



# Split Shot Cutters®

**1.375 inch**

**2.000 inch**

**MAN-REC-SSC (R09)**

## **OWEN OIL TOOLS**

12001 Cr 1000

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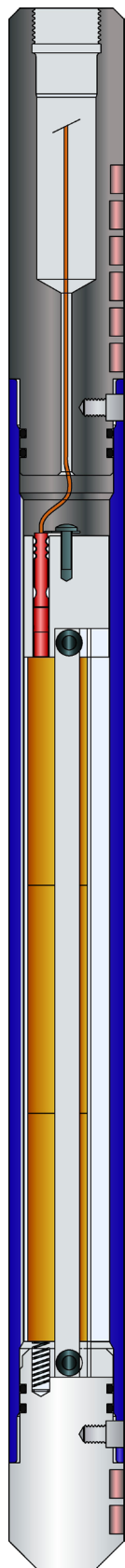
Fax: +1 (817) 551-1674

[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.

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## Description:

Owen's Split Shot® Cutter was designed for use where traditional jet cutters were not effective or could not be used. The Split Shot® Cutter is run in a linear configuration adjacent to any collar or connection and positioned by inline magnets. After detonation the collar or connection is split allowing the pipe to be freed for easy removal.

## Benefits / Capabilities:

- “Air shippable” at Class 1.4S
- Conforms to API RP-67
- Can be run through heavy mud, paraffin, collapsed tubing, and reduced restrictions.
- Can be run 4X faster than conventional jet cutters.
- Must be run decentralized to maximize effectiveness of tool.
- If shooting in a connection with a premium thread, (i.e. VAM, Hydril, etc.), please contact your local Owen representative for recommendations.

## Patents:

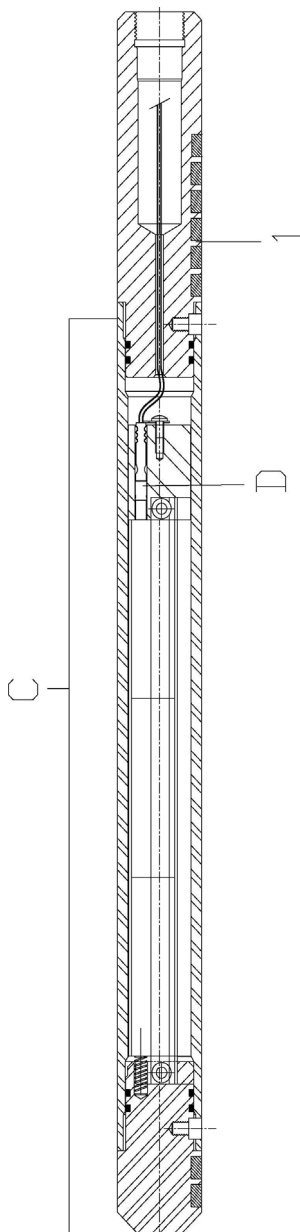
United States Patent 5,720,344: Method of longitudinally splitting a pipe coupling within a wellbore.

## Specifications:

TOOL	1-3/8 IN.				2 IN.			
	1-3/8 in.	34.9 mm	1.375 in.	34.9 mm	2.000 in.	50.8 mm	2.000 in.	50.8 mm
Housing Material	Aluminum							
Explosive Length	18, 24, 48 in.				18, 24, 48 in.			
	45.7, 70.0 cm				45.7, 70.0, 122.0 cm			
Explosive Load	600 grain/ft		900 grain/ft		1200 grain/ft		2000 grain/ft	
Minimum Running Restriction	1.775 in.	45.1 mm	1.775 in.	45.1 mm	2.625 in.	66.7 mm	2.625 in.	66.7 mm
Recommended Tubing / Casing Applications	2.375 to 2.875 in.		2.875 to 4.500 in.		3.500 to 7.000 in.		5.500 to 16.000 in.	
	60.3 to 73.0 mm		73.0 to 114.3 mm		88.9 to 177.8 mm		139.7 to 406.4 mm	
Maximum Pressure	psi	MPa	psi	MPa	psi	MPa	psi	MPa
up to 200°F (93°C)	14,000	96.5	14,000	96.5	11,700	80.7	11,700	80.7
200°F to 325°F (93°C to 163°C)	13,250	91.4	13,250	91.4	11,000	75.8	11,000	75.8
325°F to 400°F (163°C to 200°C)	11,800	81.4	11,800	81.4	9,850	67.9	9,850	67.9

