Schlumberger

KUDU Insert System

PCP removal and replacement without pulling the tubing

APPLICATIONS

- Progressing cavity pump (PCP) installations in
  - heavy, medium, and light oil wells
  - water wells
  - coalbed methane and conventional gas wells (for dewatering)

BENEFITS

- Reduces workover time, costs, and deferred production by enabling removal and replacement of PCP without pulling the tubing string
- Eliminates costs associated with removal and reinstallation of downhole gauges mounted on the tubing

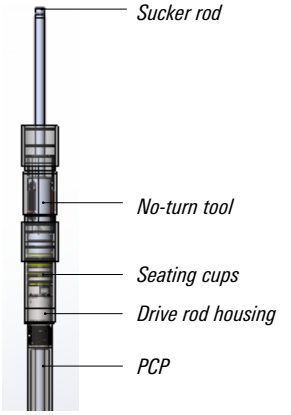
FEATURES

- Easy installation and retrieval on the end of a rodstring with no rotation
- Compatibility with standard API and nonstandard pump seating nipples (PSNs)
- Three configurations to accommodate a wide range of well applications

A conventional PCP stator is connected to the tubing string in the well. Consequently, all the tubing joints must be pulled out to install, replace, or remove the stator.

The innovative KUDU insert system enables PCP installation in (or removal from) the production tubing using the sucker rodstring, eliminating the need to pull out the tubing and run it back in. This minimizes operating costs and NPT. It is suitable for 2⅞-in [73.025-mm], 3½-in [88.9-mm], and 4½-in [114.3-mm] tubing. Deployment and removal are simple and do not require rotation.

Three configurations are available to accommodate a wide range of applications.



Insert system and PCP assembly.

Type A configuration

A standard API PSN and a secondary nipple are installed in the tubing string. The insert system latches on to the secondary nipple and forms a seal with the PSN, preventing pumped fluid from draining back down the tubing and the stator from rotating. This robust system can withstand higher torque, enabling use of larger pumps and making it suitable for tougher downhole conditions, such as high solids content and viscous fluids.

Type B configuration

This configuration is similar to Type A but does not require a secondary nipple in the tubing string. The insert system seals against the PSN and features a bidirectional-torque anchor that prevents rotation in any direction, protecting the seals and allowing the pump to operate.

Type C configuration

The insert system seats on a non-API PSN. It also features a bidirectional-torque anchor that prevents rotation in any direction.

KUDU Insert System

KUDU Insert System Specifications

Min. Tubing Size, in [mm]	Insert System Model	Pump Nominal Capacity at 100 rpm at Zero Head, bbl/d [m^3/d]	Pump Lift Rating, ft [m]	Stator OD, in [mm]	Stator Length, ft [m]
2⅞ [73.0]	25K1200	157 [25]	3,937 [1,200]	2.2 [55.2]	38.39 [11.70]
3½ [88.9]	3K600	19 [3]	1,969 [600]	2.7 [68.6]	2.94 [0.90]
3½ [88.9]	3K1200	19 [3]	3,937 [1,200]	2.7 [68.6]	5.91 [1.80]
3½ [88.9]	3K2400	19 [3]	7,874 [2,400]	2.7 [68.6]	11.81 [3.6]
3½ [88.9]	6K650	38 [6]	2,133 [650]	2.7 [68.6]	4.28 [1.31]
3½ [88.9]	6K1300	38 [6]	4,265 [1,300]	2.7 [68.6]	8.56 [2.61]
3½ [88.9]	6K1650	38 [6]	5,413 [1,650]	2.7 [68.6]	10.7 [3.26]
3½ [88.9]	6K2000	38 [6]	6,562 [2,000]	2.7 [68.6]	12.84 [3.92]
3½ [88.9]	6K2600	38 [6]	8,530 [2,600]	2.7 [68.6]	17.13 [5.22]
3½ [88.9]	16K800	100 [16]	2,625 [800]	2.7 [68.6]	11.98 [3.65]
3½ [88.9]	16K1200	100 [16]	3,937 [1,200]	2.7 [68.6]	18.05 [5.50]
3½ [88.9]	16K1600	100 [16]	5,249 [1,600]	2.7 [68.6]	24.12 [7.35]
3½ [88.9]	16K2000	100 [16]	6,562 [2,000]	2.7 [68.6]	30.19 [9.20]
3½ [88.9]	31K600	195 [31]	1,969 [600]	2.7 [68.6]	15.05 [4.59]
3½ [88.9]	31K1200	195 [31]	3,937 [1,200]	2.7 [68.6]	30.09 [9.17]
3½ [88.9]	55K960	345 [55]	3,150 [960]	2.7 [68.6]	38.02 [11.59]
4½ [114.3]	63K800	396 [63]	2,625 [800]	3.7 [94]	18.63 [5.68]
4½ [114.3]	63K1200	396 [63]	3,937 [1,200]	3.7 [94]	27.5 [8.38]
4½ [114.3]	63K1600	396 [63]	5,249 [1,600]	3.7 [94]	36.52 [11.13]

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