6¾ in. BlackBox High Frequency Tool

Our BlackBox™ High-Frequency (HF) memory-mode tool samples dynamics data at 1500 Hz and load measurements at 100 Hz. With advanced internal memory that can record a full dataset for 175 hours, it provides data for weight on bit, torque on bit, three-axis vibration, annular pressure, internal pressure, temperature, and RPM. Due to the high memory capacity of the BlackBox HF tool, all of the high-speed, sampled data is stored and delivered to the surface where it can be further analyzed in the office.

Mechanical Specifications

Specifications and Dimensions[1]	
Size	6¾ in.
Overall length	72 in.
Material	4330V Mod.
Material yield strength	165 ksi
Max tool OD	6¾ in.
Nominal ID	2¼ in.

Mechanical Ratings	
Rating pressure [2]	20,000 psi
Dogleg - Rotating	10°/100 ft
- Sliding	20°/100 ft
Max tension	700 K
Max torque	36,700 ft-lbs
Rated temperature	32 (0) to 302° (150°) F(C)

Uphole Connnection	
Tool connection	NC50 Box
Tool joint ID	3½ in.
Tool joint OD	6⅜ in.
Max make-up torque [3]	36,700 ft-lb

Downhole Connnection	
Tool connection	NC50 Pin
Tool joint ID	3½ in.
Tool joint OD	6⅜ in.
Max make-up torque [3]	36,700 ft-lb

WOB/TOB+ Data Performance[4]	
Memory life	175 hr continuous (typ)
	8 GB data storage
Data collection	Vibration record rate = 1500 Hz
	All other record rates = 100 Hz

Dynamic Sensor Specifications[5]

Measurement Type	Range	Sensor Accuracy	Sensor Resolution
Lateral vibration (x-axis, y-axis)	±40 g	1% FS	0.0025 g
Axial vibration (z-axis)	±40 g	1% FS	0.0025 g
RPM	±333	5% FS	0.05 rpm
Weight	±300 klb	2.5% FS	13 lb
Torque	±40 ft-lb	2% FS	2 ft-lb
Annular pressure	0 to 20,000 psi	0.4% FS	0.7 psi
Internal pressure	0 to 20,000 psi	0.4% FS	0.7 psi
Temperature	-40° C to 150° C	3° C	0.13° C

[1] All measurements listed are nominal. Redressed or worn Sub values may vary.
[2] Maximum internal, external, or hydrostatic pressure.
[3] The maximum make-up torque should be applied when possible.
To determine MUT for uphole and downhole connections, consult the specifications sheet of the mating component.
The lesser of the two max MUT values shall not be exceeded.
[4] Values assume default data configurations are used.
[5] Values are based at the ambient temperature under nominal vibration levels.