



Mechanical Safety Impact Firing Head (HP)

TC-012-1500-200

MAN-TC-012-1500-200 (R04)

Owen Oil Tools

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.

Owen Oil Tools pre-assembles its tools as per the field operating manual. It is the responsibility of the purchaser to insure that this tool is assembled as required, prior to use.

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.

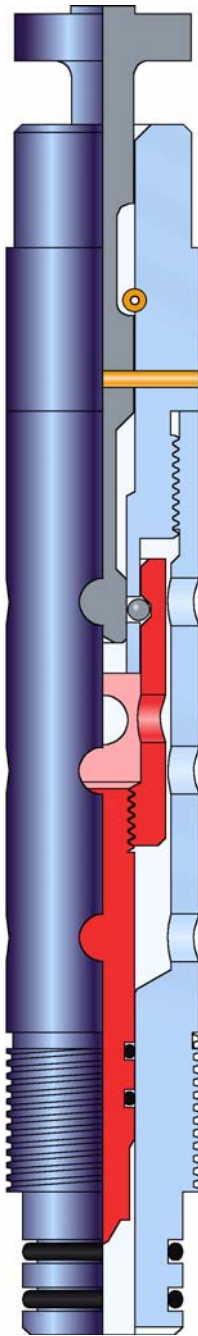
This document contains Confidential Information of Owen Oil Tools LP (Owen) and is furnished to the customer for information purposes only. This document must not be reproduced in any way whatsoever, in part or in whole, or distributed outside the customer organization, without first obtaining the express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

© 2008 Owen Oil Tools

Mechanical Safety Impact Firing Head (HP)



Mechanical Safety Impact Firing Head (HP)



Description

Note: This tool should be used with Wide Nose Drop Bars.

The Mechanical Safety Impact Firing Head is designed to be the primary firing system on all Wide Nose Drop Bar TCP operations. Designed to meet API RP-67 safety recommendations, the Mechanical Safety Impact Firing Heads requires both the drop bar action as well as a minimum hydrostatic to fire. Two models are utilized to cover the pressure ranges normally anticipated in TCP operations. The High Pressure (HP) version requires 2,000 psi (all-fire) to operate. When the Wide Nose Drop Bar strikes the firing head, the impact breaks the shear pin, which secures the Release rod and pushes it down. This movement releases the firing pin driving it into the percussion detonator and fires the guns. This Firing Head must be run in conjunction with an Impact Firing Head No-Go or a Tubular Collar No-Go to Refer to catalog page TC-170-0.3 for details.

Features and Benefits

- Electrical currents, natural or man-made cannot detonate the Safety Impact Firing Heads.
- Ideal for all Wide Nose Drop Bar Firing operations where a min. of 2,000 psi hydrostatic exists.
- Ideal for heavy mud, deviated wells and high pressure Wells
- Operates with a Wide Nose Drop Bar.

Specifications

O.D.	1.50"	38 mm
Make-up Length	8.00"	203 mm
Max. Temperature ¹	250°F (121°C)	
Max. Hydrostatic ²	20,000 psi	137.9 MPa
Min. Hydrostatic	2,000 psi	13.8 MPa

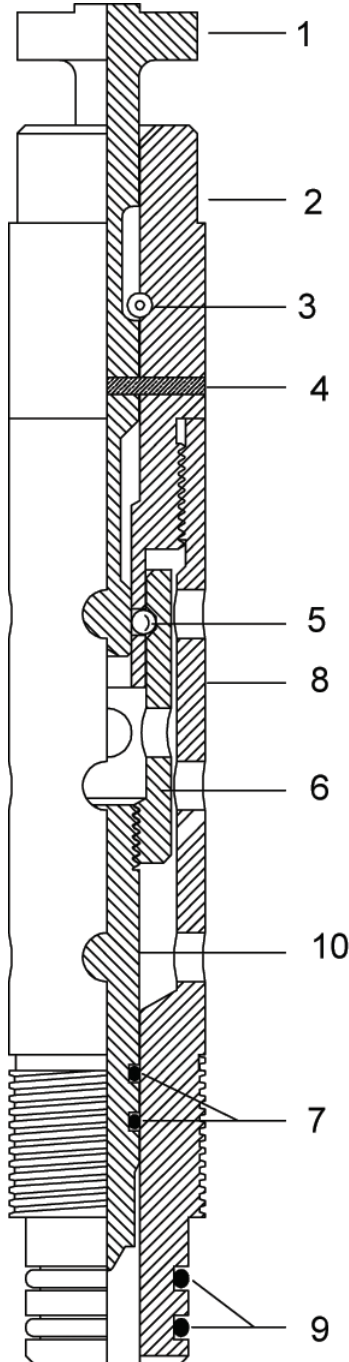
¹The maximum temperature can be increased to 450°F (230°C) by substituting the 90 durometer Nitrile Orings with 90 durometer Viton O-rings. Refer to the Time vs Temperature chart for Explosives to confirm any explosives requirements.

