



Dual Circulation Sub

MAN-TTT-710 (R01)

Thru-Tubing Technology

A Division of Owen Oil Tools LP

402 Machine Loop

Scott, Louisiana, 70583, USA

Phone: +1 (337) 984-1181

Fax: +1 (337) 984-3044

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.

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 LP

Dual Circulation Sub

Description

The Dual Circulation Sub was designed to provide a means of circulation in an emergency situation if the string below the sub becomes plugged. It can also be used to bypass circulation through the mud motor to reduce unnecessary wear on the motor while circulating out of the hole.

Operation

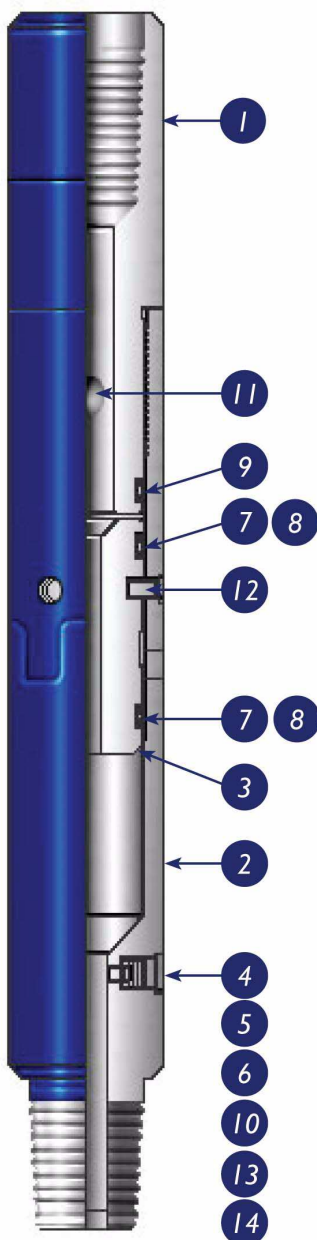
The sub has a rupture disc incorporated that will burst when a vast increase of pressure is created due to the string becoming plugged. This allows enough flow to pump a ball to the piston. An increase in pump pressure causes the brass shear screws to shear, allowing the ports to become exposed so adequate circulation can be continued. The sub is also used when the motor job is complete and circulation is required while tripping out of the hole. The sub is placed above the motor and circulation is again diverted through the port holes and unnecessary wear on the motor is eliminated.



Note: *Unless otherwise indicated, all the strength figures given in this manual, are the result of calculations based on the yield strength of the material used in the manufacture of this product. These strength calculations are considered accurate within plus or minus 20% and are to be used only as a guide. They do not constitute a guarantee, actual or implied. In use, appropriate allowance should be made as a safety factor.*

Dual Circulation Sub

TT0710-168B BOM, Schematic and Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0710-168B-001
2	1	Body	TT0710-168B-002
3	1	Piston	TT0710-168A-003
4	2	Disc Plates	TT0710-168B-004
5	1	Plug Disc	TT0710-168B-005
6	1	Plug Cap	TT0710-168B-006
7	2	O-Rings 1 1/4" x 1 1/16" x 3/32" 2-121	PUR-TORV000-121
8	4	Back-Up Rings 1 1/4" x 1 1/16" x 3/32" 8-121	PUR-TOBU000-121
9	1	O-Ring 1 5/16" x 1 1/8" x 3/32" 2-122	PUR-TORV000-122
10	1	O-Ring 1/4" x 3/8" x 1/16" 2-010	PUR-TORV000-010
11	1	Steel Ball Bearing 7/16"	PUR-TSBC000-028
12	4	Brass Slotted Shear Screws 10-32 x 7/16"	PUR-TBSS121-028
13	1	Steel Allen Lock Screw 7/16-20 x 7/32"	PUR-THLS281-014
14	1	Rupture Disc (range of pressures available)	TT0710-168B-XXX

Tool Name: 1.688 in. Dual Circulation Sub

Product Code: TT0710-168B **Tool OD:** 1.688 in. **Tool ID:** 0.375 in.

Material: AISI 4140 HT **Tool Length:** 11.8 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The thread recess of the Stub Acme box connection of the Body, 35,000 lbs.

Burst Point and Burst Pressure: The O-ring bore of the Body, 28,700 psi.

Torsional Weak Point and Ft-Lbs to Yield: 610 ft-lbs as a function of torsional yield of the Stub Acme box connection of the Body.

Recommended Make Up Torque:

1st Connection: The Top Sub - Body Stub Acme connection -150 ft-lbs.

