



# Drill Collar Severing Tools Single End - Initiated

## MAN-REC-SET (R01)

### Owen Oil Tools

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## Overview

## Description

Drill Collar Severing Tools are designed to sever drill collars and heavyweight drill pipe reliably and safely during pipe recovery operations.

## Operation

Drill Collar Severing Tools provide a quick and effective solution to sever heavyweight drill pipe and drill collars. These tools should be used when the drill pipe becomes stuck in the well or during plug and abandonment (P & A) operations. The tool with the largest possible diameter capable of running in the stuck pipe should be chosen to achieve maximum performance. Owen's severing tools are to be shot in the tool joint above the stuck point. It is also recommended that tension be applied to the tubing prior to detonation of the Severing Tool to assist in the removal of stuck tubulars.

Drill Collar Severing Tools come standard with HMX explosive powder rated to 400° F (204° C) for 1 hour. Pellets are also available with HNS [500° F (260° C) - 1 hour] by special order.

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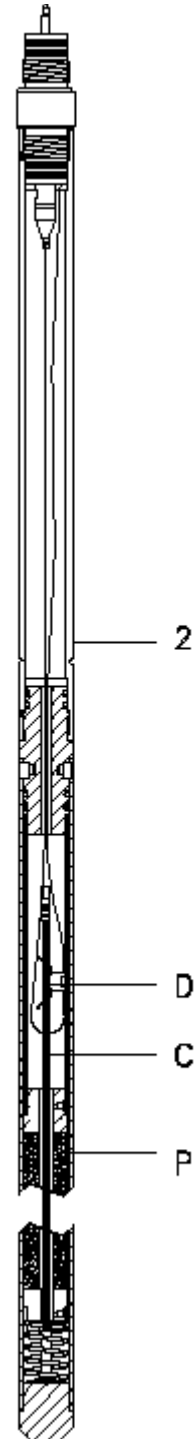


## Specifications and Schematics

Item	Description	1 3/8 in. Tool	1 3/4 in. Tool	2 in. Tool	2 3/8 in. Tool
	Hardware Kit	SEV-1375-100	SEV-1750-100	SEV-2000-100	SEV-2375-100
2	Splice Boot	PUR-0210-001	PUR-0210-001	PUR-0210-001	PUR-0210-001
D	Detonator	See Owen Oil Tools Catalog			
	Required Detonators	1	1	1	1
P	Pellet	CRT-3030-400FV	CRT-3030-400GV	CRT-3030-400JV	CRT-3030-400LV
	Required Pellets	28	44	60	88

Outer Dia. [in (mm)]	Temperature [F (C)]	Pressure [psi (MPa)]	Explosive Weight [lb (kg) (g)]	Recommended Application
1.375 (34.9)	400 (204)	20,000 (137.9)	1.4 (.64) (640)	2 7/8" Drill Pipe
1.750 (44.5)	400 (204)	20,000 (137.9)	2.4 (1.1) (1,100)	5" Drill Pipe
2.000 (50.8)	400 (204)	20,000 (137.9)	3.2 (1.45) (1,450)	6" Drill Pipe
2.375 (60.3)	400 (204)	20,000 (137.9)	4.9 (2.2) (2,200)	9" Drill Pipe

- Please note that the detonators (item D), and the pellets (item P) must be ordered separately.
- HNS Pellets available by special order. Parts should be ordered by replacing the 400 with 500, for example CRT-3030-500X.





## 1.0 Pre-Assembly and Pre-Check of Tools

**1.1** Remove all non-explosive items from the shipping container; this includes the shipping assembly, O-rings, and Cap Screws.

**1.2** Remove the Top Sub with attached detonator holder, center Tube assembly, End Alignment Washer, and the Spring from the Housing.

**1.3** Remove the End Alignment Washer and Spring from the center Tube assembly.

**1.4** Remove the O-rings from their package and visually inspect them for cuts or cracks. Lightly lubricate them with grease and install them on the Top Sub.

**1.5** Install an insulated, center conductor wire from a 1 3/8" teardrop through the 36" long Shock Mandrel and Top Sub for electrical connection with the detonator. A ground wire may also be installed or the detonator may be grounded to the tool.

**1.6** Install the Shock Mandrel onto the 1 3/8 in tear drop sub, and install the severing tool Top Sub onto the Shock Mandrel.

## 2.0 Installation of Pellets

**2.1** Remove the Pellets from the boxes and packaging:

- 1.375 in tools require 28 Pellets
- 1.750 in tools require 44 Pellets
- 2.000 in tools require 60 Pellets
- 2.375 in tools require 88 Pellets.

**2.2** Install a Pellet onto the center Tube assembly over open end. Slide the Pellet along the Tube until it shoulders up against the detonator holder.

**2.3** Repeat Step 2.2, shouldering each Pellet against one another.

**2.4** After all the Pellets are placed on the center Tube assembly, install the end alignment washer on the tube. Secure the alignment washer in place by lightly tightening the screw.

**2.5** Insert a 30 in. long piece of 80 gr/ft detonating cord inside the center tube. The cord should be flush with the end of the center tube on the bottom and will exit the tube on the top entering the detonator holder. A detonator will attach to the cord in the detonator holder when the tool is armed.

**2.6** Install the spring over the end of the alignment washer.

## 3.0 Arming the Tool



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

**3.1** Reference the detonator user instructions included with the detonator and the Owen Oil Tools Do's and Don'ts for further information regarding the Owen resistorized bridge detonators.

**3.2** Insure the wireline is shunted through the shooting panel.

**3.3** Remove the Owen Resistorized Bridge Detonator from its original packaging and insert the detonator inside a detonator arming safety tube.

**3.4** An electrical check of the detonator's firing circuit may be conducted at this time using electrical detonator circuit testing instruments.

**3.5** Electrically connect the wires to the toolstring. The red wire is the positive lead, and black/white wire is ground when shooting DC+. Switch the leads when shooting DC-.

**3.6** Mechanically connect the Top Sub to the Extension Mandrel and toolstring.

**3.7** Remove the detonator from the safety tube and mechanically connect the detonator to the detonating cord according to the detonator user instructions. The severing tool is now armed.

## 4.0 Final Tool Assembly

**4.1** Check all electrical wiring to prevent damage to wires when installing housing over the assembled tool. Never force, pinch, crush, or impact the explosive components or wiring.

**4.2** Slide the housing over the armed detonator, detonating cord, and pellets.

**4.3** Secure the housing to the top sub with cap screws.

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

## 5.0 Suggested Firing Technique

**5.1** After positioning the tool in the tool joint, increase the power to the firing circuit from 0 Amps to 0.8 Amps over a 4 - 6 second interval until detonator fires.



***Caution: Never surge the firing circuit with power as it may cause the detonator to fail and a mis-run to occur!***

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