

The Differential Sub has two opposing ceramic domes and is designed to withstand maximum pressure from above or below the ceramic domes. It can be used for overbalanced or underbalanced perforating.

The Differential Plug is a tool which may be run in a TCP string to maintain a high differential pressure in favor of either the annulus (underbalance), or the tubing (overbalance) while keeping fluid from entering the tubing prior to gun detonation. This tool features dual convex ceramic domes which can withstand high differential pressures.

A Drop Bar is released from surface to strike the Mechanical (Percussion) Firing Head. It also impacts the Differential plug causing the ceramic domes to shatter. At the instant the domes have fragmented, a passage is created for reservoir fluids to surge into the dry tubing after the guns fire.

ADVANTAGES:

- The unique convex ceramic dome allows the tool to withstand a high differential pressure.
- High strength and more consistent properties of ceramic allow a thinner cross-section of the dome, ensuring better shattering properties than glass.

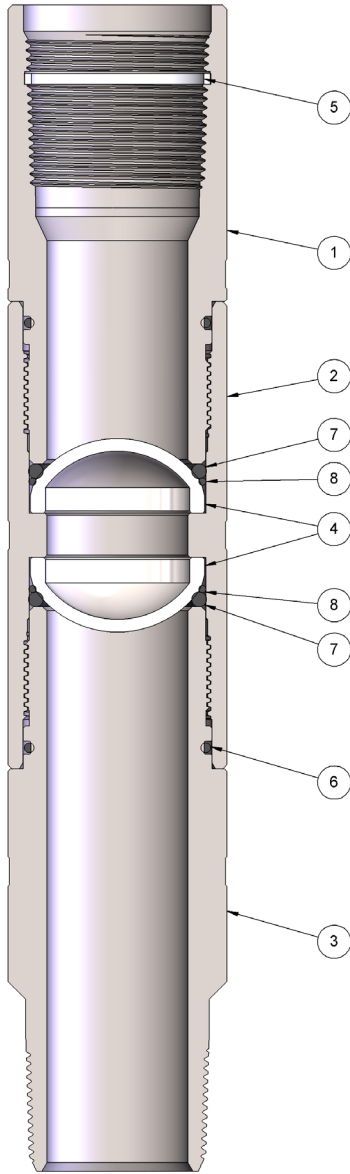
SPECIFICATIONS:

	2-3/8 IN (60.3 MM)		2-7/8 IN (73.0 MM)		3-1/2 IN (88.9 MM)	
Maximum OD	3.093 in	78.6 mm	3.699 in	94.0 mm	4.531 in	115.1 mm
Minimum ID	1.995 in	50.6 mm	2.441 in	62.0 mm	3.070 in	78.0 mm
Overall Length	16.5 in	419 mm	16.8 in	427 mm	17.9 in	455 mm
Max Pressure	10,000 psi (68.9 Mpa)					
Max Temperature ¹	250°F (121°C)					
Tensile	135,000 lb	60 048 daN	198,000 lb	88 070 daN	208,800 lb	92 878 daN
Connection	2-3/8 in (60.3 mm) EUE		2-7/8 in (73.0 mm) EUE		3-1/2 in (88.9 mm) EUE	
Product: Non-Ported	TC-082-2375-000		TC-082-2875-000		TC-082-3500-000	
Redress Kit	TC-082-2375-099		TC-082-2875-099		TC-082-3500-099	

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

TECHNICAL INFORMATION:

Differential Plug



ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-082-2875-000	--	Differential Plug, 2-7/8" EU
1	TC-082-0001-000	1	Top Sub Crossover, 2-7/8" EU
2	TC-082-0002-000	1	Coupling Sub, 2-7/8" EU
3	TC-080-0001-000	1	Bottom Sub, 2-7/8" EU
4	TC-081-0005-000	2	Ceramic Dome, 2-7/8" Tool
5	MI-305-2875-000	1	2-7/8" EU Thread API Seal Ring
6	OOO-N569-234	2	O-Ring, 90 Durometer Nitrile
7	OOO-N569-334	2	O-Ring, 90 Durometer Nitrile
8	OOO-N569-232	2	O-Ring, 90 Durometer Nitrile
--	MAN-TC-082	--	Assembly Manual
--	TC-082-2875-099	--	Redress Kit, 2-7/8" Tool

ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-082-3500-000	--	Differential Plug, 3-1/2" EU
1	TC-082-0004-000	1	Top Sub Crossover, 3-1/2" EU
2	TC-082-0005-000	1	Coupling Sub, 3-1/2" EU
3	TC-080-0002-000	1	Bottom Sub, 3-1/2" EU
4	TC-081-0008-000	2	Ceramic Dome, 3-1/2" Tool
5	MI-305-3500-000	1	3-1/2" EU Thread API Seal Ring
6	OOO-N569-339	2	O-Ring, 90 Durometer Nitrile
7	OOO-N569-240	2	O-Ring, 90 Durometer Nitrile
8	OOO-N569-237	2	O-Ring, 90 Durometer Nitrile
--	MAN-TC-082	--	Assembly Manual
--	TC-082-3500-099	--	Redress Kit, 3-1/2" Tool

ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-082-2375-099	--	Redress Kit, Differential Plug, 2-3/8" EU
4	TC-081-0002-000	2	Ceramic Dome, 2-3/8" Tool
5	MI-305-2375-000	1	2-3/8" EU Thread API Seal Ring
6	OOO-N569-229	2	O-Ring, 90 Durometer Nitrile
7	OOO-N569-330	2	O-Ring, 90 Durometer Nitrile
8	OOO-N569-141	2	O-Ring, 90 Durometer Nitrile

ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-082-2875-099	--	Redress Kit, Differential Plug, 2-7/8" EU
3	TC-081-0005-000	2	Ceramic Dome, 2-7/8" Tool
4	MI-305-2875-000	1	2-7/8" EU Thread API Seal Ring
5	OOO-N569-234	2	O-Ring, 90 Durometer Nitrile
6	OOO-N569-334	2	O-Ring, 90 Durometer Nitrile
7	OOO-N569-232	2	O-Ring, 90 Durometer Nitrile

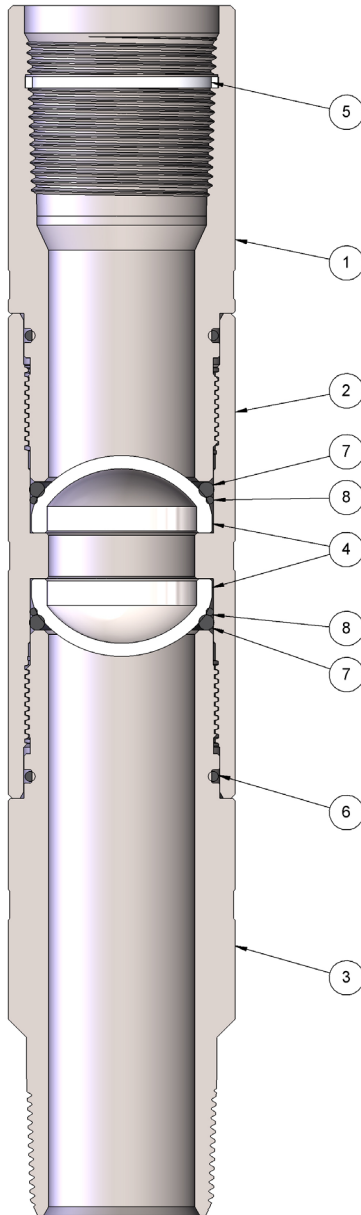
ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-082-3500-099	--	Redress Kit, Differential Plug, 3-1/2" EU
3	TC-081-0008-000	2	Ceramic Dome, 3-1/2" Tool
4	MI-305-3500-000	1	3-1/2" EU Thread API Seal Ring
5	OOO-N569-240	2	O-Ring, 90 Durometer Nitrile
6	OOO-N569-339	2	O-Ring, 90 Durometer Nitrile
7	OOO-N569-237	2	O-Ring, 90 Durometer Nitrile

ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-082-2375-000	--	Differential Plug, 2-3/8" EU
1	TC-082-0011-000	1	Top Sub Crossover, 2-3/8" EU
2	TC-082-0010-000	1	Coupling Sub, 2-3/8" EU
3	TC-080-0000-000	1	Bottom Sub, 2-3/8" EU
4	TC-081-0002-000	2	Ceramic Dome, 2-3/8" Tool
5	MI-305-2375-000	1	2-3/8" EU Thread API Seal Ring
6	OOO-N569-229	2	O-Ring, 90 Durometer Nitrile
7	OOO-N569-330	2	O-Ring, 90 Durometer Nitrile
8	OOO-N569-141	2	O-Ring, 90 Durometer Nitrile
--	MAN-TC-082	--	Assembly Manual
--	TC-082-2375-099	--	Redress Kit, 2-3/8" Tool

