



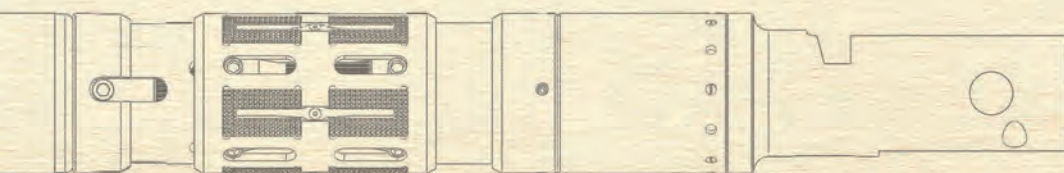
SPEEDY[®] Whipstock

SPEEDY[®] whipstock is the new type of non-vibrational sidetracking equipment, utilizing specific and exclusive design of HPOGC's local engineering expertise and knowledge, which is capable of setting in high mud weights due to not infiltration of drilling mud into the internal mechanism and maneuverable running through doglegs and seats, due to its low-length packer.

Benefits

- No rotation or vibration at high-torque milling operations, having five slips compared to other four-slip packers.
- No need for Equalizing Port, because of specific design of HPOGC which prevents infiltration of drilling mud into the internal mechanism and thus disabling. (If the packer floats in high weight mud at any arbitrary depth of the hole, mud and its solid particles never breach the tool.)
- Low length of packer ease running through meandrous trajectory of hole and reduce the sticking risks of whipstock assembly tools.
- Ensure setting and thru-engagement of slips during installation due to having bi-directional movement of setting cones.

In addition, incorporation of this tool with SPEEDY[®] Tri-Mill creates an efficient assembly for operating whipstock jobs at any tough conditions of drilling mud and casing, in a short period of operational time.



HPOGC SPEEDY® Tri-Mill

SPEEDY® Tri-Mill, the 9th generation of HPOGC whipstock milling tools, is the creature of dynamic thoughts of HPOGC engineering department whom utilizing the results of Window Opening Job Reports done by HPOGC Field Operations Team, researching on developing edges of optimization using advanced CAD/CAE and mechanical engineering software and finally, improving former generations of milling tools.

Benefits

- Impressive increase in shear rate, due to new and reengineered Rugby Mill face.
- The most optimized placement of cutting edges and angles resulting from correct arrangement of Inserts on blades and increase in efficiency and performance of the tool.
- Increase in operation duty at high RPM during Window Opening operations.

This type of whipstock has been designed, manufactured and ran in 2013, by elite Iranian engineers of HPOGC, after long years of continued researches and utilizing noteworthy experiences, achieved having established over 250 successful whipstock running projects in oil and gas wells of our great country, Iran.

