

Cyclone - Eccentric Reamer

Modular Wellbore Conditioning Tool



HOLE QUALITY BENEFITS

- Reduced Torque and Drag
- Reduced Stick/Slip
- Reduced Overpull
- Increased Effective Hole ID

DRILLING PERFORMANCE BENEFITS

- Enhanced Weight Transfer
- Improved Rates of Penetration
- Improved Trip Times
- Reduce Swabbing When Hoisting

CASING EFFICIENCY

- Improved Casing Run Times
- Improved Cementing Quality
- Modular Design Allows For Fine Tuning Wellbore Effective Drift Diameters

PATENTED MODULAR DESIGN[†]

- Center Mandrel Allows For Fine Tuning Blade Separation Offset and Stiffness
- 360 Degree Splined Blade Sleeves Allow up to 20 Position Adjustments and Multiple Size Options
- Interchangeable Top and Bottom Connection Subs Easily Match Any Connection Type

TECHNICAL SPECIFICATIONS

Tool Size (ID)	2.75" - 3.00" (69.8 - 76.2 mm)
Tool Size (OD)	6.00" - 8.50" (152.4 - 215.9mm)
Length	9.00' - 11.00' (2.74 - 3.35m)
Hole Sizes	6.125" - 8.75" (155.5 - 222.2mm)
Weight	600 - 1,100 lbs
Connections *	Any
Max Pull	Thread Dependent

*Tools can be customized for each application.

† Patent Pending

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Modular Top and Bottom Subs

Allows the Cyclone to fit any connection type easily.

Adjustable Upper Cutter Blade Sleeve

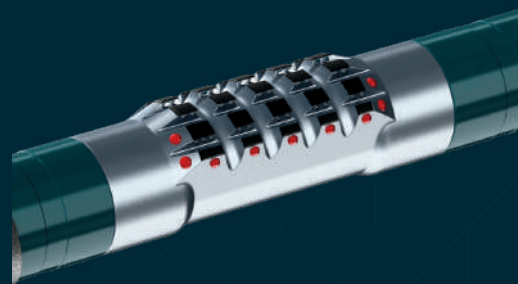
The proprietary design feature allows each PDC Cutter Sleeve to be rotated independently for up to 20 positions. This design feature allows drillers to fine tune their Cyclones for their application. Standard offset to second blade is 162°.

Interchangeable Center Mandrel

Interchangeable Center Mandrels offer more opportunities to change the flexibility of the Cyclone. Distance between PDC Cutter Sleeves can be changed to fine tune tools performance.

Adjustable Lower Cutter Blade Sleeve

The proprietary design feature allows each PDC Cutter Sleeve to be rotated independently for up to 20 positions. This design feature allows drillers to fine tune their Cyclones for their application. Standard offset to second blade is 162°.



Cyclone Cutter Sleeves come fitted with Carbide Dome protection and PDC Cutters aligned for less friction downhole when slide drilling.



Cyclone Cutter Sleeves are configurable to provide more or less side loading and force distribution.



Cyclone Cutter Sleeves are standard offset for eccentric motion. Cutter Blades are positioned facing 162°.

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