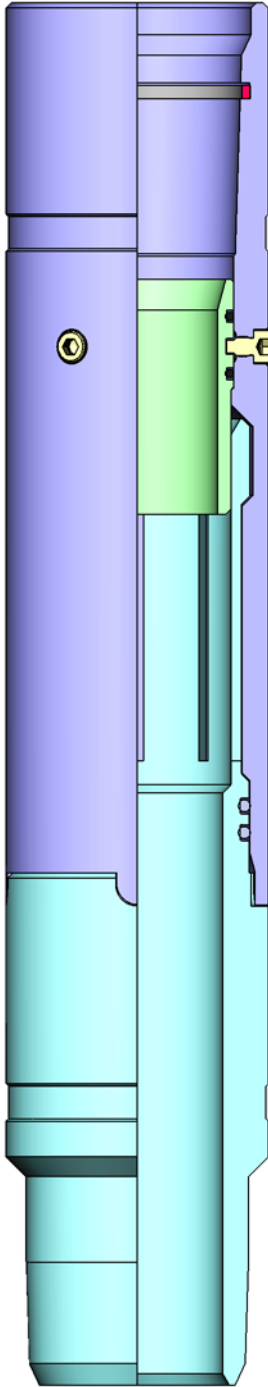


Description

The Mechanical Gun Release, Shift Up is a medium duty separation tool for TCP operations where it is desirable to drop the discharged gun system. The guns may be released using the Model B Shifting tool.



The Collet fingers of the Collet Sub snap into an internal retaining groove in the Top Sub. A Shifting Sleeve, held in place by Shear Screws, locks the fingers in the groove. The Model B Shifting Tool is positioned below the Shifting Sleeve with positive keys and jarred up to release the guns. The Shifting Sleeve is then pulled up against the tubing pin and jarred again to collapse the Shifting Tool keys. The Shifting Sleeve remains in the Top Sub of the Gun Release, therefore the restriction is equal to the Sleeve ID. The TC-062 Mechanical Gun Release Fullbore Shift Up should be considered in situations where no tubing restriction is permitted.

Features and Benefits

- The shift up feature ensures that shifting tools are retracted into a safe position when the guns disengage from the tubing and allows higher jarring forces particularly in deviated wellbores
- This Gun Release is fully sealed which allows pressure testing of the tubing string prior to shifting
- The Top Sub acts as a wireline re-entry guide
- The Shifting Sleeve may be engaged with the Model B shifting tool with positive keys
- For drop bar applications we recommend spacing this tool one full tubing joint from the Firing Head to ensure the drop bar does not recoil after impact and shift the sleeve
- Integral torque tabs provide the ability to rotate the tubing string

Note: for extreme underbalance perforating, it is recommended running the Surge Tool Ported Underbalance Sub (or other ported Sub) above this tool.