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TECHNICAL INFORMATION:

Differential Plug L-80



ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-082-2375-080	--	Differential Plug, 2-3/8" EU (L80)
1	TC-082-0011-080	1	Top Sub Crossover, 2-3/8" EU (L80)
2	TC-082-0010-080	1	Coupling Sub, 2-3/8" EU (L80)
3	TC-080-0000-080	1	Bottom Sub, 2-3/8" EU (L80)
4	TC-081-0002-000	2	Ceramic Dome, 2-3/8" Tool
5	MI-305-2375-000	1	2-3/8" EU Thread API Seal Ring
6	OOO-V569-229	2	O-Ring, 90 Durometer Viton
7	OOO-V569-330	2	O-Ring, 90 Durometer Viton
8	OOO-V569-141	2	O-Ring, 90 Durometer Viton
--	MAN-TC-082	--	Assembly Manual
--	TC-082-2375-098	--	Redress Kit, Viton, 2-3/8" Tool

ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-082-2875-080	--	Differential Plug, 2-7/8" EU (L80)
1	TC-082-0002-080	1	Top Sub Crossover, 2-7/8" EU (L80)
2	TC-082-0002-080	1	Coupling Sub, 2-7/8" EU (L80)
3	TC-080-0001-080	1	Bottom Sub, 2-7/8" EU (L80)
4	TC-081-0005-000	2	Ceramic Dome, 2-7/8" Tool
5	MI-305-2875-000	1	2-7/8" EU Thread API Seal Ring
6	OOO-V569-234	2	O-Ring, 90 Durometer Viton
7	OOO-V569-334	2	O-Ring, 90 Durometer Viton
8	OOO-V569-232	2	O-Ring, 90 Durometer Viton
--	MAN-TC-082	--	Assembly Manual
--	TC-082-2875-098	--	Redress Kit, Viton, 2-7/8" Tool

ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-082-3500-080	--	Differential Plug, 3-1/2" EU (L80)
1	TC-082-0004-080	1	Top Sub Crossover, 3-1/2" EU (L80)
2	TC-082-0005-080	1	Coupling Sub, 3-1/2" EU (L80)
3	TC-080-0002-080	1	Bottom Sub, 3-1/2" EU (L80)
4	TC-081-0008-000	2	Ceramic Dome, 3-1/2" Tool
5	MI-305-3500-000	1	3-1/2" EU Thread API Seal Ring
6	OOO-V569-339	2	O-Ring, 90 Durometer Viton
7	OOO-V569-240	2	O-Ring, 90 Durometer Viton
8	OOO-V569-237	2	O-Ring, 90 Durometer Viton
--	MAN-TC-082	--	Assembly Manual
--	TC-082-3500-098	--	Redress Kit, Viton, 3-1/2" Tool

ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-082-2375-098	--	Redress Kit, Viton, Differential Plug, 2-3/8" EU
4	TC-081-0002-000	2	Ceramic Dome, 2-3/8" Tool
5	MI-305-2375-000	1	2-3/8" EU Thread API Seal Ring
6	OOO-V569-229	2	O-Ring, 90 Durometer Viton
7	OOO-V569-330	2	O-Ring, 90 Durometer Viton
8	OOO-V569-141	2	O-Ring, 90 Durometer Viton

ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-082-2875-098	--	Redress Kit, Viton, Differential Plug, 2-7/8" EU
4	TC-081-0005-000	2	Ceramic Dome, 2-7/8" Tool
5	MI-305-2875-000	1	2-7/8" EU Thread API Seal Ring
6	OOO-V569-234	2	O-Ring, 90 Durometer Viton
7	OOO-V569-334	2	O-Ring, 90 Durometer Viton
8	OOO-V569-232	2	O-Ring, 90 Durometer Viton

ITEM	PART NUMBER	QTY	DESCRIPTION
--	TC-082-3500-098	--	Redress Kit, Viton, Differential Plug, 3-1/2" EU
4	TC-081-0008-000	2	Ceramic Dome, 3-1/2" Tool
5	MI-305-3500-000	1	3-1/2" EU Thread API Seal Ring
6	OOO-V569-240	2	O-Ring, 90 Durometer Viton
7	OOO-V569-339	2	O-Ring, 90 Durometer Viton
8	OOO-V569-237	2	O-Ring, 90 Durometer Viton