²The maximum pressure is determined by the maximum allowable pressure differential of Initiator after detonation.

Mechanical Safety Impact Firing Head (HP)



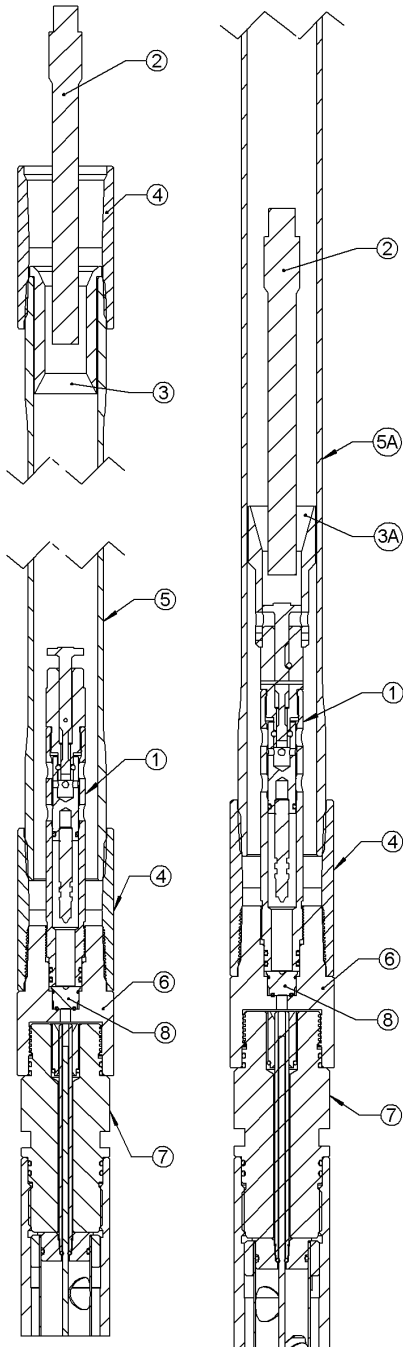
BOM and Schematic



Item	Part Number	Qty	Description
--	TC-012-1500-200	--	Mechanical Safety Impact FH (HP)
1	TC-012-0001-000	1	Release Rod, S.I.
2	TC-012-0002-000	1	Body, Release Rod, S.I.
3	PF-130-0188-125	1	Roll Pin
4	PF-120-0188-150H	1	Spirol®, Coiled Pin
5	ST-040-0188-000	4	Retaining Balls
6	TC-012-0004-200	1	Ball Retainer, H.P.
7	OOO-N569-109	2	O-Ring
8	TC-012-0003-200	1	Pin Body; H.P.
9	OOO-N569-214	2	O-Ring
10	TC-012-0005-000	1	Firing Pin, C.P. Detonator
--	TC-012-1500-299	--	Re-Dress Kit, Safety Impact Assy (H.P.)
--	MAN-TC-012-1500-200	--	Assembly Manual

