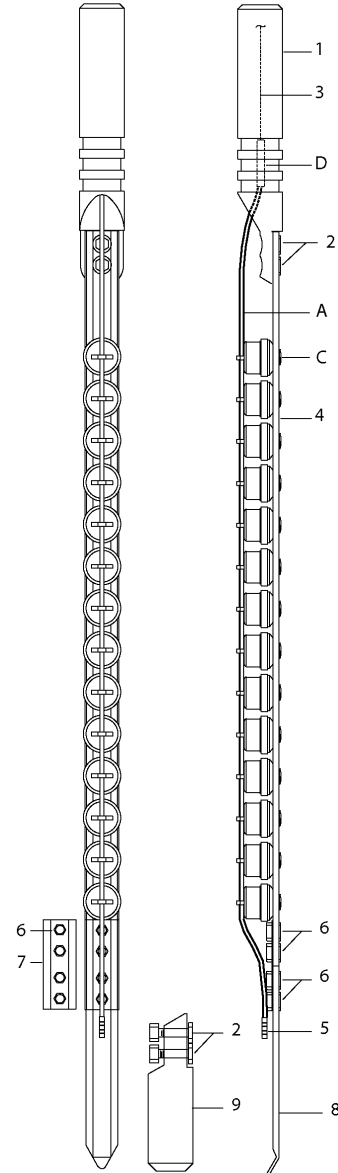
© 2010 Owen Oil Tools

---



## BOM and Schematics

Item	Part No.	Description
--	----	Decentralizer - Magnetic or Bow Spring
1	STP-1687-118 STP-2125-118	Top Sub, 1-11/16" O.D. Top Sub, 2-1/8" O.D.
2	STP-1687-013	3/8 - 16 x 1" Bolt & Nut Set, 1-11/16" & 2-1/8" O.D.
3	PUR-6122-001 PUR-0600-003	Lead Wire, Teflon, 500F Lead Wire, Nylon, 325F
4	STP-1687-057 STP-1687-042 STP-1687-045 STP-1687-058 STP-1687-038 STP-1687-041 STP-2125-057 STP-2125-042 STP-2125-045 STP-2125-058 STP-2125-038 STP-2125-041	1-5/8" & 1-11/16" x 12' Strip Carrier, 4/ft., 47 shot 1-5/8" & 1-11/16" x 6' Strip Carrier, 4/ft., 23 shot 1-5/8" & 1-11/16" x 3' Strip Carrier, 4/ft., 15 shot 1-5/8" & 1-11/16" x 12' Strip Carrier, 6/ft., 70 shot 1-5/8" & 1-11/16" x 6' Strip Carrier, 6/ft., 34 shot 1-5/8" & 1-11/16" x 3' Strip Carrier, 6/ft., 22 shot 2" & 2-1/8" x 12' Strip Carrier, 4/ft., 47 shot 2" & 2-1/8" x 6' Strip Carrier, 4/ft., 23 shot 2" & 2-1/8" x 3' Strip Carrier, 4/ft., 15 shot 2" & 2-1/8" x 12' Strip Carrier, 6/ft., 70 shot 2" & 2-1/8" x 6' Strip Carrier, 6/ft., 34 shot 2" & 2-1/8" x 3' Strip Carrier, 6/ft., 22 shot
5	DET-0010-001	Det Cord End Seal
6	STP-1687-034	3/8 - 16 x 1/2" Bolt & Nut Set, 1-11/16" & 2-1/8"
7	STP-1687-047 STP-2125-047	Tandem Connector, 1-11/16" O.D. Tandem Connector, 2-1/8" O.D.
8	STP-1687-026 STP-2125-026	Strip Guide Nose, 1-11/16" O.D. Strip Guide Nose, 2-1/8" O.D.
9	STP-1687-053 STP-2125-053	Bull Nose for Magnetic Decentralizer, 1-11/16" Bull Nose for Magnetic Decentralizer, 2-1/8"
A	A578010 A571010 A576010	Detonating Cord, 80 gr., RDX-LS Detonating Cord, 80 gr., HMX Detonating Cord 80 gr, HMX Teflon
C	STP-1687-401NTX STP-1687-401NT STP-1687-401NB STP-1687-301E STP-1687-301BE STP-2125-401NTX STP-2125-401NT STP-2125-401NB STP-2125-301E STP-2125-301BE	Charge 1-11/16", HMX, Shogun NT, DP Charge 1-11/16", HMX, Shogun NT, DP Charge 1-11/16", HMX, Shogun NT- BH Charge 1-11/16", RDX, Shogun II DP Charge 1-11/16", RDX, Shogun II BH Charge 2-1/8", HMX, Shogun NTX, DP Charge 2-1/8", HMX, Shogun NT, DP Charge 2-1/8", HMX, Shogun NT- BH Charge 2-1/8", RDX, Shogun II DP Charge 2-1/8", RDX, Shogun II BH
D	--	Resistorized Detonator (See Det. Ref. Sec.)
--	STP-1687-162	Alignment Tool Kit for NT Charge
--	STP-1687-164 STP-2125-164	Shogun Tightening Tool 1-11/16" Shogun Tightening Tool 2-1/8"
--	MAN-STP1-000	Manual, Shogun System