Do not torque through this tool for makeup

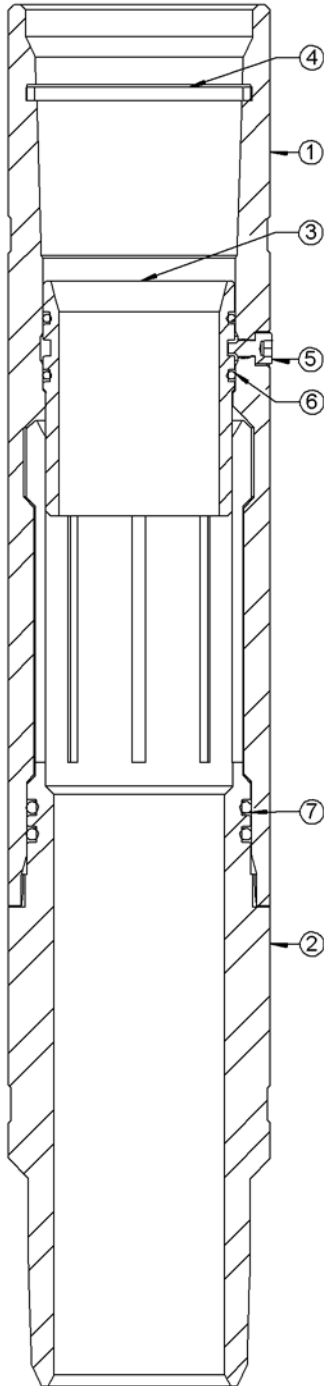
Specifications

	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
Sleeve ID	1.875 in	47.6 mm	2.340 in	59.4 mm	2.750 in	69.9 mm
	1.810 in	46.0 mm	2.310 in	58.7 mm	2.340 in	59.4 mm
	1.781 in	45.2 mm	2.250 in	57.2 mm	2.310 in	58.7 mm
	1.710 in	43.4 mm	2.125 in	54.0 mm		
	1.645 in	41.8 mm	1.875 in	47.6 mm		
Overall Length	16.19 in	411 mm	17.25 in	438 mm	23.00 in	584 mm
Max Pressure	9,130 psi	62 950 KPa	8,830 psi	60 880 KPa	12,000 psi	82 740 KPa
Tensile	55,200 lb	24 550 daN	79,400 lb	35 300 daN	105,900 lb	47 100 daN
Max Torque (P110)	1890 ft-lb	2560 N.m.	2110 ft-lb	2860 N.m.	5940 ft-lb	8050 N.m.
Max Torque (L80)	1440 ft-lb	1950 N.m.	1610 ft-lb	2180 N.m.	4540 ft-lb	6150 N.m.
Max Temp ²	250°F (121°C)					
Screw Shear Force	1500 lbf - 2000 lbf per screw					
Connections	2-3/8 in (60.3 mm) EU Box X Pin		2-7/8 in (73.0 mm) EU Box X Pin		3-1/2 in (88.9 mm) EU Box X Pin	
Product Number ¹	TC-060-2375-XXX ³		TC-060-2875-XXX ³		TC-060-3500-XXX	
Redress Kit	TC-060-2375-099		TC-060-2875-099		TC-060-3500-099	

¹The last three digits of the part number are used to select shifting sleeve size. ie-TC-060-2375-187 is the 1.875" Sleeve.

²The maximum temperature can be increased to 450°F (230°C) by substituting the 90 durometer Nitrile O-rings with 90 durometer Viton O-rings.

³Sour Service (L80) versions are available with an L80 Extension (TC-060-2375-187-L80)



Item	Part Number	Qty	Description
--	TC-060-2375-	--	Mechanical Gun Release Shift Up 2-3/8" EU
1	TC-060-0000-110	↑ 1	Top Sub 2-3/8" EU (P110)
2	TC-060-0001-000	1	Collet Sub 2-3/8" EU
3	TC-060-0002-164	164	Shifting Sleeve 1.645" ID
3	TC-060-0002-171	171	Shifting Sleeve 1.710" ID
3	TC-060-0002-178	178	Shifting Sleeve 1.781" ID
3	TC-060-0002-181	181	Shifting Sleeve 1.810" ID
3	TC-060-0002-187	187	Shifting Sleeve 1.875" ID
4	MI-305-2375-000	1	2-3/8" EU Thread API Seal Ring
5	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 LG.
6	OOO-N569-137	2	O-Ring 90 Durometer Nitrile
7	OOO-N569-229	2	O-Ring 90 Durometer Nitrile
--	MAN-TC-060	--	Assembly Manual
--	TC-060-2375-099	--	Redress Kit Gun Release Shift Up 2-3/8" EU

The last three digits of the part number are used to select shifting sleeve size. ie-TC-060-2375-187 is the 1.875" Sleeve.

Item	Part Number	Qty	Description
--	TC-060-2875-	--	Mechanical Gun Release Shift Up 2-7/8" EU
1	TC-060-0004-L80	↑ 1	Top Sub 2-7/8" EU (L80)
2	TC-060-0005-000	1	Collet Sub 2-7/8" EU
3	TC-060-0006-164	164	Shifting Sleeve 1.645" ID
3	TC-060-0006-187	187	Shifting Sleeve 1.875" ID
3	TC-060-0006-206	206	Shifting Sleeve 2.062" ID
3	TC-060-0006-212	212	Shifting Sleeve 2.125" ID
3	TC-060-0006-225	225	Shifting Sleeve 2.250" ID
3	TC-060-0006-231	231	Shifting Sleeve 2.310" ID
3	TC-060-0006-234	234	Shifting Sleeve 2.340" ID
4	MI-305-2875-000	1	Seal Ring 2-7/8 EU
5	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 LG.
6	OOO-N569-230	2	O-Ring 90 Durometer Nitrile
7	OOO-N569-234	2	O-Ring 90 Durometer Nitrile
--	MAN-TC-060	--	Assembly Manual
--	TC-060-2875-099	--	Redress Kit Gun Release Shift Up 2-7/8" EU

The last three digits of the part number are used to select shifting sleeve size. ie-TC-060-2875-187 is the 1.875" Sleeve.

Item	Part Number	Qty	Description
--	TC-060-3500-	--	Mechanical Gun Release Shift Up 3-1/2" EU
1	TC-060-0009-000	↑ 1	Top Sub 3-1/2" EU
2	TC-060-0010-000	1	Collet Sub 3-1/2" EU
3	TC-060-0011-231	231	Shifting Sleeve 2.310" ID
3	TC-060-0011-234	234	Shifting Sleeve 2.340" ID
3	TC-060-0011-275	275	Shifting Sleeve 2.750" ID
4	MI-305-3500-000	1	Seal Ring 3-1/2" EU
5	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 LG.
6	OOO-N569-234	2	O-Ring 90 Durometer Nitrile
7	OOO-N569-238	2	O-Ring 90 Durometer Nitrile
--	MAN-TC-060	--	Assembly Manual
--	TC-060-3500-099	--	Redress Kit Gun Release Shift Up 3-1/2" EU

