UltraMotors

Black Diamond's UltraMotors, set the industry standard for cost-efficient, reliable, and resilient directional drilling operations in the most challenging environments. Engineered to thrive in extreme heat conditions up to 185°C, this cutting-edge technology ensures unparalleled performance, making it the go-to solution for operators pushing the boundaries of hot and harsh drilling environments. UltraMotors feature our industry defining Flex-Shaft which delivers unmatched power delivery and reliability at increased torque levels. With a focus on reliability, ease of use, and optimized cost efficiency, UltraMotors empower your operations with unwavering precision and durability, allowing you to conquer any drilling challenges with confidence. Welcome to a new era of drilling excellence with Black Diamond.

Features and Benefits

Proven Bearing Technology

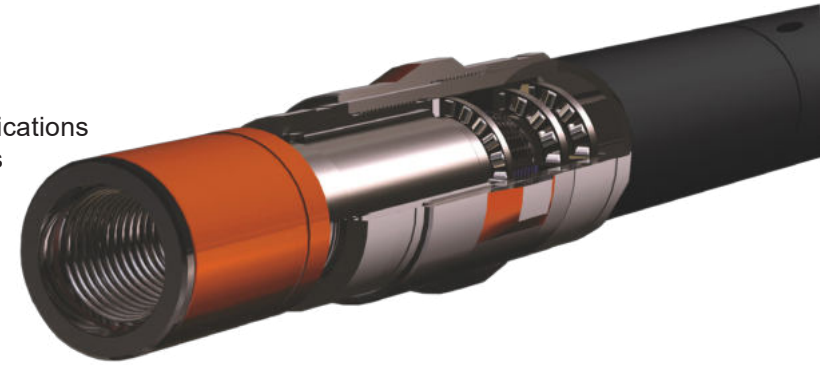
- Custom designed for mud lubricated applications
- Industry proven thrust and radial bearings
- Uniform and consistent load distribution
- Maximized WOB capacity

Configurable Bend Options

- 0-3º adjustable bend
- Fixed bend option for shorter bit-to-bend
- Superior wear resistance

Market Leading Flex-Shaft

- Unique design allows for unparalleled flexibility in navigating the complexities of downhole environments
- Exceptional strength and resilience
- Unmatched reliability while supporting higher torque limits
- Maximizes drilling efficiency by transmitting power with minimal loss
- Precision engineered to deliver highest standard of performance and durability



High Temperature Elastomers

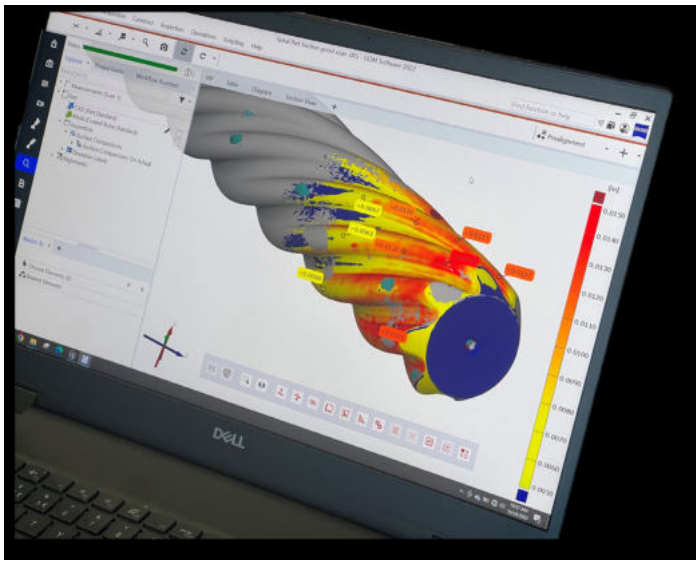
- Standard and high torque options
- Standard or Oil-Resistant options

Maxi-Torque Driveline

- Designed for high torque power sections
- Advanced angular compensation ensuring effective power transfer

RSS Ready

- Pin Down mandrel & straight housing options
- Achieve high downhole RPM with RSS



End of Life Motor & Rotor Plan

Employing advanced testing and scanning technologies combined with sophisticated data analysis Black Diamond ensures timely retirement and replacement of all critical parts thus mitigating costly age related failures.

