



Tubing Swivel

TC-140-2375-000

TC-140-2875-000

TC-140-3125-000

MAN-TC-140 (R01)

Owen Oil Tools

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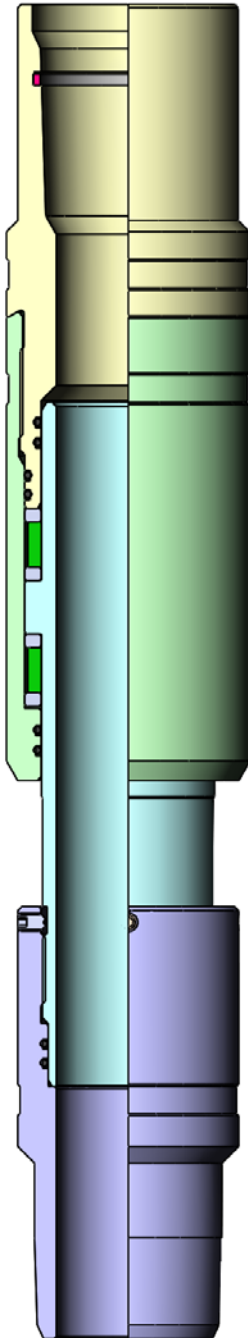
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Description

The Tubing Swivel is designed for TCP applications and allows the gun assembly to rotate freely on the tubing. The main purpose for this tool is to establish the “high side” in a highly deviated or horizontal wellbore in combination with orienting fins.

This tool is designed with high load roller bearings which ensure the tool functions properly in tension or compression.

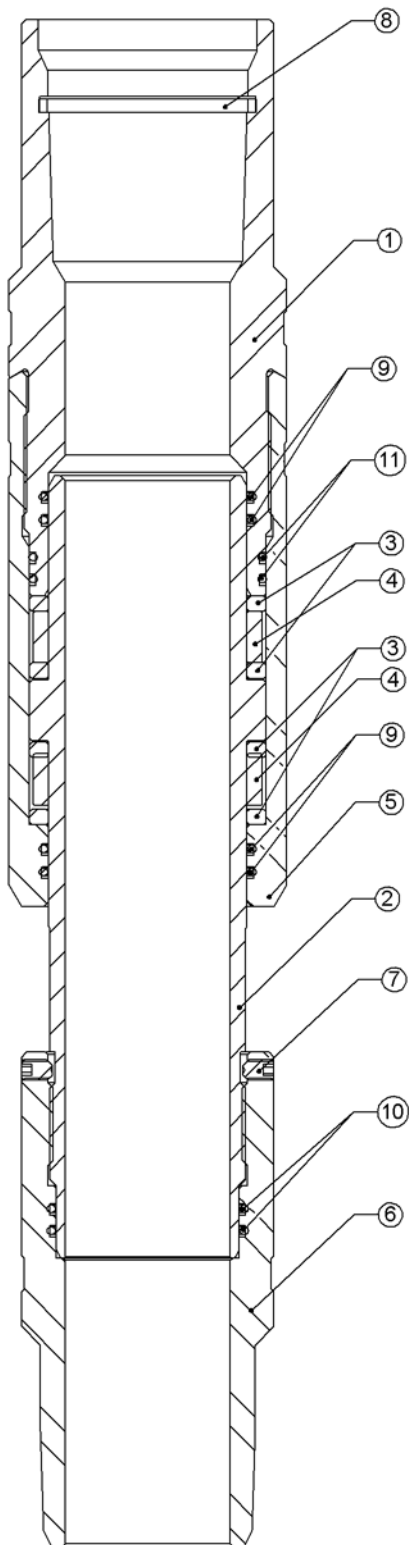
Features and Benefits

- High load bearing capacity in tension or compression
- Compact bearing design results in slim OD and large bore, allowing free internal flow
- Turns easily when loaded in tension or compression
- Easy to service due to simple bearing design