## 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 in accordance with governmental regulations, company policies and manufacturer's recommendations!*



**Note:** *At the Top Sub always skip 4 shots on single guns.*



**Note:** *Before loading and testing, visually inspect the strip for any defects.*

## 2.0 Assembly

**2.1** Screw the charge in the strip by hand until it seats against the strip. Be careful not to cross thread. Tighten by using the appropriate size Shogun Tightening Tool.



**Caution:** *Excessive force is not required to properly tighten the charge! Using excessive force could damage the threads of the charge or strip!*



**Caution:** *Never tighten by gripping the case! Tightening on the charge case could damage the O-ring which could cause the charge to leak!*

**2.2** Align the detonating cord slot/hole with the strip. For charges with det cord slots, align by using the appropriate size Shogun Alignment Tool.



**Caution:** *Make sure that the cap is turned as little as possible when aligning the det cord groove!*

**2.3** Attach the det cord by inserting it into the charge case groove for the entire gun. Leave 8 in. (20 cm) of excess det cord on the bottom and enough det cord on the top to reach 5 in. (13 cm) past the top end of the spiral strip.

**2.4** For charges with det cord clips, attach it by placing one side of the clip in the groove provided, then snap in the opposite side by pressing the clip with the edge of a small screwdriver or small rod.

For charges with drilled holes, feed the det cord through the holes, starting from the bottom end and finishing at the top.

**2.5** If a tandem connection is needed, secure the connection to the strips using bolts and nuts (with the nuts on the same side that the charges are screwed into). Load the charges continuously without skipping any holes.

**2.6** Attach the Guide Nose/Bottom Sub and Top sub, onto the ends of strip using bolts and nuts (with the nuts on the same side that the charges are screwed into). Seal the bottom end of the det cord and secure it to the inside of the strip by using wire or seizing cord, placed in a position where it will not rub against the inside of the tubing or the casing.

**2.7** Attach the Top Sub to the CCL and adapter, while threading the lead wire through the center hole of the Top Sub. Check fire through the CCL and Top Sub in accordance with your company's policies.

**2.8** Place the detonator into a safety shield and then electrically arm the detonator to the Top Sub by attaching the red lead from the detonator to the hot lead from the Top Sub. Finally, attach the blue lead to the ground on sub.

**2.9** Only after attaching the detonator electrically to the line, attach the detonator to the det cord by making a clean cut on the det cord (using Owen Super Cutters). Insert the det cord in the detonator and crimp (using Owen Super Crimpers).



**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;

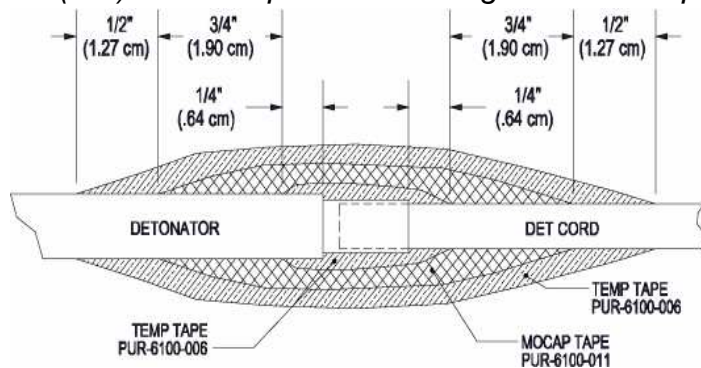
A. While stretching, tightly wrap the 1st layer of Temp Tape (PUR-6100-006) starting 0.250 in. (.64 cm) below the crimp on the Detonator Body and ending 0.250 in. (.64 cm) past the crimp on the det cord. Without cutting the tape, tightly wrap (while stretching) a 2nd layer of tape, following the above 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.

2.11 Place the detonator into the groove in the Top Sub and secure in place with wire or seizing cord in the grooves provided.

## 3.0 Running Guidelines



**Caution:** *Do not run the gun in dry wells or where gas could be present! The carrier could be severely bent or severed!*

3.1 Always run a gauge thru the tubing before running any gun. 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 run lower at any reasonable speed except when lowering through some trouble spot or seating nipple, packers etc....

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. If the gun strip was bent as result of the detonation you will notice a difference in weight entering the tubing. To date no pull greater than 250 lbs has been required to re-enter the tubing.