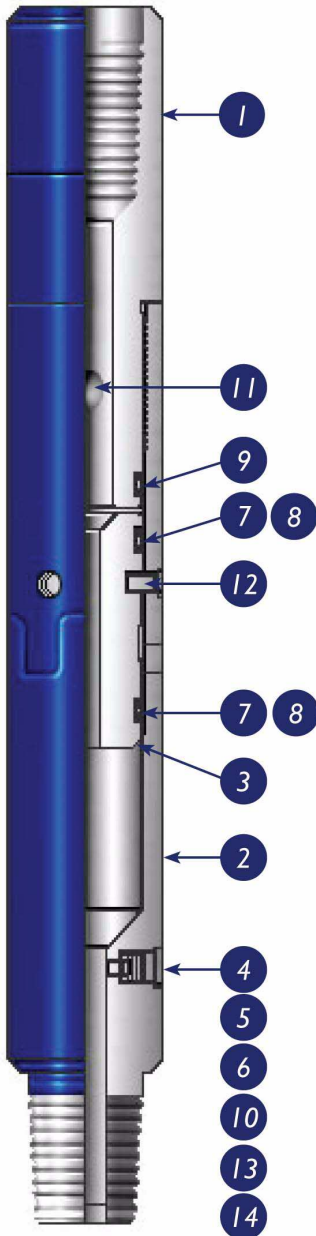
Miscellaneous Information:

Shear Value of Brass Shear Screws: 750 psi (+/- 15%) per Shear Screw.

Steel Ball Bearing for Tool: 7/16 in.

Dual Circulation Sub

TT0710-175B BOM, Schematic and Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0710-175B-001
2	1	Body	TT0710-175B-002
3	1	Piston	TT0710-168A-003
4	2	Disc Plates	TT0710-168B-004
5	1	Plug Disc	TT0710-168B-005
6	1	Plug Cap	TT0710-168B-006
7	2	O-Rings 1 1/16" x 1 1/4" x 3/32" 2-121	PUR-TORV000-121
8	4	Back-Up Rings 1 1/16"x 1 1/4" x 3/32" 8-121	PUR-TOBU000-121
9	1	O-Ring 1 1/8" x 1 5/16" x 3/32" 2-122	PUR-TORV000-122
10	1	O-Ring 1/4" x 3/8" x 1/16" 2-010	PUR-TORV000-010
11	1	Steel Ball Bearing 7/16"	PUR-TSBC000-028
12	4	Brass Slotted Shear Screws 10-32 x 7/16"	PUR-TBSS121-028
13	1	Steel Allen Lock Screw 7/16-20 x 7/16"	PUR-THLS281-014
14	1	Rupture Disc (range of pressures available)	TT0710-168B-XXX

Tool Name: 1.750 in. Dual Circulation Sub

Product Code: TT0710-175B **Tool OD:** 1.750 in. **Tool ID:** 0.375 in.

Material: AISI 4140 HT **Tool Length:** 11.8 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The thread recess of the Stub Acme box connection of the Bottom Sub, 42,600 lbs.

Burst Point and Burst Pressure: The O-ring bore of the Bottom Sub, 32,000 psi.

Torsional Weak Point and Ft-Lbs to Yield: 800 ft-lbs as a function of torsional yield of the Stub Acme box connection of the Bottom Sub.

Recommended Make Up Torque:

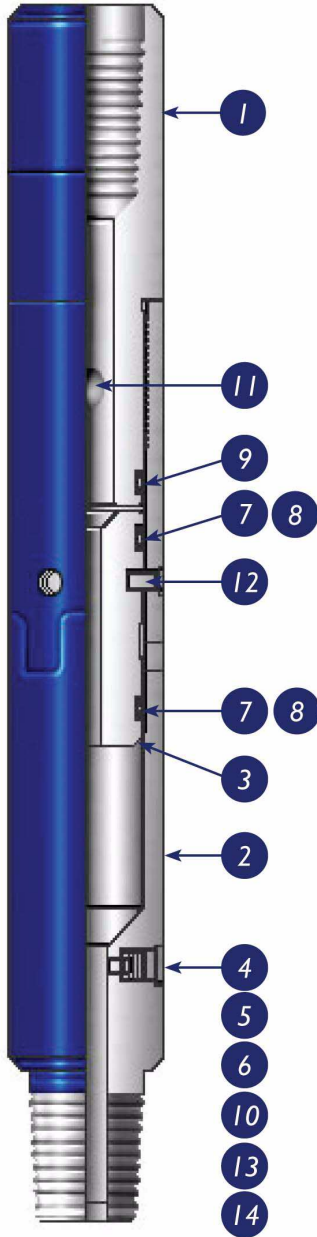
1st Connection: The Top Sub - Bottom Sub Stub Acme connection - 200 ft-lbs.