Pressure Ratings are based on 1 hour exposure. For durations exceeding 1 hour please contact Owen Engineering. Refer to the “Time vs Temperature Chart for Explosives” for allowable operating temperatures.

ITEM	1	D	C	C	C
DESCRIPTION	MAGNETIC TOP SUB	DETONATOR	18" LONG ASSY	24" LONG ASSY	48" LONG ASSY
1 3/8" OD (600gr/ft)	SSC-1375-005	DET-3050-009LS or 2-300750-1	SSC-1375-311 (3 - 6" Segments)	SSC-1375-321 (4 - 6" Segments)	--
1 3/8" OD (900gr/ft)	SSC-1375-005	DET-3050-009LS or 2-300750-1	SSC-1375-312 (6 - 3" Segments)	SSC-1375-322 (8 - 3" Segments)	SSC-1375-342 (16-3" Segments)
2" OD (1200gr/ft)	SSC-2000-010	DET-3050-009LS or 2-300750-1	SSC-2000-312 (6 - 3" Segments)	SSC-2000-322 (8 - 3" Segments)	SSC-2000-342 (16 - 3" Segments)
2" OD (2000gr/ft)	SSC-2000-010	DET-3050-009LS or 2-300750-1	SSC-2000-311 (9 - 2" Segments)	SSC-2000-321 (12 - 2" Segments)	SSC-2000-341 (24 - 2" Segments)



- Top Sub and Detonator must be ordered separately from Split Shot® Assembly.
- Magnetic Top Sub may be used more than once.
- HMX Split Shots are available by special order. Parts should be ordered by replacing the 3 with a 4, ie. SSC-XXXX-4XX

**NOTE:** Split Shots can be run using Safe Detonator System or Owen Green DET™ as a replacement to the DET-3050-009LS. Please Reference Safe Ignition Systems Section.

## WARNING

Use of Owen equipment contrary to manufacturer's specifications 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 assemble any Owen Perforating Systems or Owen Firing Devices.

For Technical Assistance, Please Contact:

Owen Oil Tools

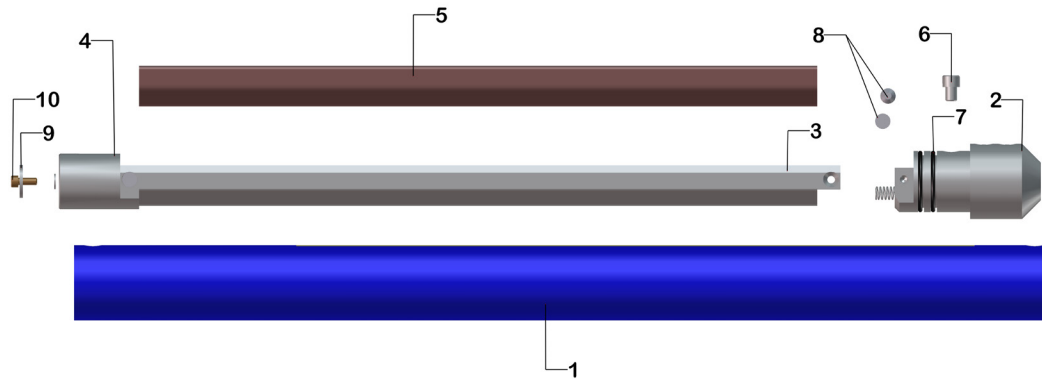
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## 1.0 Assembly of Split Shot Cutters - except SSC-2000-311, SSC-2000-321 and SSC-2000-341



