

MECHANICAL TUBING RELEASE

SHIFT UP BHA DISCONNECT

INNOVATION REVEALED

The **Mechanical Tubing Release** is used to disconnect the TCP BHA from the work string to allow the BHA to be dropped into the wellbore sump. The tool is shifted up with a Model “B” Shifting Tool fitted with positive or selective keys. Once the BHA releases, a well chamfered guide remains on the work string to act as a wireline re-entry guide.

FEATURES

- Safe, economical, simple and reliable
- The shift up feature ensures that the shifting tool is fully retracted into a safe position when the BHA releases
- The shift up feature also allows for higher jarring forces particularly in deviated wells
- Tool is sealed which allows for pressure testing of the work string, prior to release
- Variety of shifting sleeves available to provide compatibility with work string and landing nipples

OPERATIONS

Run an overshoot and retrieve the TCP drop bar. This will provide the operator with a depth reference and also eliminate the possibility of wedging the shifting tool beside the drop bar. Run into the well with the Model “B” shifting tool, run below the tubing release and pull up until the shifting tool engages into the shifting sleeve. Use several light jarring actions until the BHA has released. Once it has been determined that the BHA has released, go back down to verify.

WARNING: Only qualified personnel should use or assemble Magnum TCP equipment. Use of Magnum TCP equipment in contrary to our specifications may result in property damage, injury or fatality. If you are not trained in the handling and the use of explosive devices, DO NOT attempt to assemble any Magnum Perforating Systems or Magnum Firing Devices.



MECHANICAL TUBING RELEASE

CONTINUED

* Other thread types available upon request

O.D. inch (mm)	SHIFTING SLEEVE I.D. inch (mm)	BOX X PIN CONNECT* inch (mm)	OPERATING RANGE **	MAX WEIGHT LOAD lbs (kgs)	MIN WEIGHT TO RELEASE lbs (kgs)	LENGTH inch (mm)	
3.062 (77.8)	1.781 (45.2)	2-3/8 EUE (60.3)	400°F 15,000 psi (232°C) (103.4MPa)	66,000 (29,937.6)	150 (68.0)	16.625 (412.8)	
	1.875 (47.6)						
3.688 (93.7)	2.125 (54.0)	2-7/8 EUE (73.0)	400°F 12,000 psi (232°C) (82.7MPa)	81,000 (36,741.6)		17.0 (431.8)	
	2.188 (55.6)						
	2.250 (57.2)						
4.500 (114.3)	2.750 (69.9)	3-1/2 EUE (88.9)		138,000 (62,596.8)			20.750 (527.1)

MECHANICAL TUBING RELEASE RECOMMENDED SHIFTING TOOL & KEY NUMBERS

The chart below has been verified with Halliburton Energy Services engineering in Carrollton, Texas. Any perforating specialist running into problems with these tool numbers, or having a tool number that works better, should call for verification of the tool number. This will help us keep the list updated.

*SHIFTING SLEEVE I.D. inch (mm)	TOOL NO.	KEY NO.	MAX EXP. O.D. inch (mm)	MAX EXP. O.D. inch (mm)
1.5 (38.1)	42 B0120	42 B108	1.690 (41.4)	1.410 (35.8)
1.5 (38.1)	42 B0120	42 B443	1.700 (43.2)	1.422 (36.1)
1.625 (41.4)	42 B0121	42 B444	1.897 (48.2)	1.624 (41.2)
1.781 (45.2)	42 B0117	42 B0106	2.076 (52.7)	1.750 (44.5)
1.81 (46.0)	42 B0117	42 B0106	2.078 (52.8)	1.750 (44.5)
1.875 (47.8)	42 B0116	42 B153	2.108 (53.5)	1.750 (44.5)
1.875 (47.8)	42 B0237	42 B681	2.120 (53.8)	1.690 (42.9)
2.125 (54.1)	42 B0110	42 B216	2.670 (67.8)	2.016 (51.2)
2.25 (57.2)	42 B0118	42 B287	2.593 (65.9)	2.156 (54.8)
2.560** (65.0)	42 B0178	42 B453	2.966 (75.3)	2.530 (64.3)
2.75 (69.9)	42 B0146	42 B345-1	3.015 (76.6)	2.718 (69.0)

The highlighted numbers are the basic tools for the most common sizes. There are other tools and part numbers for the various sizes but there are too many to list.

* The ID of the shift-up tubing release remains the same as the internal shifting sleeve size after shifting.

** These key sizes may be difficult to obtain, so check on the availability before running a gun release with a 2.56 internal shifting sleeve.

NOTE: This chart is only meant to be a guide. It is strongly recommended that the shifting tool be tried in the tubing release and passed through the landing nipple before running the equipment in the well. This will ensure that the keys will, in fact, collapse and pass through the smallest restrictions and still engage and shift the internal shifting sleeve. The springs behind the keys should be strong and keep the keys engaged while shifting upward.

MECHANICAL TUBING RELEASE PROCEDURES

1. Run an over shot or pulling tool and retrieve the TCP drop bar.

NOTE: Fishing the drop bar is optional; however, fishing the drop bar will provide the operator with an exact depth reference. It will also eliminate the possibility of wedging the shifting tool beside the drop bar, if it is necessary to jar down to help release the bottom hole assembly.

2. Run in hole with the shifting tool and key for the ID size of the mechanical tubing release internal shifting sleeve.

3. Run the shifting tool through the tubing release and pick up to engage the internal shifting sleeve.

4. Jar up to shift the internal shifting sleeve. Several light jarring hits are better than a hard jarring action. The hard jarring action can result in the shear pin shearing before the internal shifting sleeve shifts.

NOTE: Steel shear pins should be run in the place of a brass shear pin.

5. After jarring up on the internal shifting sleeve several times, go back down to verify that the tubing release has disengaged. When it has been determined that the mechanical tubing release has released the operator can now shear the shear pin in the shifting tool.

NOTE: The keys should lock into the internal shifting sleeve. The tools cannot be removed without shearing the pin.

6. If the bottom hole assembly has not released, jar down sharply on it to help it release. If the bottom hole assembly remains intact, repeat steps 5 thru 6 until the assembly releases.