Miscellaneous Information:

Shear Value of Brass Shear Screws: 750 psi (+/- 15%) per Shear Screw.

Steel Ball Bearing for Tool: 7/16 in.

TT0710-181B BOM, Schematic and Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0710-181B-001
2	1	Body	TT0710-181B-002
3	1	Piston	TT0710-168A-003
4	2	Disc Plates	TT0710-168B-004
5	1	Plug Disc	TT0710-168B-005
6	1	Plug Cap	TT0710-168B-006
7	2	O-Rings 1 1/16" x 1 1/4" x 3/32" 2-121	PUR-TORV000-121
8	4	Back-Up Rings 1 1/16" x 1 1/4" x 3/32" 8-121	PUR-TOBU000-121
9	1	O-Ring 1 1/8" x 1 5/16" x 3/32" 2-122	PUR-TORV000-122
10	1	O-Ring 1/4" x 3/8" x 1/16" 2-010	PUR-TORV000-010
11	1	Steel Ball Bearing 7/16"	PUR-TSBC000-028
12	4	Brass Slotted Shear Screws 10-32 x 7/16"	PUR-TBSS121-028
13	1	Steel Allen Lock Screw 7/16-20 x 7/32"	PUR-THLS281-014
14	1	Rupture Disc (range of pressures available)	TT0710-168B-XXX

Tool Name: 1.813 in. Dual Circulation Sub

Product Code: TT0710-181B **Tool OD:** 1.813 in. **Tool ID:** 0.375 in.

Material: AISI 4140 HT **Tool Length:** 11.8 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The fillet on the Top Sub near the Stub Acme pin connection, 47,600 lbs.

Burst Point and Burst Pressure: The O-ring bore of the Bottom Sub, 35,100 psi.

Torsional Weak Point and Ft-Lbs to Yield: 1,010 ft-lbs as a function of torsional yield of the Stub Acme box connection of the Bottom Sub.

Recommended Make Up Torque:

1st Connection: The Top Sub - Bottom Sub Stub Acme connection – 250 ft-lbs.

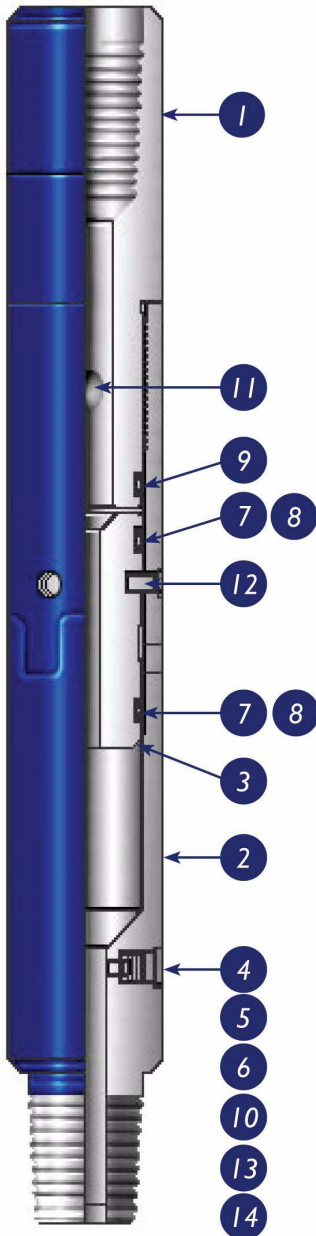
Miscellaneous Information:

Shear Value of Brass Shear Screws: 750 psi (+/- 15%) per Shear Screw.

Steel Ball Bearing for Tool: 7/16 in.

Dual Circulation Sub

TT0710-206B BOM, Schematic and Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0710-206B-001
2	1	Body	TT0710-206B-002
3	1	Piston	TT0710-225A-003
4	2	Disc Plates	TT0710-168B-004
5	1	Plug Disc	TT0710-168B-005
6	1	Plug Cap	TT0710-168B-006
7	3	O-Ring 1 5/16" x 1 9/16" x 1/8" 2-219	PUR-TORV000-219
8	6	Back-Up Rings 1 5/16" x 1 9/16" x 1/8" 8-219	PUR-TOBU000-219
9	-	NA	-
10	1	O-Ring 1/4" x 3/8" x 1/16" 2-010	PUR-TORV000-010
11	1	Steel Ball Bearing 1/2"	PUR-TSBC000-032
12	6	Brass Slotted Shear Screws 1/4-20 x 7/16"	PUR-TBSS160-028
13	1	Steel Allen Lock Screw 7/16-20 x 7/32"	PUR-THLS281-014
14	1	Rupture Disc (range of pressures available)	TT0710-168B-XXX

Tool Name: 2.063 in. Dual Circulation Sub

Product Code: TT0710-206B **Tool OD:** 2.063 in. **Tool ID:** 0.438 in.