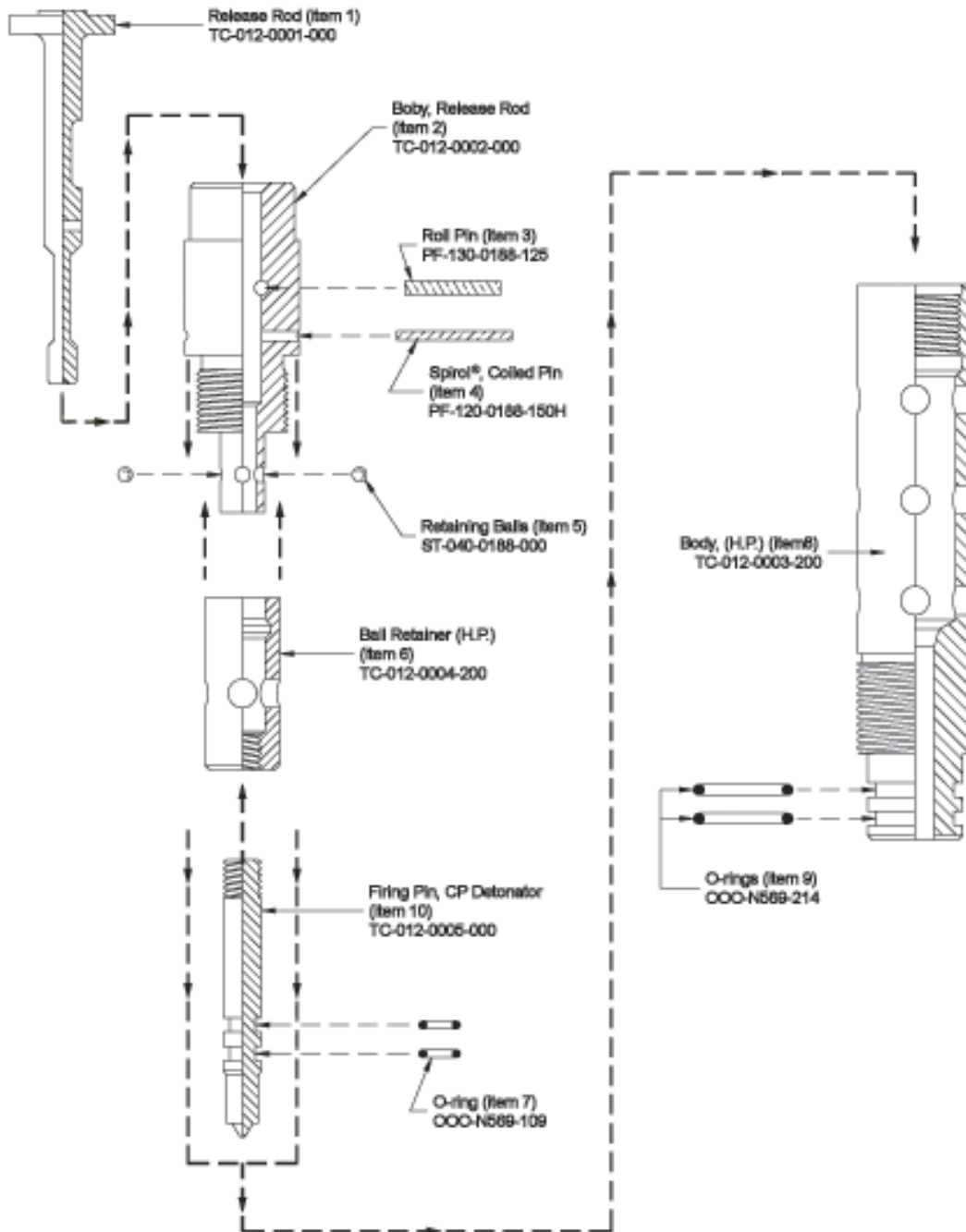
Item	Part Number	Qty	Description
--	TC-012-1500-299	--	Re-Dress Kit, Mechanical Safety Impact Firing Head (HP)
3	PF-130-0188-125	1	Roll Pin
4	PF-120-0188-150H	1	Spirol®, .188" Coiled Pin
4	PF-120-0125-150H	1	Spirol®, .125" Coiled Pin (Old Style)
5	ST-040-0188-000	4	Retaining Balls
7	OOO-N569-109	2	O-Ring
9	OOO-N569-214	2	O-Ring

Typical Hook-up, BOM and Schematic



Item	Part No.	Description
	TC-012-1500-200	Safety Impact Assy. (H.P.)
2	TC-136-1250-006	Drop Bar Assy. 6' (Sectional)
	TC-136-1250-010	Drop Bar Assy. 10' (Sectional)
	TC-138-1250-008	Drop Bar 8' (Solid)
	TC-138-1250-010	Drop Bar 10' (Solid)
3	TC-170-2375-000	Tubular No-Go for 2-3/8
	TC-170-2875-000	Tubular No-Go for 2-7/8
	TC-170-3500-000	Tubular No-Go for 3-1/2
3A	TC-010-0022-110	Impact No-Go for 2-3/8 (1.39" I.D.)
	TC-010-0029-110	Impact No-Go for 2-7/8 (1.39" I.D.)
	TC-010-0030-110	Impact No-Go for 3-1/2 (1.39" I.D.)
4	CC-001-2375-000	Collar for 2-3/8 EUE
	CC-001-2875-000	Collar for 2-7/8 EUE
	CC-001-3500-000	Collar for 3-1/2 EUE
5	CC-101-2347-002	Pup Joint 2-3/8 EUE (2' length)
	CC-101-2865-002	Pup Joint 2-7/8 EUE (2' length)
	CC-101-3593-002	Pup Joint 3-1/2 EUE (2' length)
5A	--	Tubing
6	TC-005-0001-000	Detonator Body with 2-3/8 EUE Pin, 3-1/8" O.D.
	TC-005-0003-000	Detonator Body with 2-7/8 EUE Pin, 3-11/16" O.D.
	TC-005-0004-000	Detonator Body with 3-1/2 EUE Pin, 4-1/2" O.D.
7	--	Owen Top Gun Sub
8	Reference	Percussion Detonator