UltraMotor - Specifications

UltraMotor Bearing Assembly Specifications

Motor Size (in.)		5	5 1/4	5 1/2	5 3/4	6 1/2	7	7 1/4	8 1/4	9 5/8
Nominal BA OD (in.)		5.25	5.25	5.5	5.75	6.5	7.25	7.25	8.25	9.62
Series		M40	M40	M40	M40	M40	M40	M40	M40	M40
Bit Box to Bend (in.)		50	50	53	53	N/A	57	57	66	94
Bit Box to Fixed Bend (in.)		40	40	43	47	51	45	45	52	N/A
Hole Size (in.)		6 1/8 - 7 7/8	6 1/8 - 7 7/8	6 3/4	5 3/4	7 7/8 - 9 7/8	8 1/2 - 9 7/8	8 1/2 - 9 7/8	9 7/8 - 12 1/4	12 1/4 - 17 1/2
Standard Bit Box Thread (API)		3 1/2 REG	3 1/2 REG	3 1/2 REG	3 1/2 REG	4 1/2 REG	4 1/2 REG	4 1/2 REG	6 5/8 REG	6 5/8 REG
Operating Capacity	WOB (klbs)	41	41	48.5	57.5	72	76.5	76.5	97.25	132
	Bit Overpull (klbs)	41	41	48.5	57.5	72	76.5	76.5	97.25	132
	Internal Torque (klbf-ft)	9	9	11	12	15	21	21	28	32
	Flow Rate (gpm)	450	450	550	550	600	850	850	1,200	1,500
Static Capacity	WOB to Re-run (klbs)	181	181	231	254	358	355	355	463	772
	Bit Overpull to Re-run (klbs)	127	127	169	212	222	319	319	326	223
	Absolute Body Overpull (klbs)	424	424	440	499	545	659	659	783	1,177
	Internal Torque (klbf-ft)	14	14	16	17	24	34	34	45	52
	Housing Torque (klbf-ft)	18	18	20	22	25	35	35	45	60

UltraMotor Power Section Specifications

Motor Size (in.)	Power Config.	Speed Range (RPM)	Rotation (rev/gal)	Torque Slope (rev/gal)	Max Diff Pressure (psi)	Stall Torque (lbf-ft)	Max Power (hp)
3 1/8	7/8 2.5	120-260	1.24	1.97	290	1,830	50
4 3/4	5/6 8.3	300	1	2.55	1,960	4,980	280
4 3/4	7/8 2.6	38-79	0.263	8.97	590	7,880	68
4 3/4	7/8 3.8	78-130	0.521	5.2	860	6,670	96
5	5/6 8.3	100-300	1	2.55	1,660	6,670	127
5	7/8 2.6	39-79	0.263	8.97	590	7,880	68
5 1/4	7/8 8.3	190	0.48	4.8	1,960	9,370	340
5 1/2	7/8 8.5	120-220	0.5	5.087	1,910	14,590	348
5 3/4	6/7 10.6	180-300	0.6	4.29	2,390	15,350	490
6 1/2	7/8 6.0	86-173	0.288	9.3	1,350	18,830	357
6 3/4	7/8 5.7	73-157	0.242	10.7	1,280	20,580	350
6 3/4	7/8 6.0	86-173	0.288	9.3	1,350	18,830	357
7	6/7 12.1	140-300	0.4	6.44	2,720	26,300	899
7 1/4	6/7 12.1	140-300	0.4	6.44	2,720	26,300	899
8	7/8 3.4	36-60	0.087	28.19	800	22,530	340
8 1/4	7/8 7.0	66-166	0.166	15.32	1,580	36,200	680
9 5/8	5/6 4.0	66-130	0.108	21.37	900	28,850	434
9 5/8	7/8 4.8	66-132	0.11	22.27	1,080	36,070	529

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