Specifications

	2-3/8 in (60.3 mm)		2-7/8 in (73.0 mm)	
Maximum OD	3.375 in	85.7 mm	4.000 in	102 mm
Minimum ID	1.995 in	50.7 mm	2.441 in	62.0 mm
Tensile	94,410 lb	41 990 daN	114,960 lb	51 130 daN
Max Pressure	9,194 psi	63.39 MPa	8,883 psi	62.25 MPa
Collapse	9,378 psi	64.66 MPa	9,590 psi	66.12 MPa
Overall Length	18.53 in	471 mm	21.17 in	538 mm
Max Temp ¹	250°F (121°C)			
Connections	2-3/8 in (60.3 mm) EU		2-7/8 in (73.0 mm) EU	
Product	TC-140-2375-000		TC-140-2875-000	
Redress Kit	TC-140-2375-099		TC-140-2875-099	

¹The maximum temperature can be increased to 450°F (230°C) by substituting the 90 durometer Nitrile O-rings with 90 durometer Viton O-rings



Item	Part Number	Qty	Description
--	TC-140-2375-000	--	Tubing Swivel 2-3/8" EU
1	TC-140-0000-000	1	Top Sub 2-3/8" EU
2	TC-140-0004-000	1	Mandrel
3	TC-140-0002-000	4	Washer
4	TC-140-0003-000	24	Bearing
5	TC-140-0001-000	1	Bearing Housing
6	TC-140-0005-000	1	Bottom Sub 2-3/8" EU
7	PF-001-025C-038S	4	Set Screw SO 1/4"-20 UNC x 3/8 Steel
8	MI-305-2375-000	1	API EUE Seal Ring
9	OOO-N569-143	4	O-Ring 90 Durometer Nitrile
10	OOO-N569-140	2	O-Ring 90 Durometer Nitrile
11	OOO-N569-147	2	O-Ring 90 Durometer Nitrile
--	TC-140-2375-098	--	Redress Kit, Tubing Swivel, Seals Only
--	TC-140-2375-099	--	Redress Kit, Tubing Swivel