Exploded View





Warning: *The assembly of this tool requires the handling of an Explosive Device and all safety precautions must be adhered to and observed!*



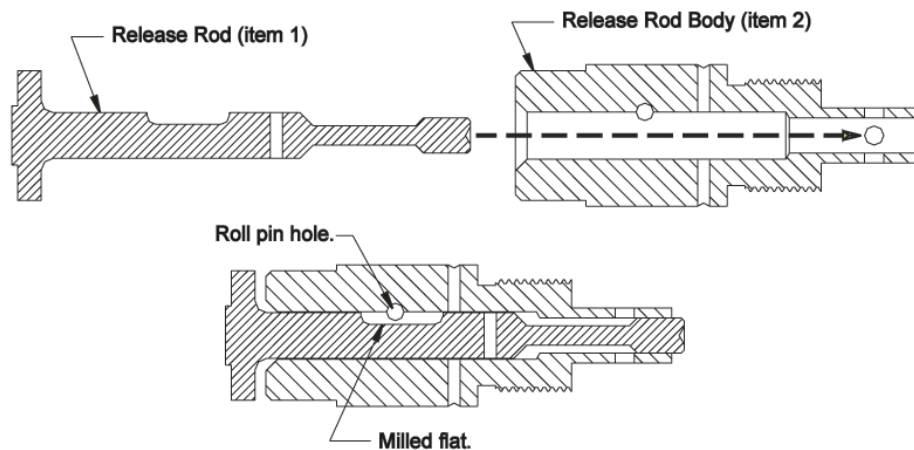
Note: *Check all items against the parts list to be sure of having the correct parts and quantities.*



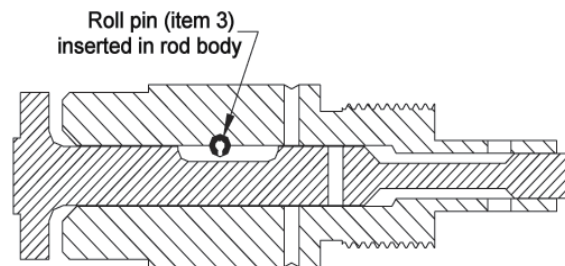
Note: *Check for any damage to the parts which would prevent the part from being assembled correctly, easily and safely.*

1.0 Assembly

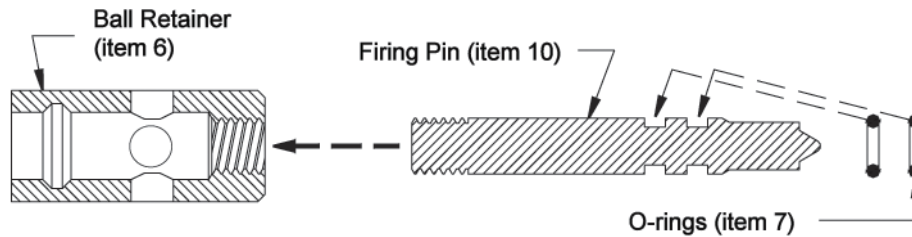
1.1 Install the Release Rod (item #1) into the Release Rod Body (item #2) so that the milled flat on the Release Rod is in alignment with the Roll Pin hole.



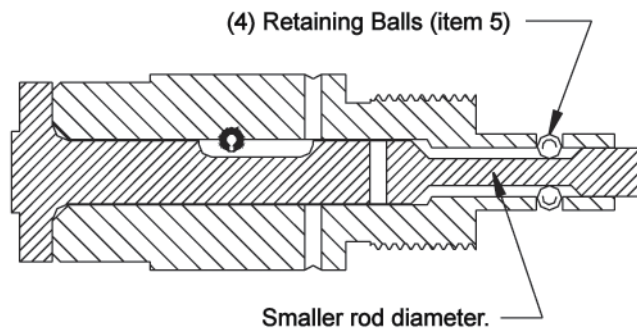
1.2 Insert and hammer in the Roll Pin (item #3) until the pin ends are flush with the rod body. The Release Rod should slide easily without binding. Set aside.