Material: AISI 4140 HT 285-341 Bhn **Tool Length:** 14.8 in. w/1-1/2 in. MT

Minimum Yield: 100,000 psi.

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: 67,828 lbs. Yield at Top Sub and Body Connection when tightened to 298 ft/lbs.

Burst Point and Burst Pressure: 23,076 psi at the body between Top Sub and piston.

Torsional Weak Point and Ft-Lbs to Yield: 1,190 ft-lbs at connection between Top Sub and body.

Recommended Make Up Torque:

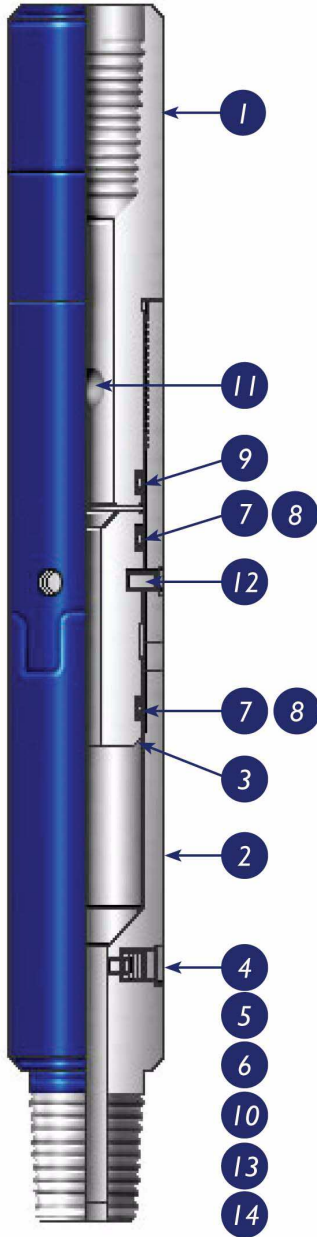
1st Connection: Top Sub and Body - 298 ft-lbs.

Miscellaneous Information:

Shear Value of Brass Shear Screws: 680 psi (plus or minus 15%) per Shear Screw

Steel Ball Bearing for Tool: .500 in.

TT0710-213B BOM, Schematic and Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0710-213A-001
2	1	Bottom Sub	TT0710-213B-002
3	1	Piston	TT0710-225B-003
4	2	Disc Plates	TT0710-168B-004
5	1	Plug Disc	TT0710-168B-005
6	1	Plug Cap	TT0710-168B-006
7	3	O-Ring 1 5/16" x 1 9/16" x 1/8" 2-219	PUR-TORV000-219
8	6	Back-Up Rings 1 5/16" x 1 9/16" x 1/8" 8-219	PUR-TOBU000-219
9			-
10	1	O-Ring 1/4" x 3/8" x 1/16" 2-010	PUR-TORV000-010
11	1	Steel Ball Bearing 1/2"	PUR-TSBC000-032
12	6	Brass Slotted Shear Screws 1/4-20 x 7/16"	PUR-TBSS160-028
13	1	Steel Allen Lock Screw 7/16-20 X 7/32"	PUR-THLS281-014
14	1	Rupture Disc (range of pressures available)	TT0710-168B-XXX

Tool Name: 2.125 in. Dual Circulation Sub

Product Code: TT0710-213B **Tool OD:** 2.125 in. **Tool ID:** 0.438 in.

Material: AISI 4140 HT **Tool Length:** 14.8 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The fillet on the Top Sub near the Stub Acme pin connection, 62,400 lbs.

Burst Point and Burst Pressure: The O-ring bore of the Bottom Sub, 25,800 psi.

Torsional Weak Point and Ft-Lbs to Yield: 1,490 ft-lbs as a function of torsional yield of the Stub Acme box connection of the Bottom Sub.

Recommended Make Up Torque:

1st Connection: The Top Sub - Bottom Sub Stub Acme connection - 370 ft-lbs.