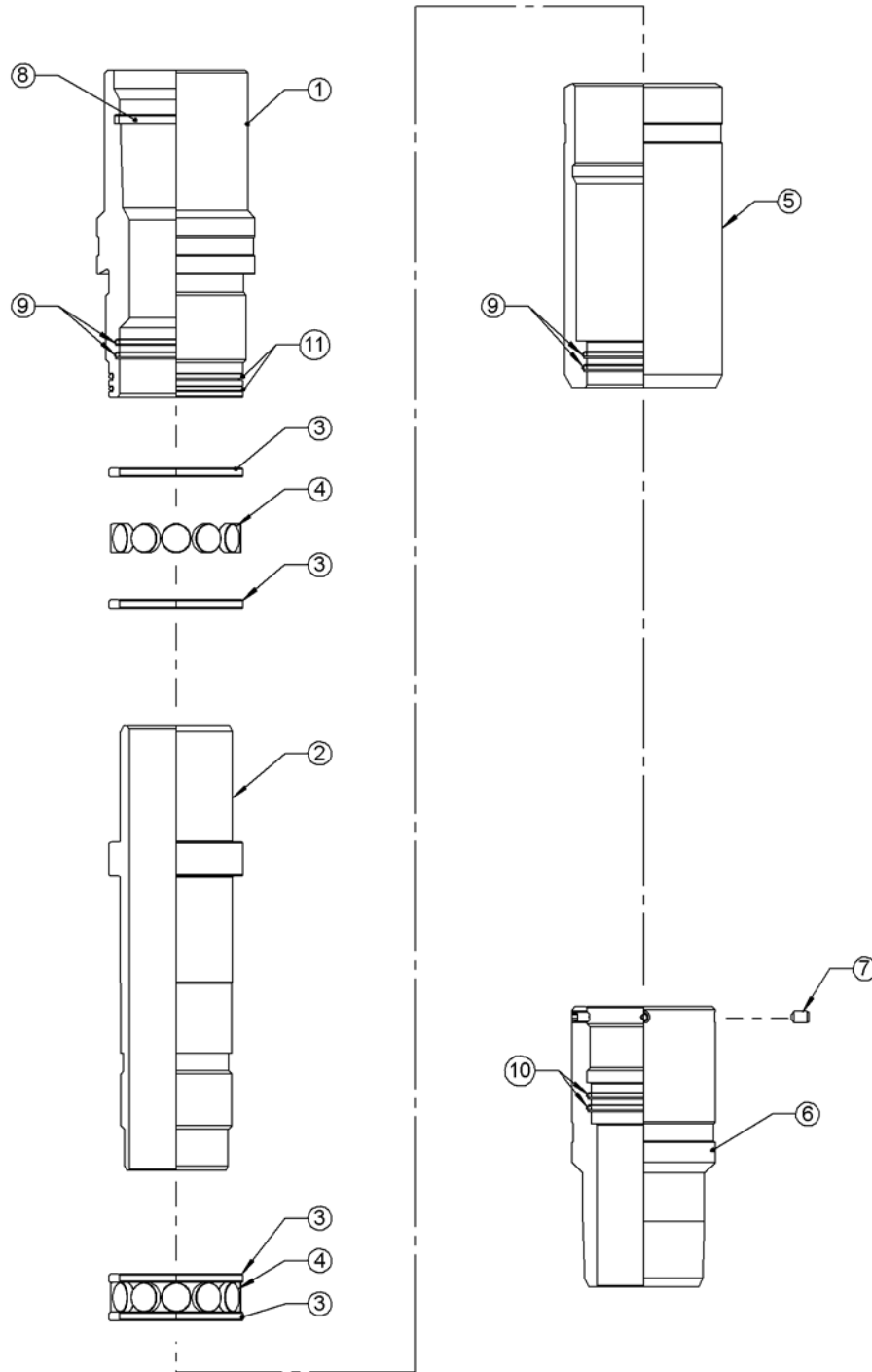
Item	Part Number	Qty	Description
--	TC-140-2875-000	--	Tubing Swivel 2-7/8" EU
1	TC-140-0006-000	1	Top Sub 2-7/8" EU
2	TC-140-0009-000	1	Mandrel
3	TC-140-0008-000	4	Washer
4	TC-140-0003-000	28	Bearing
5	TC-140-0007-000	1	Bearing Housing
6	TC-140-0010-000	1	Bottom Sub 2-7/8" EU
7	PF-001-025C-038S	4	Set Screw SO 1/4"-20 UNC x 3/8 Steel
8	MI-305-2875-000	1	2-7/8" EU Thread API Seal Ring
9	OOO-N569-150	4	O-Ring 90 Durometer Nitrile
10	OOO-N569-148	2	O-Ring 90 Durometer Nitrile
11	OOO-N569-152	2	O-Ring 90 Durometer Nitrile
--	TC-140-2875-098	--	Redress Kit, Tubing Swivel, Seals Only
--	TC-140-2875-099	--	Redress Kit, Tubing Swivel

Item	Part Number	Qty	Description
--	TC-140-2375-098	--	Redress Kit Tubing Swivel 2-3/8" EU, Seals only
8	MI-305-2375-000	1	2-3/8" EU Thread API Seal Ring
9	OOO-N569-143	4	O-Ring 90 Durometer Nitrile
10	OOO-N569-140	2	O-Ring 90 Durometer Nitrile
11	OOO-N569-147	2	O-Ring 90 Durometer Nitrile

Item	Part Number	Qty	Description
--	TC-140-2875-098	--	Redress Kit Tubing Swivel 2-7/8" EU, Seals only
8	MI-305-2875-000	1	2-7/8" EU Thread API Seal Ring
9	OOO-N569-150	4	O-Ring 90 Durometer Nitrile
10	OOO-N569-148	2	O-Ring 90 Durometer Nitrile
11	OOO-N569-152	2	O-Ring 90 Durometer Nitrile

Item	Part Number	Qty	Description
--	TC-140-2375-099	--	Redress Kit Tubing Swivel 2-3/8" EU
3	TC-140-0002-000	4	Washer
4	TC-140-0003-000	24	Bearing
8	MI-305-2375-000	1	2-3/8" EU Thread API Seal Ring
9	OOO-N569-143	4	O-Ring 90 Durometer Nitrile
10	OOO-N569-140	2	O-Ring 90 Durometer Nitrile
11	OOO-N569-147	2	O-Ring 90 Durometer Nitrile