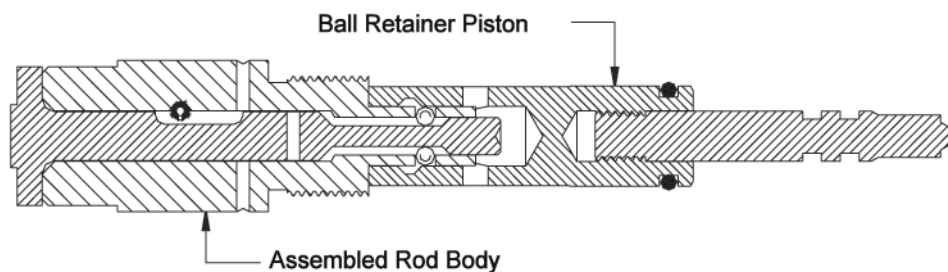
1.3 Install the O-rings (item #7) onto the Firing Pin (item #10). Apply a small amount of grease to the threads of the Firing Pin. Thread the Firing Pin into the Ball Retainer (item #6) and tighten.



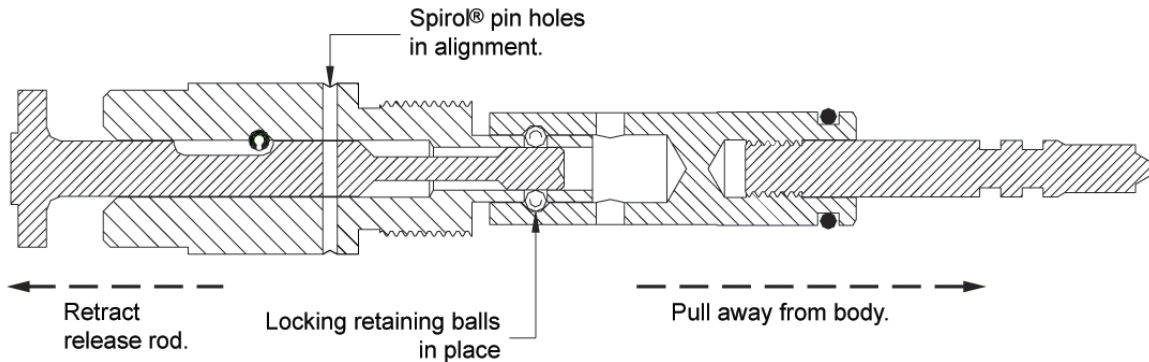
1.4 Slide the Release Rod into the rod body until the smaller diameter of the rod is visible through the four (4) holes of the body. Place a small amount of grease into each hole and insert the four (4) Retaining Balls (item #5). The Retaining Balls should be flush with the surface of the body.



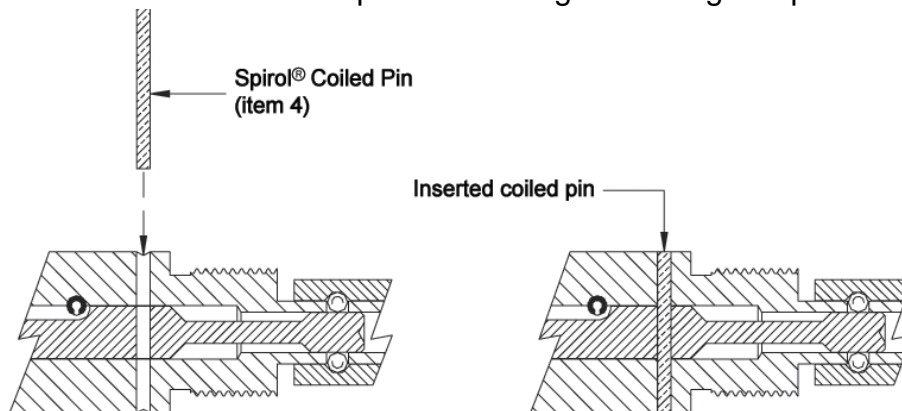
1.5 Holding the Release Rod in the rod body, slide the Ball Retainer Piston/Firing Pin all the way onto the rod body. Make sure that the Retaining Balls stay in place.



1.6 Retract the Release Rod and pull the Ball Retainer Piston away from the body at the same time. This procedure will lock the Retaining Balls into the Ball Retainer Piston and align the Spirol® Coiled Pin holes in the rod body and the Release Rod.



1.7 Insert and tap in the Spirol® Coiled Pin (item #4) thru the pin holes on the rod body and Release Rod. Remember to keep the holes aligned during this procedure.



1.8 Install the O-rings (item #9) onto the Impact Body (item #8). Apply some grease to the threads of the Release Rod Body and the O-ring on the Ball Retainer Piston, then insert and thread into the Impact Body and tighten.

