



The Top Gun CSE pump (Continuous Sand Extraction) has proven itself to be a valuable tool in the oil and gas industry. Originally designed for high sand cut heavy oil wells, it has evolved and is now being used in gas wells, light oil wells and high water cut wells.

The operation of the CSE is as follows:

The CSE moves fluid up the tubing string by reciprocating the pump stroke. When the stroke of the pump is pulled open the ball valve on the top of the pump is closed. This creates a vacuum inside the pump barrel, filling it with fluid that passes through the bottom valve. On the down stroke of the pump the bottom valve closes and the top valve opens allowing the fluid to be pushed through into the tubing string above.

The Top Gun CSE pump has proven itself to be a valuable tool in the oil and gas industry. The CSE is a continuation of the evolution from tubing bailing sand interventions to the rig pump to surface interventions. Observing that rig PTS operation produced more sand and more oil, it was a logical step to try as an alternate production system. CSE pumps were applied to wells that had: episodic sand slugging, intermittent gas production, extreme continuous sand inflow (i.e. >40%), production of other components of the formation matrix (i.e. gravel, coal, shale, consolidated sandstone, pyrite, and possibly cement and drilling mud) or extremely viscous fluids.

The evolution continued with CSE pumps being applied to gas wells, light oil wells, high water cut wells, gas oil well conversions (114 mm casing), failed restricted casing wells, chronic inflow problem wells with the Surge Tool (CSES) and to new wells as a more reliable, economic and superior near wellbore development pumping system.

- ❖ The use of THICK valves are recommended for wells with chronic or anticipated plugging off at intake.
- ❖ Surge Tools are recommended for wells with inflow problems.
- ❖ Coated collars are recommended for tubing casing wear issues.