**Figure 1:** Split Shot Cutter Assembly with Trough - Exploded View

- 1.1 Unpack the hardware and explosive Segments. The Segments will be numbered in sequential order for assembly.
- 1.2 Remove the Screw (item #6) securing the Housing (item #1) to the Bottom Sub (item #2). Remove the Bottom Sub and attached assembly from Housing.
- 1.3 Remove the Cap Screw (item #9) and Washer (item #10) from the detonator Sub (item #4).



**Note:** *Skip this step if you are using the 48" system as these parts are not present.*

- 1.4 Remove the Screws (item #6) that secure the Charge Trough (item #3) to the Bottom Sub.
- 1.5 Remove the O-rings (item #7) from their package and visually inspect them for cuts or cracks. Lightly lubricate the O-rings with grease and install them onto the Bottom Sub (item #2).
- 1.6 Re-install the Charge Trough onto the Bottom Sub and secure it in place with the screws.

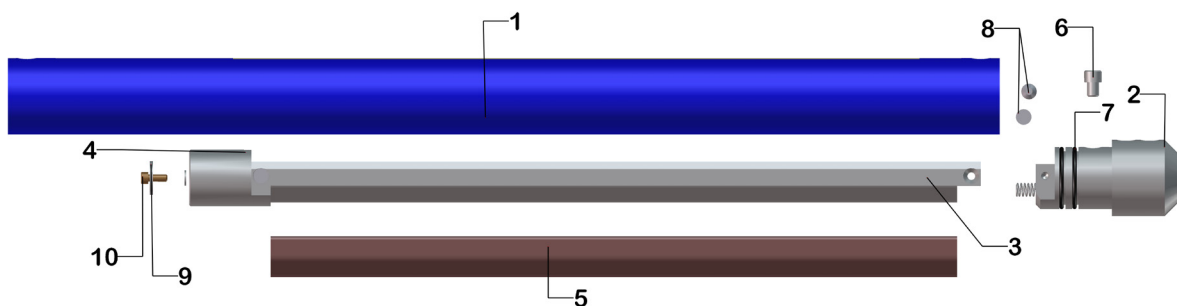
- 1.7 Starting with Segment #1, install the Segment (item #5) into the Charge Trough. The Segment should fit next to the Spring and down into the Charge Trough with the inner angle facing outward, see Figure 2.



**Figure 2**

- 1.8 Repeat installation of Segments with the consecutive number Segment in a linear direction until all the Segments are in the Charge Trough. All of the Segments should fit tightly in the Charge Trough without gaps.
- 1.9 Insert the assembly into the Housing. Be careful to line up the explosive Segments with the different colored window on the Housing. Secure the Housing to the Bottom Sub with the Screw (item #6).

## 2.0 Assembly of Split Shot Cutters - only SSC-1375-322, SSC-2000-311, SSC-2000-321 and SSC-2000-341



**Figure 3:** Split Shot Cutter Assembly with Rails - Exploded View.

- 2.1 Unpack the hardware and explosive Segments. The Segments will be numbered in sequential order for assembly.

2.2 Remove the Screw (item #6) securing the Housing (item #1) to the Bottom Sub (item #2). Remove the Bottom Sub and attached assembly from Housing.

2.3 Remove the Cap Screw (item #9) and Washer (item #10) from the Detonator Sub (item #4).



**Note:** Skip this step if you are using the 48" system as these parts are not present.

2.4 Remove the Flat Head Screws (item #8) that secure the Charge Rails (item #3) to the Bottom Sub.

2.5 Remove the O-rings (item #7) from their package and visually inspect them for cuts or cracks. Lightly lubricate the O-rings with grease and install them onto the Bottom Sub (item #2).