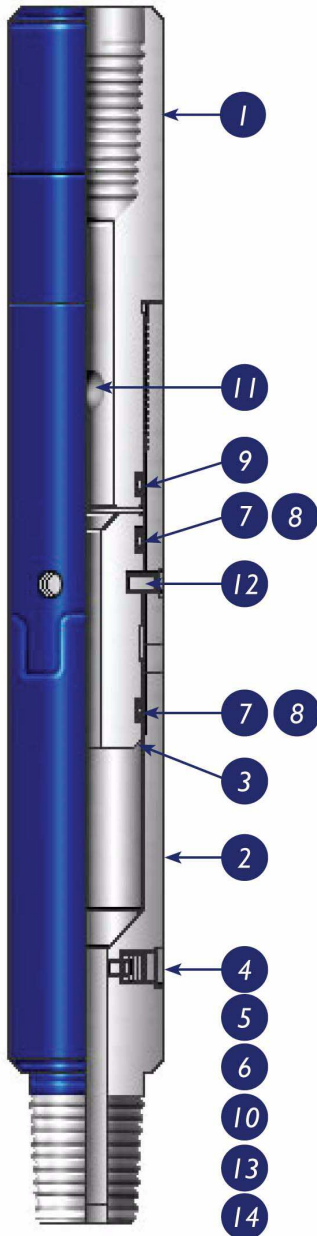
Miscellaneous Information:

Shear Value of Brass Shear Screws: 680 psi (plus or minus 15%) per Shear Screw

Steel Ball Bearing for Tool: .500 in.

Dual Circulation Sub

TT0710-225B BOM, Schematic and Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0710-225B-001
2	1	Bottom Sub	TT0710-225B-002
3	1	Piston	TT0710-225B-003
4	2	Disc Plates	TT0710-168B-004
5	1	Plug Disc	TT0710-168B-005
6	1	Plug Cap	TT0710-168B-006
7	3	O-Ring 1 5/16" x 1 9/16" x 1/8" 2-219	PUR-TORV000-219
8	6	Back-Up Rings 1 5/16" x 1 9/16" x 1/8" 8-219	PUR-TOBU000-219
9			-
10	1	O-Ring 1/4" x 3/8" x 1/16" 2-010	PUR-TORV000-010
11	1	Steel Ball Bearing 1/2"	PUR-TSBC000-032
12	6	Brass Slotted Shear Screws 1/4-20 x 7/16"	PUR-TBSS160-028
13	1	Steel Allen Lock Screw 7/16-20 x 7/32"	PUR-THLS281-014
14	1	Rupture Disc (range of pressures available)	TT0710-168B-XXX

Tool Name: 2.250 in. Dual Circulation Sub

Product Code: TT0710-225B **Tool OD:** 2.250 in. **Tool ID:** 0.438 in.

Material: AISI 4140 HT

Tool Length: 14.8 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool

Minimum Yield Point and Load to Yield: The fillet on the Top Sub near the Stub Acme pin connection, 62,000 lbs.

Burst Point and Burst Pressure: The O-ring bore of the Bottom Sub, 31,100 psi.

Torsional Weak Point and Ft-Lbs to Yield: 2,050 ft-lbs as a function of torsional yield of the Stub Acme pin connection of the Top Sub.

Recommended Make Up Torque:

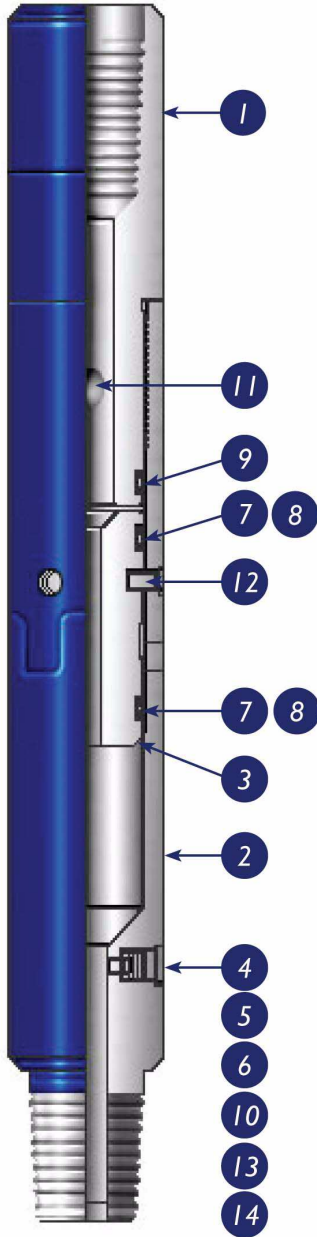
1st Connection: The Top Sub - Bottom Sub Stub Acme connection - 510 ft-lbs.

