

# Rhino XM on-demand multiactivated reamer

Complete and reliable control of reamer activation and deactivation

## Applications

- Boreholes requiring multiple reaming and nonreaming intervals
- BHA placement below ID-restricted components, such as LWD and MWD tools
- Rotary BHA, near-bit reamer placement
- Highly abrasive formations
- Close-tolerance and expandable casing programs
- Extended-reach-drilling (ERD) operations and other well profiles with inclinations greater than 65° where conventional pumpdown activation is limited

## How it improves wells

More reliable than third-party reamers, the Rhino XM\* on-demand multiactivated reamer features an indexing system with protective oil-filled chamber and functional design redundancy.

- More efficient multiactivation and deactivation
- True on-demand wellbore enlargement
- Better drilling performance
- Compatibility with full-gauge concentric wellbores

## How it works

Rhino XM reamer provides complete control of reamer activation, eliminating pumpdown device activation. This enables placing

the Rhino XM reamer below ID-restricted BHA components, such as MWD and LWD tools. Additionally, the reamer's flow actuation changes the reaming mode in minutes, reducing reamer activation time and enabling an unlimited number of activation cycles during a run.

- Incorporates innovative rotating cam stop to provide movement redundancy and reduce rotating seals
- Minimizes the translational and rotational force needed to move the cam
- Prevents sticking by enclosing hydraulic oil and sealing the actuation system from the annular, throughbore flow
- Provides clean and lubricated environment free of mud, reducing sticking and static friction

## What it replaces

- Conventional reamers

## Features

- Unlimited activations regardless of wellbore inclinations
- Full-flow capability in reaming and nonreaming modes
- Quick deployment and retraction of PDC cutter blocks
- Effective cleaning of borehole with integrated jet nozzle and flow paths
- A one-time lockout mechanism keeping the reamer dormant until needed, providing preshear operation flexibility

Specifications	Size 11625	Size 13000	Size 14250	Size 16000
Overall length, ft [m]	19.42 [5.92]	19.42 [5.92]	19.42 [5.92]	19.42 [5.92]
Min. neck length, ft [m]	2 [0.61]	2 [0.61]	2 [0.61]	2 [0.61]
Fishing neck OD, in	8¼ or 9	8¼ or 9	9½	9½
Body diameter, in	11%	13	14¼	16
Pin-to-cutter block length, ft [m]	9.47 [2.89]	9.47 [2.89]	9.47 [2.89]	9.47 [2.89]
Min. ID, in	2⅞	2⅞	2⅞	2⅞
Min. flow by area, in <sup>2</sup> [cm <sup>2</sup> ]	12.10 [78.06]	22.20 [143.23]	24 [154.84]	66.7 [430.32]
<b>Operating Parameters</b>				
Hole opening size, <sup>†</sup> in	13½–15	15–16½	16–18	18–22
Min. pilot hole size, in	12%	13½	14¾	18
Min. collapsed diameter, in	11%	13	14¼	17%
Max. flow rate, galUS/min [L/min]	1,700 [6,435]	1,700 [6,435]	1,700 [6,435]	1,700 [6,435]
Min. operating pressure, psi [MPa]	610 [4.21]	610 [4.21]	610 [4.21]	610 [4.21]
Max. operating pressure, psi [MPa]	3,000 [20.68]	3,000 [20.68]	3,000 [20.68]	3,000 [20.68]
Standard PDC cutter size, mm	13, 16, or 19	13 or 16	13, 16, or 19	13, 16, or 19
Max. operating temperature, degF [degC]	419 [215]	419 [215]	419 [215]	419 [215]
Connections	Top 6% or 7% Reg box Bottom 6% or 7% Reg pin			
Assembled tool weight, lbm [kg]	4,519 [2,050]	4,713 [2,137]	4,977 [2,258]	5,576 [2,529]
Maximum lost circulation material (LCM), <sup>‡</sup> lbm/bbl [kg/m <sup>3</sup> ]	50 [190] medium nut plug			

<sup>†</sup> Hole opening size is configurable.

<sup>‡</sup> Higher LCM concentrations should be reviewed with a Schlumberger representative.