AlphaST™ Single-Trip, Openhole Sidetrack System

Provides a reliable, cost-effective openhole sidetrack solution

Applications

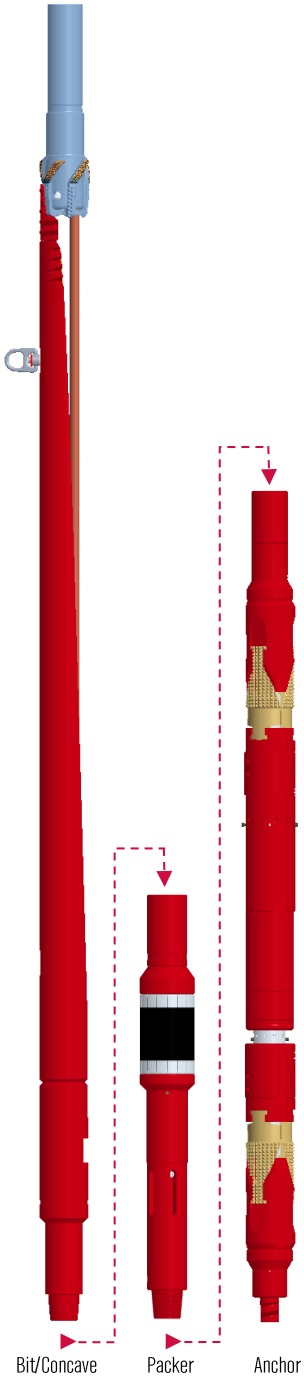
- Lateral departures in openhole wellbores, without the use of a cement plug or dedicated sidetrack drilling bottomhole assembly (BHA)
- Kickoffs in hard, highly compressive formations where cement-sidetrack methods are ineffective
- Increasing reservoir exposure via openhole sidetracks

Features and Benefits

- Single-trip, openhole sidetrack system cements, sets, and drills-off in the same run. This fully modular system is configurable to specific sidetrack applications and wellbore conditions.
- Hydraulic anchor provides two independent anchor-slip sections with six points of contact against the formation to securely anchor the whipstock
- Optional mechanical (compression) set packer provides an isolation barrier if cementing operations are required—allowing drilling operations to commence without waiting on cement
- Copper flow tube within the whipstock concave facilitates pumping cement below the whipstock
- Openhole PDC drill bit, coupled with flex mill facilitates quick departures from original wellbore
- Openhole drill bit ensures ability to successfully drill desired rathole in highly compressive formations, thus eliminating the need for time-drilling

Tool Description

The Weatherford AlphaST single-trip, openhole sidetrack system consists of a hydraulically actuated anchor, optional compression-set packer, flex mill, and the AlphaST OH (openhole) drill bit. The modular system increases operator flexibility, eliminates multiple trips, and avoids multiple cement-sidetrack attempts. The hydraulic anchor allows the operator to position the lateral departure in the openhole wellbore without the need of a false bottom or cement barrier, while the optional compression-set packer provides isolation during cementing operations. The single-angle, 3-degree whipstock creates a smooth transition to eliminate BHA geometry issues on subsequent trips. The AlphaST OH drill bit and flex mill initiate the kickoff. Together, this openhole whipstock system enables access to the payzone within the shortest possible amount of time.



The AlphaST single-trip openhole sidetrack system with hydraulic anchor, mechanical packer, and openhole drill bit helps operators avoid the costs of setting a cement plug, waiting on cement, and time-drilling.

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Specifications

AlphaST Openhole Anchor											
Openhole Size	Expandable Size	Body OD	Min ID	Tool Joint Box Connect.	Tool Joint Pin Connect.	Activation Ball Diameter	Temp Rating	Torque Rating	Load Rating	Set Pressure	Formation Compressive Strength
5.875 in. (149.23 mm)	5-7/8 in. x 7 in. (149.23 mm x 177.8 mm)	5.625 in. (142.88 mm)	0.625 in. (15.88 mm)	3-1/2 in. IF	2.375 in. EUE	0.688 in. (17.47 mm)	300°F (148.89°C)	9,000 ft-lbs (12,202 Nm)	70,000 lbf (311,375 N)	1,000 psi 6.894 (MPa)	8 to 45 ksi (55.16 to 310.26 MPa)
8.375 in. (212.73 mm)	8-3/8 in. x 10-3/8 in. (212.73 mm x 263.52 mm)	8.250 in. (209.55 mm)	1.125 in. (28.58 mm)	4-1/2 in. X-Hole	2.875 in. EUE	1-1/4 in. (31.75 mm)		20,000 ft-lbs (27,116 Nm)	100,000 lbf (444,822 N)	2,500 psi (17,237 MPa)	

AlphaST Openhole Packer												
Openhole Size	Expandable Size	Body OD	Element OD	Min ID	Tool Joint Box Connect.	Tool Joint Pin Connect.	Temp Rating	Pressure Rating	Shear Rating	Pack-Off Weight	Set Type	Formation Compressive Strength
5.875 in. (149.23 mm)	5-7/8 in. x 7 in. (149.23 mm x 177.8 mm)	5.625 in. (142.88 mm)	5.375 in. (136.52 mm)	0.80 in. (20.32 mm)	3-1/2 in. IF		300°F (148.89°C)	1,000 psi (6,895 MPa)	25,000 lbf (111,205 N)	40,000 lbf (177,929 N)	Mech.	8 to 45 ksi (55.16 to 310.26 MPa)
8.375 in. (212.73 mm)	8-3/8 in. x 10-3/8 in. (212.73 mm x 263.52 mm)	8.250 in. (209.55 mm)	8.190 in. (208.03 mm)	1.375 in. (34.93 mm)	4-1/2 in. X-Hole				23,000 lbf (102,309 N)	35,000 lbf (15,876 N)		

AlphaST OH Drill Bit												
General Specifications								Operating Parameters				
Bit OD	Blades	Cutting Structure	Primary Cutter Size	Nozzles	Nozzle Series Type	Connection Size/Type	Attachment Screw Size	Shear Value	Max WOB	Recommended Flow Rate	Max Tripping Torque	Max Drilling Torque
5.875 in. (149.23 mm)	5	PDC	0.512 in. (13 mm)	3	30	3.500 API REG Box	0.750 in. (19.05 mm)	35,000 lbs (15,875 kg)	15,000 lbs (6,803 kg)	300 to 400 gpm (1,135 to 1,514 lpm)	4,000 ft-lbs (5,423 Nm)	90% of Max Conn. MUT
8.375 in. (212.73 mm)					65	4.500 API REG Box	0.875 in. (22.23 mm)	50,000 lbs (22,680 kg)	20,000 lbs (9,072 kg)	400 to 500 gpm (1, 514 to 1,892 lpm)	8,000 ft-lbs (10,846 Nm)	
8.750 in. (222.25 mm)									22,000 lbs (9,979 kg)			

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