

ARRIVAL

ENERGY SOLUTIONS

HURRICANE

Downhole On/Off Reamer

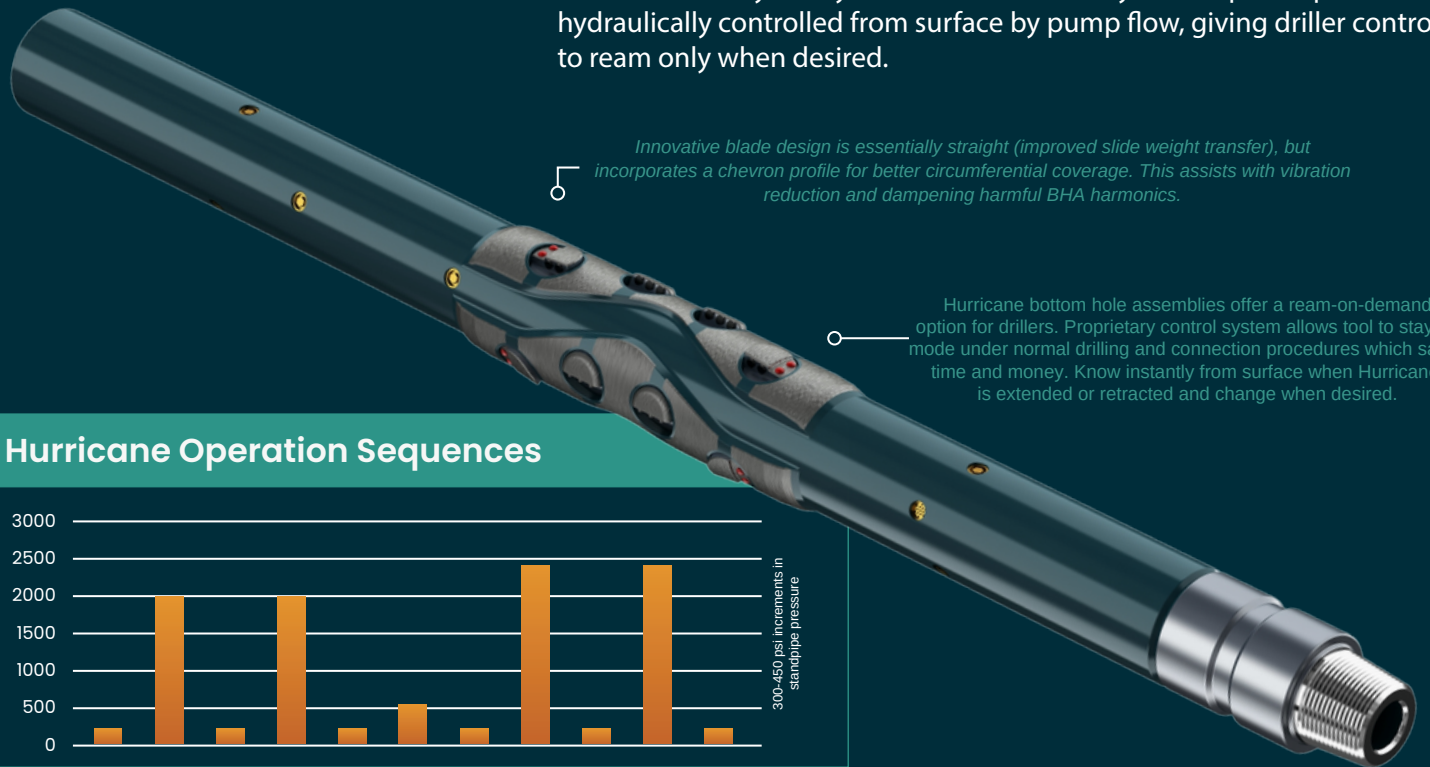
The ULTIMATE in On-demand Reaming

When the pistons are extended, there is a 300-450 psi increase in stand pipe pressure compared to when the cutter pistons are recessed in the blade of the stabilizer. This pressure can be monitored easily from the rig floor pressure gauges to determine the current position setting of the Hurricane when downhole.

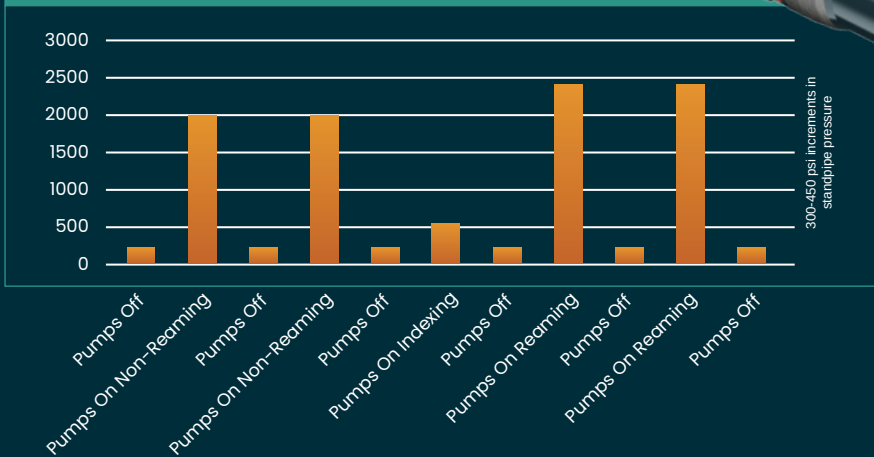
The Hurricane is a downhole, hydraulically actuated reamer. Designed for use in directional drilling applications to condition wellbores, remove key-seats and smooth dog leg severity while drilling. The Hurricane can be utilized in any rotary bottom hole assembly. Cutter piston position is hydraulically controlled from surface by pump flow, giving driller control to ream only when desired.

