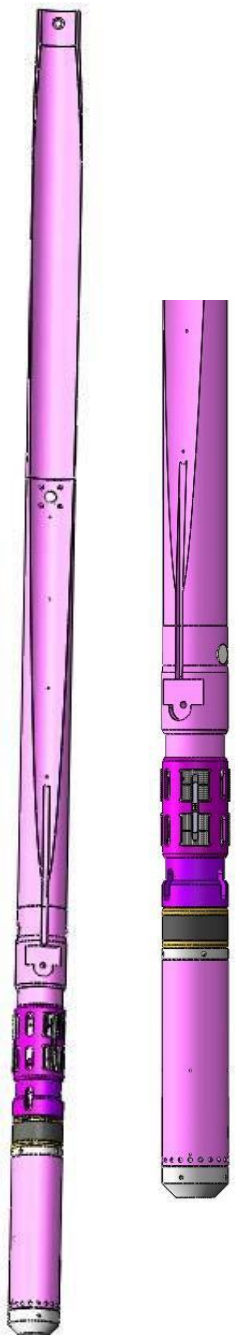
Hydraulic Permanent Packer Type Whipstock



ZNK.CO hydraulic permanent anchor type whipstock with hydraulic sealing anchor is a single-trip, 3° whipstock system with a hydraulically actuated, sealing packer anchor. The premium anchor is used for the temporary zonal isolation of a parent wellbore or for a required, second abandonment barrier. The anchor with the *ZNK.CO* milling system provides improved milling, gauge retention, and formation drilling in a single trip

Applications

- Wells requiring a full bore after the lateral is drilled
- Extended-reach wells to minimize doglegs
- Abandonment plug without the need for multiple plugs
- Wells requiring exits to accommodate long, rotary-steerable drilling systems
- Wells running complex completion strings and expendables

Features, Advantages and Benefi

- The milling bottom hole assembly (BHA) and whipstock are designed for safe, quick
- BHA is open ended, enabling continuous flow for well control and for logging and measurement while drilling before activating the packer.
- The aggressive lead-mill geometry improves the rates of penetration and gauge retention, minimizing additional trips related to mill gauge loss.

Hydraulic Permanent Packer Type Whipstock

Features, Advantages and Benefits (continued)

- Shear value for the mill attachment bolt can be adjusted for varying well profile enabling greater operational flexibility in the field
- The unique lug technology protects the whipstock during cut-out, enabling accurate direction of the mill into the casing wall.
- The window can be oriented, anchored, and milled in one efficient trip, reducing overall rig costs.
- The 3° single angle concave creates a smooth transition from the parent bore into the lateral section.
- The system includes a Thick Flange shear disconnection, providing debris management as well as the capability to change from one anchor type to another.
- The 7-in. packer has been qualifying up to 5,000 psi (34,474 KPa) at 275°F (135°C) to meet API 11D1, ISO 14310 V3 specification ensuring that validation testing and quality assurance are met with the same minimum standards.
- Simple design with off-the-shelf components ensures maximum tool reliability, delivering high-quality retrieval records.

Hydraulic Permanent Packer Type Whipstock

Specifications

Mill Assemblies

Casing		Concave OD (in./*mm*)	Lead Mill			Secondary Mill			Steering Mill	
OD (in./*mm*)	Weight (lb/ft, *kg/m*)		OD (in./*mm*)	Pilot OD (in./*mm*)	Box Connection (in.)	OD (in./*mm*)	Connection Box × Pin		OD (in./*mm*)	Connection Box × Pin
7 *177.80*	20.0 to 23.0 SD *29.8 to 34.2*	5-1/2 *139.7*	6-1/4 *158.8*	5 *127.0*		6-1/4 *158.8*			6-1/4 *158.8*	3-1/2 IF × pin
	23.0 to 26.0 to 29.0 SD *34.2 to 38.7 to 43.2*		6-1/8 *155.6*			6-1/8 *155.6*			6-1/8 *155.6*	
	29.0 *43.2*		6 *152.4*	4-1/2 *114.3*		6 *152.4*			6 *152.4*	
	32.0 SD *47.6*									
	32.0 to 35.0 *47.6 to 52.1*		5-7/8 *149.2*			5-7/8 *149.2*			5-7/8 *149.2*	
9-5/8 *244.48*	43.5 *64.7*	8 *203.2*	8-1/2 *215.9*	6-3/8 *161.9*		8-1/2 *215.9*	×		8-1/2 *215.9*	4-1/2 IF * pin
	47.0 *69.9*									
	53.5 *79.6 SD*									
	53.5 *79.6*		8-3/8 *212.7*			8-3/8 *212.7*			8-3/8 *212.7*	
	58.4 *86.9*		8-1/4 *209.5*			8-1/4 *209.5*			8-1/4 *209.5*	

Hydraulic Permanent Packer Type Whipstock

Specifications (continued)

Packers

Casing				hydraulic permanent packer type whipstock			
OD (in./*mm*)	Weight (lb/ft, *kg/m*)	ID (in./*mm*)		Maximum OD (in./*mm*)	Temp (°F/°C)	Torque (lb/ft, *N•m*)	Differential Pressure Rating[a] (psi/*kPa*)
		Minimum	Maximum				
7 *177.80*	20.0 *29.8*	6.276 *159.40*	6.456 *163.90*	6.000 *152.40*	275° *135°*	8,800 *11,931*	5,000 *34,474*
	23.0 *34.2*						
	26.0 *38.7*						
	29.0[b] *43.2*	6.004 *152.50*	6.184 *157.00*	5.750 *146.05*			
	32.0[b] *47.6*						
	35.0[b] *52.1*						
9-5/8 *244.48*	43.5[b] *64.7*	8.435 *214.25*	8.835 *224.40*	8.000 *203.20*		20,000 *27,116*	3,500 *24,132*
	47.0[b] *69.9*						
	53.5[b] *79.6 SD*						
	53.5[b] *79.6*						
	58.4[b] *86.9*						

[a]At 275°F (135°C)

[b]Heavy-weight concave. The pilot OD determines the concave size. Light- and heavy-weight lead mills and concaves are not interchangeable.

Options

- System can be run in a permanent application
- Standard hook-and-die-collar retrieval methods are available.