Miscellaneous Information:

Shear Value of Brass Shear Screws: 680 psi (plus or minus 15%) per Shear Screw

Steel Ball Bearing for Tool: .500 in. Steel Ball Bearing

TT0710-238B BOM, Schematic and Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0710-238B-001
2	1	Bottom Sub	TT0710-238B-002
3	1	Piston	TT0710-225B-003
4	2	Disc Plates	TT0710-168B-004
5	1	Plug Disc	TT0710-168B-005
6	1	Plug Cap	TT0710-168B-006
7	3	O-Ring 1 5/16" x 1 9/16" x 1/8" 2-219	PUR-TORV000-219
8	6	Back-Up Rings 1 5/16" x 1 9/16" x 1/8" 8-219	PUR-TOBU000-219
9	-	NA	-
10	1	O-Ring 1/4" x 3/8" x 1/16" 2-010	PUR-TORV000-010
11	1	Steel Ball Bearing 1/2"	PUR-TSBC000-032
12	6	Brass Slotted Shear Screws 1/4-20 x 7/16"	PUR-TBSS160-028
13	1	Steel Allen Lock Screw 7/16-20 x 7/32"	PUR-THLS281-014
14	1	Rupture Disc (range of pressures available)	TT0710-168B-XXX

Tool Name: 2.375 in. Dual Circulation Sub

Product Code: TT0710-238B **Tool OD:** 2.375 in. **Tool ID:** 0.438 in.

Material: AISI 4140 HT

Tool Length: 15.3 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The fillet on the Top Sub near the Stub Acme pin connection, 59,500 lbs.

Burst Point and Burst Pressure: The O-ring bore of the Bottom Sub, 35,900 psi.

Torsional Weak Point and Ft-Lbs to Yield: 2,080 ft-lbs as a function of torsional yield of the Stub Acme pin connection of the Top Sub.

Recommended Make Up Torque:

1st Connection: The Top Sub - Bottom Sub Stub Acme connection - 520 ft-lbs.

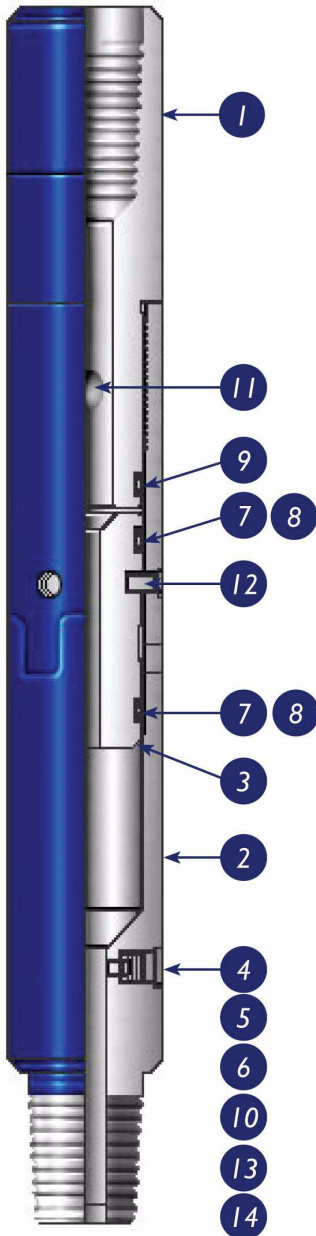
Miscellaneous Information:

Shear Value of Brass Shear Screws: 680 psi (plus or minus 15%) per shear Screw

Steel Ball Bearing for Tool: .500 in. Steel Ball Bearing

Dual Circulation Sub

TT0710-288B BOM, Schematic and Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0710-288B-001
2	1	Bottom Sub	TT0710-288B-002
3	1	Piston	TT0710-288B-003
4	2	Rupture Disc Plate	TT0710-288B-004
5	1	Blanking Plug	TT0710-288B-005
6	1	Cap Plug	TT0710-288B-006
7	3	O-Rings 1 3/4" x 2" x 1/8" 2-224	PUR-TORV000-224
8	4	Back-Up Rings 1 3/4" x 2" x 1/8" 8-224	PUR-TOBU000-224
9	-	NA	-
10	1	O-Ring 3/4" x 5/16" x 3/32" 2-116	PUR-TORV000-116
11	1	Steel Ball Bearing 5/8"	PUR-TSBC000-040
12	4	Brass Slotted Shear Screws 5/16-18 x 5/8"	PUR-TBSS200-040
13	1	Steel Allen Lock Screw 1-14 x 1/2"	PUR-THLS642-032
14	1	Rupture Disc (range of pressures available)	TT0710-288B-XXX

Tool Name: 2.875 in. Dual Circulation Sub

Product Code: TT0710-288B **Tool OD:** 2.875 in. **Tool ID:** 0.563 in.