Innovative blade design is essentially straight (improved slide weight transfer), but incorporates a chevron profile for better circumferential coverage. This assists with vibration reduction and dampening harmful BHA harmonics.

Hurricane bottom hole assemblies offer a ream-on-demand option for drillers. Proprietary control system allows tool to stay in-mode under normal drilling and connection procedures which saves time and money. Know instantly from surface when Hurricane is extended or retracted and change when desired.



Hurricane Operation Sequences



Patent 9,448,722

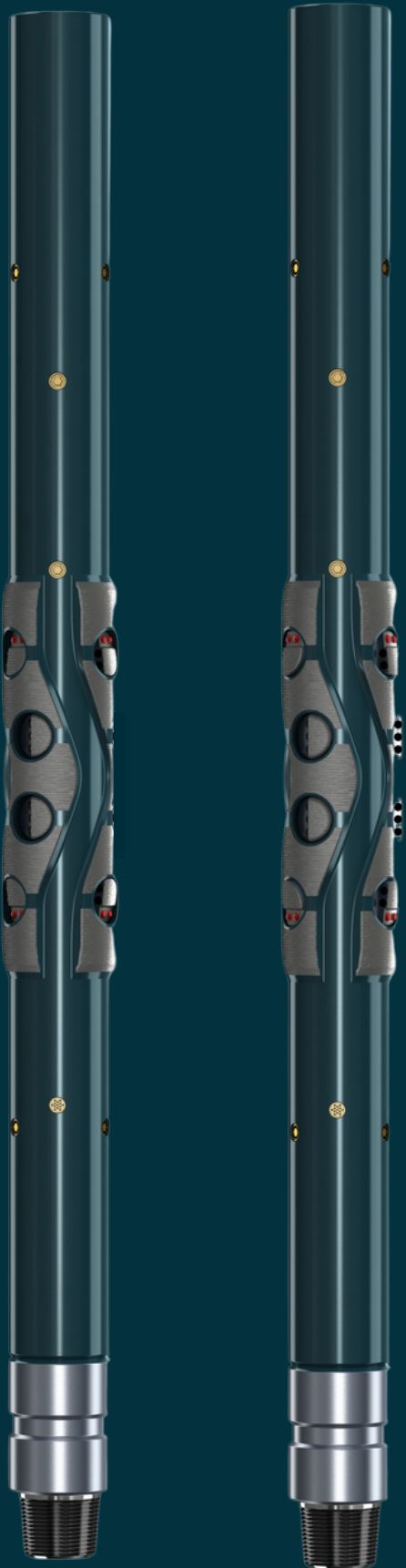
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Technical Specifications

Hole Size	5.875" (1492 mm)	6.000" (1524 mm)	6.125" (1556 mm)	6.250" (1588 mm)	6.625" (1683 mm)	6.750" (1715 mm)
Mandrel Through Bore	1.250" (31.8 mm)	1.250" (31.8 mm)	1.250" (31.8 mm)	1.250" (31.8 mm)	1.250" (31.8 mm)	1.250" (31.8 mm)
Body Diameter	5.020" (127.5 mm)	5.020" (127.5 mm)	5.020" (127.5 mm)	5.020" (127.5 mm)	5.020" (127.5 mm)	5.020" (127.5 mm)
Overall Length	78.50" (1994 mm)	78.50" (1994 mm)	78.50" (1994 mm)	78.50" (1994 mm)	78.50" (1994 mm)	78.50" (1994 mm)
* Box Up	3-1/2" API IF (NC 38)	3-1/2" API IF (NC 38)	3-1/2" API IF (NC 38)	3-1/2" API IF (NC 38)	3-1/2" API IF (NC 38)	3-1/2" API IF (NC 38)
* Pin Down	3-1/2" API IF (NC 38)	3-1/2" API IF (NC 38)	3-1/2" API IF (NC 38)	3-1/2" API IF (NC 38)	3-1/2" API IF (NC 38)	3-1/2" API IF (NC 38)
Hole Size	7.875" (200 mm)	8.375" (213 mm)	8.500" (216 mm)	8.750" (222 mm)	12.000" (305 mm)	12.250" (311.2 mm)
Mandrel Through Bore	1.625" (41.3 mm)	1.625" (41.3 mm)	1.625" (41.3 mm)	1.625" (41.3 mm)	2.000" (50.8 mm)	2.000" (50.8 mm)
Body Diameter	6.750" (171.5 mm)	6.750" (171.5 mm)	6.750" (171.5 mm)	6.750" (171.5 mm)	8.000" (203.2 mm)	8.000" (203.2 mm)
Overall Length	95.00" (2413 mm)	95.00" (2413 mm)	95.00" (2413 mm)	95.00" (2413 mm)	113.00" (2870 mm)	113.00" (2870 mm)
* Box Up	4" API IF (NC 46)	4-1/2" API IF (NC 50)	4-1/2" API IF (NC 50)	4-1/2" API IF (NC 50)	6-5/8" API REG	6-5/8" API REG
* Pin Down	4" API IF (NC 46)	4-1/2" API IF (NC 50)	4-1/2" API IF (NC 50)	4-1/2" API IF (NC 50)	6-5/8" API REG	6-5/8" API REG

*The listed diameters and thread connections are typical, however, the tool can be configured per specific requirements.

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