Item	Part Number	Qty	Description
--	TC-140-2875-099	--	Redress Kit Tubing Swivel 2-7/8" EU
3	TC-140-0008-000	4	Washer
4	TC-140-0003-000	28	Bearing
8	MI-305-2875-000	1	2-7/8" EU Thread Seal Ring
9	OOO-N569-150	4	O-Ring 90 Durometer Nitrile
10	OOO-N569-148	2	O-Ring 90 Durometer Nitrile
11	OOO-N569-152	2	O-Ring 90 Durometer Nitrile



Refer to Exploded View for Assembly Reference

Step 1: Place the Mandrel (item 2), thread end up, on the bench. Slide two Washers (item 3) over threads to bearing shoulder. Liberally grease between washer and press twelve (12) bearings (item 4) into grease, flat side against Mandrel. See Figure 1

NOTE: TC-140-2875-000 utilizes 14 bearings instead of 12 bearings listed in the instructions (12 bearings are used in TC-140-2375-000)

Step 2: Lightly grease O-rings (item 9) and install into bottom inside of Bearing Housing (item 5). Put Bearing Housing thread onto bench. Invert Mandrel (item 2) and slide, thread first, into Bearing Housing carefully, so as not to disturb Washer/Bearing Assembly. The bearing shoulder should be exposed to allow the other two washers (item 3) onto shoulder and grease liberally between washers then press other twelve (12) Bearings (item 4) into grease. See Figure 2

Step 3: Lightly grease Top Sub O-rings of Top Sub (item 1) and install two (2) O-rings inside (item 9) and two (2) outside (item 11) of Top Sub (item 1). Install teflon seal ring (item 8) into the EU thread of Top Sub. Take Bearing Housing (item 5) and slowly slide it up Mandrel (item 2) until it shoulders out on bottom washer. Make sure bearings do not fall off. Take Top Sub (item 1) and screw into Bottom Housing and torque as required.

Step 4: Lightly grease remaining two (2) O-rings (item 10) and install inside Bottom Sub (item 6). Thread Bottom Sub onto Mandrel (item 2) and torque as required. Install four (4) Set Screws (item) into Bottom Sub. The tool is now assembled.