Material: AISI 4140 HT **Tool Length:** 16.6 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The fillet on the Top Sub near the Stub Acme pin connection, 104,000 lbs.

Burst Point and Burst Pressure: The O-ring bore of the Bottom Sub, 31,800 psi.

Torsional Weak Point and Ft-Lbs to Yield: 4,110 ft-lbs as a function of torsional yield of the Stub Acme box connection of the Bottom Sub.

Recommended Make Up Torque:

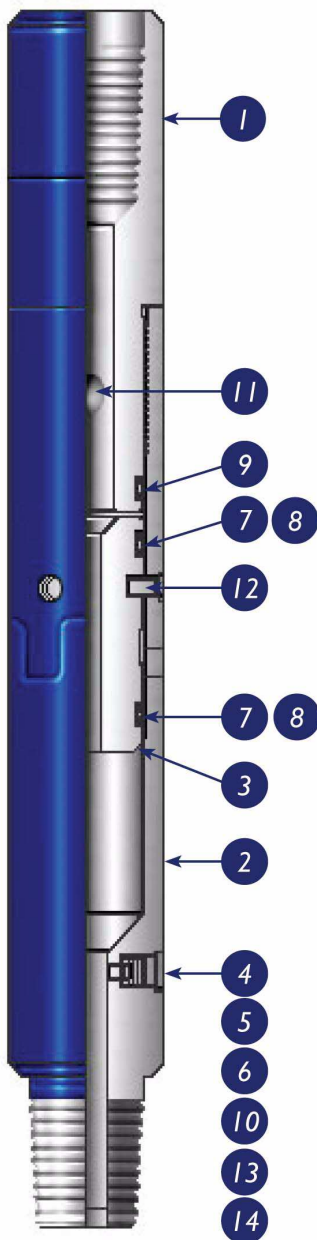
1st Connection: The Top Sub - Bottom Sub Stub Acme connection -1,020 ft-lbs.

Miscellaneous Information

Shear Value of Brass Shear Screws: 715 psi (+/- 15%) per Shear Screw.

Steel Ball Bearing for Tool: .625 in.

TT0710-313B BOM, Schematic and Specs



ITEM	QTY	TOOL PARTS DESCRIPTION	PART NUMBER
1	1	Top Sub	TT0710-313B-001
2	1	Bottom Sub	TT0710-313B-002
3	1	Piston	TT0710-288B-003
4	2	Rupture Disc Plates	TT0710-288B-004
5	1	Blanking Plug	TT0710-288B-005
6	1	Cap Plug	TT0710-288B-006
7	3	O-Rings 1 3/4" x 2" x 1/8" 2-224	PUR-TORV000-224
8	4	Back-Up Rings 1 3/4" x 2" x 1/8" 8-224	PUR-TOBU000-224
9	-	NA	-
10	1	O-Ring 3/4" x 5/16" x 3/32" 2-116	PUR-TORV000-116
11	1	Steel Ball Bearing 5/8"	PUR-TSBC000-040
12	4	Brass Slotted Shear Screws 5/16-18 x 5/8"	PUR-TBSS200-040
13	1	Steel Allen Lock Screw 1-14 x 1/2"	PUR-THLS642-032
14	1	Rupture Disc (range of pressures available)	TT0710-288B-XXX

Tool Name: 3.125 in. Dual Circulation Sub

Product Code: TT0710-313B **Tool OD:** 3.125 in. **Tool ID:** 0.563 in.

Material: AISI 4140 HT **Tool Length:** 18.0 in.

Minimum Yield: 100,000 psi

Strength Properties of Tool:

Minimum Yield Point and Load to Yield: The fillet on the Top Sub near the Stub Acme pin connection, 116,000 lbs.

Burst Point and Burst Pressure: The O-ring bore of the Bottom Sub, 39,100 psi.

Torsional Weak Point and Ft-Lbs to Yield: 5,670 ft-lbs as a function of torsional yield of the Stub Acme box connection of the Bottom Sub.

Recommended Make Up Torque:

1st Connection: The Top Sub - Bottom Sub Stub Acme connection -1,410 ft-lbs.

