

Product Report



9 1/2" M516

Design Features of this bit

Helios™ Cutters - Advanced Thermostable PDC cutters designed specifically for maximum thermal toughness. The cutter combines high-density polycrystalline diamond material specifically selected for impact toughness, abrasion resistance and enhanced thermal toughness. The patented deep leach technology provides this thermal toughness to reduce cutter degradation significantly, allowing the bit to drill considerably further and faster to improve overall bit performance.

SmoothTorque™ Torque Control Components - Insert configurations that provide a predictable torque response to applied weight on bit and reduction in torque variance. Torque Control Components deliver a reduced risk of torsional vibration and improved toolface / directional control. Insert configuration set behind the PDC cutters that act as instantaneous torque reducers, damping out torque spikes that may be encountered while drilling.

SmoothSteer® - The SmoothSteer® gauge delivers maximum gauge contact, lowers resistance to steer and reduces torque, leading to improved ROP and extended bit and tool life. This arrangement improves borehole quality while rotating and smoother steering in sliding mode when on a steerable motor.

Cutting Structure

Type	Qty	Location	Diameter	Shape
Primary	32	FACE	16 mm	CYLINDER
Primary	5	GAGE	16 mm	CYLINDER
TCC	8	FACE	11 mm	DOME TOPPED
Impact Arrester	15	FACE	11 mm	DOME TOPPED
Upream	5	BACK-ANGLE	13 mm	CYLINDER

Design Specifications

Make up Length (ft):	.88
Shank Bore (ins):	2.283
Shank Diam (ins):	8.000
Connection std:	N
Connection Size(ins):	4.500
Connection Type:	Api Reg Pin
Make up Torque (ft-lbs):	47500

IADC Code92:	M422
Diameter:(ins)	9 1/2"

Body Material:	Matrix
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JSA(in ²):	18.57
Face Volume:(in ³)	67.90
Normalised Face vol:	55.23%

Blade Qty:	5
Gauge Length:(ins)	4.000
Gauge Geometry:	Spiral-Trailing
Profile:	Short Taper - Shallow Cone

Recommended Operating Parameters

Max Operating WOB (klbs):	38
TFA Range (ins ²):	.188 - 2.209
Max Flow (gpm):	1100
Pressure Drop(psi):	700-2500
HSI:	2-7

In some applications this bit is run successfully beyond these parameters. Contact your NOV Downhole Representative for recommended operating parameters in your application. NOV Downhole reserves the right to revise these specifications, based on advances and improvements in technology.

This report is valid for 30 days from 16-May-2012

Nozzles & Ports

Qty	Type	Size
5	BBK	VARIABLE