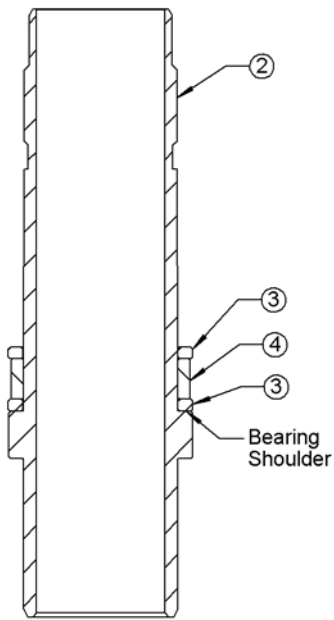


FIGURE 1

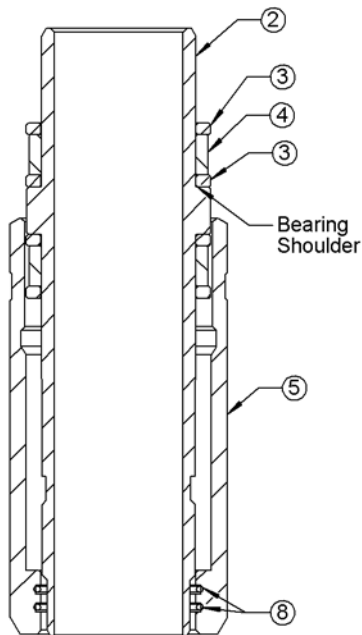
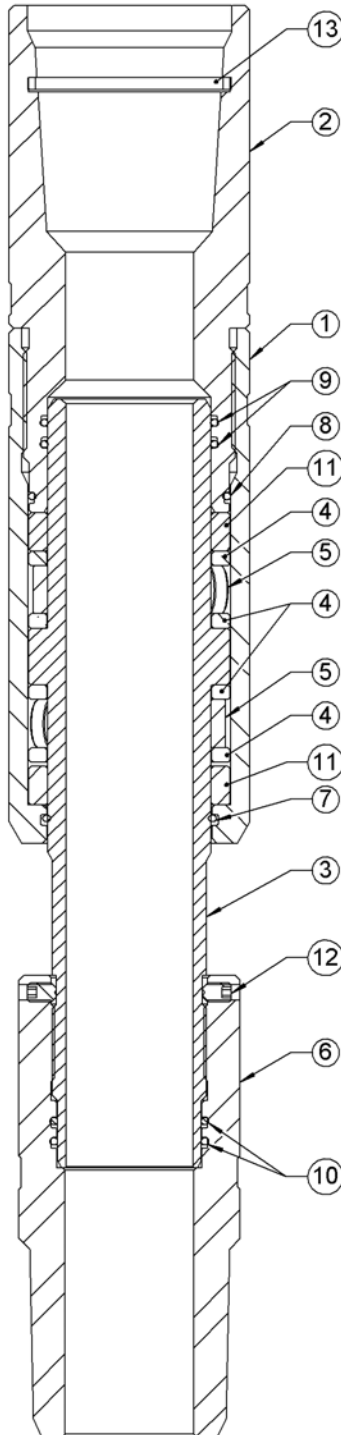


FIGURE 2



Tubing Swivel TC-140-3125-000 Special Swivel

3.125"OD with 2-3/8 EU Thread

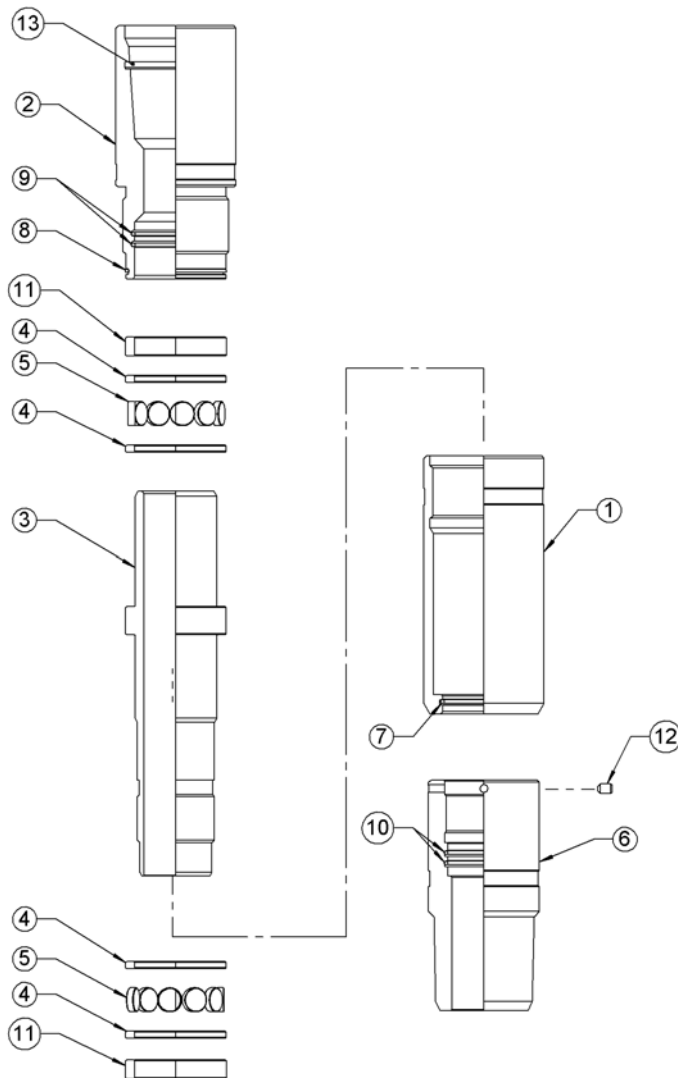


3.125" OD with 2-3/8" EU		
Maximum OD	3.125 in	81.7 mm
Minimum ID	1.650 in	41.9
Tensile	65,820 lb	29,276 daN
Max Pressure	9,194 psi	63.39 MPa
Collapse	9,378 psi	64.66 MPa
Overall Length	18.59 in	472 mm
Max Temp ¹	250°F (121°C)	
Connections	2-3/8 in (60.3 mm) EU Box X Pin	
Product	TC-140-3125-000	
Redress Kit	TC-140-3125-099	

