

QUANTUM Long-Stroke Safety Shear Sub

Used in sand-control, production, and ESP completions

APPLICATIONS

- Sand control completions
- Production completions
- Stacked single-packer completions
- Dual or stacked dual completions
- ESP completions

BENEFITS

- Simple design facilitates efficient workover operations
- Fishing neck has sufficient length for overshot

FEATURES

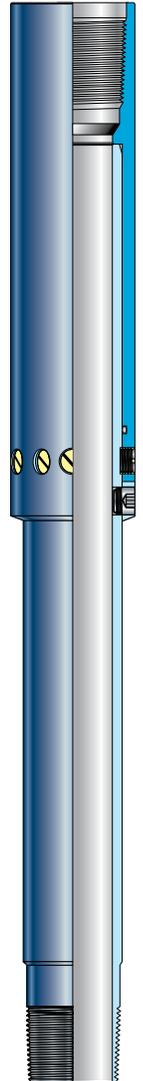
- Field-adjustable shear values
- Rotationally locked
- Sizes range from 5-in to 10¾-in casing

The QUANTUM* gravel-pack packer long-stroke safety shear sub consists of an overshot connected to a slick joint with shear pins. In the event the completion assembly must be retrieved and the packer or seal assembly does not release, the safety shear sub provides a weak point in the tubing string. By parting at the shear pins, the completion assembly above the shear joint can be retrieved and a workstring with drilling jars can be used to release and retrieve the packer or seal assembly.

The sub is normally placed several joints above the packer or between stacked packers in a multizone installation. This allows independent removal of the packer assemblies. Once pulled apart, a slick sub with a known internal and external diameter extends upward for a tubing spear or overshot connection. The length of the slick sub is sufficient to allow overshot engagement.

The QUANTUM safety shear sub is rotationally locked, and the shear-out force can be varied up to 90,000 lbf [40,815 kg] using standard brass screws. It easily converts to a connector sub for horizontal makeup by replacing the brass shear screws with hardened-steel screws.

The QUANTUM long-stroke safety shear sub is manufactured from standard AISI 4140 low-alloy steel or premium materials for severe service environments.



QUANTUM safety shear sub.

QUANTUM Long-Stroke Safety Shear Sub Specifications

Casing Size, [†] in [mm]	Max. OD, in [mm]	Min. ID, in [mm]	Burst, [‡] psi [kPa]	Collapse, [‡] psi [kPa]
5.000 [127.0]	3.660 [93.0]	1.960 [49.8]	13,700 [94,462]	14,000 [96,530]
5.000 [127.0]	3.660 [93.0]	2.370 [60.2]	10,000 [68,950]	11,300 [77,914]
5.500 [139.7]	4.180 [106.2]	1.990 [50.5]	13,700 [94,462]	14,000 [96,530]
5.500 [139.7]	4.180 [106.2]	2.410 [61.2]	10,000 [68,950]	11,300 [77,914]
6.625, 7.000, and 7.625 [168.3, 177.8, and 193.7]	5.000 [127.0]	3.500 [88.9]	11,000 [75,845]	11,500 [79,293]
7.000 and 7.625 [177.8 and 193.7]	5.370 [136.4]	4.000 [101.6]	11,000 [75,845]	11,500 [79,293]
9.625 and 10.750 [244.3 and 273.1]	7.390 [187.7] 8.000 [203.2]	5.000 [127.0] 6.250 [158.8]	9,400 [64,813] 6,500 [44,616]	10,000 [68,950] 7,500 [51,713]

[†] Other sizes are available on request. Contact your local Schlumberger representative.

[‡] Pressure rating varies with thread type and end connection. Values shown are for 80,000-psi [551,600-kPa] material at 250 degF [121degC] with a 20% safety factor.