2.6 Re-install the Charge Rails onto the Bottom Sub securing it in place with the Flat Head Screws.

**Caution:** Make sure to install the Charge Rails in the same orientation as they were before they were removed or a misfire could result!

2.7 Start with Segment #1; install the Segment (item #5) into the Charge Rails with the inner angle first until it contacts the internal step. The Segment should fit next to the Spring and between the Charge Rails with the inner angle facing outward, see Figure 4.

2.8 Repeat installation of Segments with the consecutive number Segment in a linear direction until the all the Segments are in the Charge Rails. All of the Segments should fit tightly in Charge Rails without gaps.

2.9 Insert the assembly into the Housing. Be careful to line up the explosive Segments with the different colored window on the Housing. Secure the Housing to the Bottom Sub with the Screw (item #6).

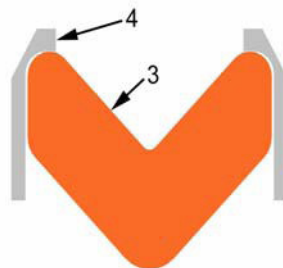


Figure 4

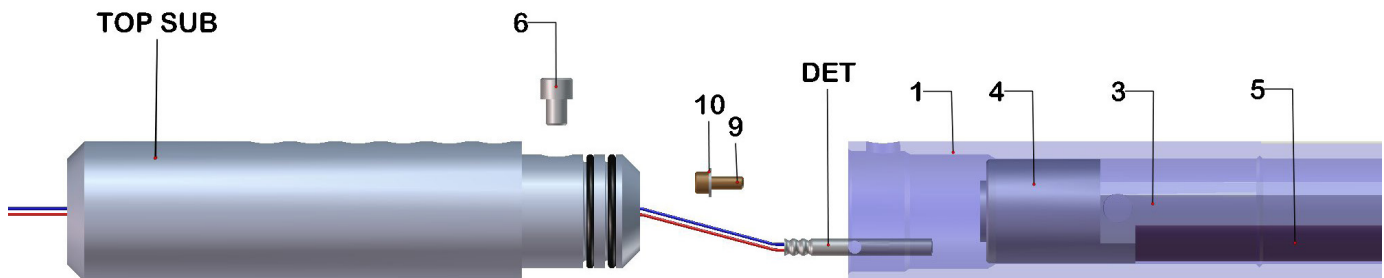
## 3.0 Arming Split Shot Cutters



**Warning:** Only use *DET-3050-009LS* or *2-300750-1!*



**Warning:** Always follow *API RP-67* guidelines when arming electrical detonators!



**Figure 5:** Split Shot Cutter Method of Arming

- 3.1 Remove the detonator from its package.
- 3.2 Insert the detonator into a safety shield.
- 3.3 Measure the resistance of the detonator between the two lead wires with a blaster's multimeter. Please refer to the User Manual specific to the detonator being used to determine what the resistance value should read..
- 3.4 Remove the O-rings (item #7) from their package and visually inspect them for cuts or cracks. Lightly lubricate the O-rings with grease and install them onto the Top Sub.
- 3.5 Insert the detonator lead wires through the hole in the Top Sub.
- 3.6 Electrically connect the detonator leadwires to the wireline or toolstring.
- 3.7 Mechanically connect the Top Sub to the wireline toolstring.
- 3.8 Insure the wireline is shunted through the shooting panel.
- 3.9 Remove the detonator from the safety shield.

**3.10** Insert the detonator, output end first, into the detonator Sub (item #4) inside the Housing.

**3.11** Secure the detonator in place with a Cap Screw (item #9) and Washer (item #10).



**Note:** *Skip this step if you are using the 48" system.*

**3.12** Insert the Top Sub into the Split Shot Housing. Secure the Housing to the Bottom Sub with the Screw (item #6).



**Caution:** *Be careful installing the Top Sub so as not to chafe, pinch or break the detonator lead wires!*

**3.13** The tool is armed and ready to run in hole.