Item	Part Number	Qty	Description
--	TC-140-3125-000	--	Tubing Swivel 2-3/8" EU
1	TC-140-0018-000	1	Bearing Housing
2	TC-140-0017-000	1	Top Sub 2-3/8" EU
3	TC-140-0020-000	1	Mandrel
4	TC-140-0019-000	4	Washer
5	TC-140-0003-000	22	Bearings
6	TC-140-0021-000	1	Bottom Sub 2-3/8" EU
7	OOO-N569-137	1	O-Ring 90 Durometer Nitrile
8	OOO-N569-143	1	O-Ring 90 Durometer Nitrile
9	OOO-N569-138	2	O-Ring 90 Durometer Nitrile
10	OOO-N569-134	2	O-Ring 90 Durometer Nitrile
11	TC-140-0022-000	2	Brass Bushing
12	PF-001-025C-038S	4	Set Screw SO 1/4"-20 UNC x 3/8 Steel
13	MI-305-2375-000	1	API EUE Seal Ring
--	TC-140-2375-098	--	Redress Kit, Tubing Swivel, Seals Only
--	TC-140-2375-099	--	Redress Kit, Tubing Swivel

Item	Part Number	Qty	Description
--	TC-140-3125-098	--	Redress Kit 3.125" OD Tubing Swivel with 2-3/8" EU, Seals Only
7	OOO-N569-137	1	O-Ring 90 Durometer Nitrile
8	OOO-N569-143	1	O-Ring 90 Durometer Nitrile
9	OOO-N569-138	2	O-Ring 90 Durometer Nitrile
10	OOO-N569-134	2	O-Ring 90 Durometer Nitrile
13	MI-305-2375-000	1	2-3/8" EU Thread API Seal Ring

Item	Part Number	Qty	Description
--	TC-140-3125-099	--	Redress Kit 3.125" OD Tubing Swivel with 2-3/8" EU
4	TC140-0019-000	4	Washers
5	TC-140-0003-000	22	Bearings
7	OOO-N569-137	1	O-Ring 90 Durometer Nitrile
8	OOO-N569-143	1	O-Ring 90 Durometer Nitrile
9	OOO-N569-138	2	O-Ring 90 Durometer Nitrile
10	OOO-N569-134	2	O-Ring 90 Durometer Nitrile
11	TC-140-0022-00	2	Brass Bushings
13	MI-305-2375-000	1	2-3/8" EU Thread API Seal Ring



1. Place mandrel (item 3) on bench with thread facing up. Slide one washer (item 4) over mandrel onto mandrel shoulder. Grease area liberally above the washer and stick 11 bearings (item 5) into the grease. Slide another washer (item 4) and follow with a Brass Bushing (item 11).

2. Grease O-ring (item 7) lightly and install into the Bearing Housing (item 1) then slide the bearing housing over the mandrel.

3. Invert the mandrel and bearing housing so thread is facing down and housing and mandrel are both resting on the bench.

4. Repeat Step 1. First the washer (item 4) then grease and stick 11 bearings (item 5) into grease. Install the last washer (item 4) and the Brass Bushing (item 11).

5. Lightly grease and install two O-rings (item 9) and one O-ring (item 8) as well as the thread seal (item 13) onto Top Sub (item 2) then thread the Top Sub into the Bearing Housing (item 1) carefully, not to disturb bearings.

6. Lightly grease and install two O-rings (item 10) on the mandrel (item 3), then thread Bottom Sub (item 6) onto mandrel and thread set screws (item 12) into Bottom Sub.