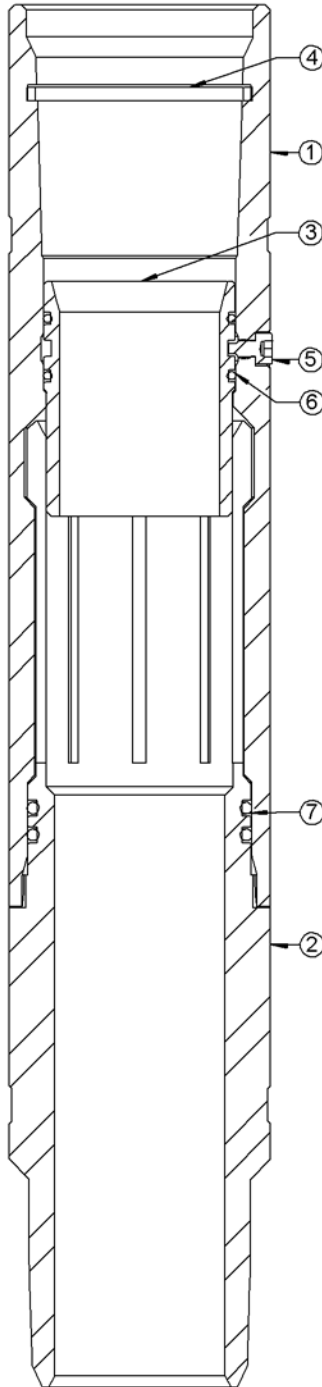
The last three digits of the part number are used to select shifting sleeve size. ie-TC-060-3500-231 is the 2.310" Sleeve.

Item	Part Number	Qty	Description
--	TC-060-2375-099	--	Redress Kit Gun Release Shift Up 2-3/8" EU
4	MI-305-2375-000	1	Seal Ring 2-3/8" EU
5	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 LG.
6	OOO-N569-137	2	O-Ring 90 Durometer Nitrile
7	OOO-N569-229	2	O-Ring 90 Durometer Nitrile

Item	Part Number	Qty	Description
--	TC-060-2875-099	--	Redress Kit Gun Release Shift Up 2-7/8" EU
4	MI-305-2875-000	1	Seal Ring 2-7/8" EU
5	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 LG.
6	OOO-N569-230	2	O-Ring 90 Durometer Nitrile
7	OOO-N569-234	2	O-Ring 90 Durometer Nitrile

Item	Part Number	Qty	Description
--	TC-060-3500-099	--	Redress Kit Gun Release Shift Up 3-1/2" EU
4	MI-305-3500-000	1	Seal Ring 3-1/2" EU
5	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 LG.
6	OOO-N569-234	2	O-Ring 90 Durometer Nitrile
7	OOO-N569-238	2	O-Ring 90 Durometer Nitrile

Mechanical Gun Release, Shift Up



Item	Part Number	Qty	Description
--	TC-060-2375-L80	--	Mechanical Gun Release Shift Up 2-3/8" EU
1	TC-060-0000-080	1	Top Sub 2-3/8" EU (L80)
2	TC-060-0001-000	1	Collet Sub 2-3/8" EU
3	TC-060-0002-164	164	Shifting Sleeve 1.645" ID
3	TC-060-0002-171	171	Shifting Sleeve 1.710" ID
3	TC-060-0002-178	178	Shifting Sleeve 1.781" ID
3	TC-060-0002-181	181	Shifting Sleeve 1.810" ID
3	TC-060-0002-187	187	Shifting Sleeve 1.875" ID
4	MI-305-2375-000	1	2-3/8" seal ring EU thread
5	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 LG.
6	OOO-N569-229	2	O-Ring 90 Durometer Nitrile
7	OOO-N569-137	2	O-Ring 90 Durometer Nitrile
--	MAN-TC-060	--	Assembly Manual
--	TC-060-2375-099	--	Redress Kit Gun Release Shift Up 2-3/8" EU

The last three digits of the part number are used to select shifting sleeve size. ie-TC-060-2375-187-L80 is the 1.875" Sleeve.

Item	Part Number	Qty	Description
--	TC-060-2875-L80	--	Mechanical Gun Release Shift Up 2-7/8" EU
1	TC-060-0004-080	1	Top Sub 2-7/8" EU (L80)
2	TC-060-0005-000	1	Collet Sub 2-7/8" EU
3	TC-060-0006-164	164	Shifting Sleeve 1.645" ID
3	TC-060-0006-187	187	Shifting Sleeve 1.875" ID
3	TC-060-0006-206	206	Shifting Sleeve 2.062" ID
3	TC-060-0006-212	212	Shifting Sleeve 2.125" ID
3	TC-060-0006-225	225	Shifting Sleeve 2.250" ID
3	TC-060-0006-234	234	Shifting Sleeve 2.340" ID
4	MI-305-2875-000	1	2-7/8" EU Thread API Seal Ring
5	SF-050-025F-050S	3	Shear Screw 1/4" - 28 UNF x 0.5 LG.
6	OOO-N569-234	2	O-Ring 90 Durometer Nitrile
7	OOO-N569-229	2	O-Ring 90 Durometer Nitrile
--	MAN-TC-060	--	Assembly Manual
--	TC-060-2875-099	--	Redress Kit Gun Release Shift Up 2-7/8" EU

The last three digits of the part number are used to select shifting sleeve size. ie-TC-060-2875-187-L80 is the 1.875" Sleeve.