Miscellaneous Information:

Shear Value of Brass Shear Screws: 715 psi (+/- 15%) per Shear Screw.

Steel Ball Bearing for Tool: .625 in.

Dual Circulation Sub

1.0 Pre-Assembly



Warning: *Make sure all tool parts and components have been thoroughly cleaned or serious damage and/or injury could occur!*



Note: *Verify that the correct O-ring redress kit and quantities are used as specified on the Bill Of Materials (for example, 5 each etc....). Lay out all redress kit components on a clean surface.*



Note: *Make sure to lubricate all O-rings and threaded surfaces.*



Note: *Visually inspect all parts for damage or wear. Thread parts together without the O-rings to check fit. Repair or replace damaged parts.*



Caution: *Always file wrench marks or burrs and clean off debris!*

2.0 Assembly

2.1 Install all O-rings and Backup rings. When using Backup rings, the order is; Backup, O-ring, Backup.



Note: *Some sizes of Dual Circulating Subs do not use Backup rings on the Top Sub.*

2.2 Grease the entire ID of the Bottom Sub (item # 2) and then put it in a vise between the Rupture Disc hole and the ported holes.



Caution: *Do not vise on the holes, as this can damage the tool!*

2.3 Grease the ID and OD of the Piston (item #3) and then insert it into the Bottom Sub, flared end first. Tap it into the sub, until the deepest groove in the Piston aligns with the Shear Screw holes in the Bottom Sub. According to your shear values, insert the appropriate number of Shear Screws into the holes.

Dual Circulation Subs

2.4 Grease the ID and pin threads of the Top Sub (item #1) and screw into the Bottom Sub wrench tight.

2.5 There are two configurations for the tapped port on the Bottom Sub, based upon downhole or transportation/blanking use.

- **Downhole Configuration with Rupture Disc-** The following items should be inserted into the port in this order; Disc Plate, Rupture Disc, Disc Plate, Steel Allen Lock Screw. Refer to the tables below for disc pressure ranges.

RUPTURE DISC FOR TOOLS 1.69" OD THRU 2.375" OD	
TT0710-168B-009	RUPTURE DISC 2,000 PSI
TT0710-168B-010	RUPTURE DISC 3,000 PSI
TT0710-168B-011	RUPTURE DISC 3,880-4,240 PSI
TT0710-168B-012	RUPTURE DISC 5,200 PSI
TT0710-168B-013	RUPTURE DISC 6,250 PSI
TT0710-168B-014	RUPTURE DISC 7,000 PSI
TT0710-168B-015	RUPTURE DISC 8,000 PSI
TT0710-168B-017	RUPTURE DISC 10,000 PSI
TT0710-168B-018	RUPTURE DISC 11,000 PSI
TT0710-168B-019	RUPTURE DISC 12,000 PSI

RUPTURE DISC FOR TOOLS 2.88" OD THRU 3.125" OD	
TT0710-288B-009	RUPTURE DISC 2,000 PSI
TT0710-288B-010	RUPTURE DISC 3,000 PSI
TT0710-288B-011	RUPTURE DISC 4,000 PSI
TT0710-288B-012	RUPTURE DISC 5,200 PSI
TT0710-288B-013	RUPTURE DISC 6,000 PSI
TT0710-288B-014	RUPTURE DISC 7,000 PSI
TT0710-288B-015	RUPTURE DISC 8,000 PSI

- **Transportation/Blanking Configuration-** The following items should be inserted into the port in this order; O-ring, Plug Cap (greased), Plug Disc, Steel Allen Lock Screw.

3.0 Disassembly

3.1 Place the tool in a vise on the Top Sub (item #1), with the Steel Allen Lock Screw facing up. Loosen and remove the allen screw.

3.2 Loosen the vise and rotate the tool 180°, then tighten the vise. Using a rubber mallet, tap the end of the tool until the plates and disc fall out. Discard used Rupture Disc.

3.3 Remove the Shear Screws and discard.

3.4 Remove the Bottom Sub (item #2) and then drop it on a wood block to remove the Piston (item #3).

3.5 Finally, remove the Top Sub, clean and inspect all parts.



Note: Remove and discard all O-rings. Replace O-rings after each use. Thoroughly clean tool parts in a cleaner approved by state and/or local laws.



Note: Visually inspect tool for swelling after each use. Damaged or swelled components must be replaced.



Note: It is recommended that a Magnetic Particle Inspection (MPI) be completed on all components after each job.

Dual Circulation Subs
