

FAST-R Underreamer

Next generation of high performance underreaming

The FAST-R™ underreamer is the latest underreaming solution from NOV ReedHycalog that allows ball drop and/or flow control options for any multi-cycle application. Built on our reliable Anderreamer™ platform, the FAST-R underreamer design utilizes premium ReedHycalog PDC technology and an advanced hybrid cycling mechanism to complete underreamed intervals faster than ever before. This combination of high-performance features is unique to the FAST-R underreamer and the addition of numerous fail-safe mechanisms makes FAST-R underreamer the best available design for one-trip underreaming applications.

Operating Overview:

Activity	Standard Setup Default Open	Secondary Reamer Default Closed
RIH and drillout	Tool locked in closed position	Tool remains retracted
Activation	Drop ball to unlock and activate	Flow cycle / downlink to activate
Underream	Tool resets at every connection	Time each connection to keep open
Pump out for hole cleaning	Flow cycle / downlink to close, Time each connection to keep closed	Pumps off for several min to close, Tool resets every connection
Resume URR	Pumps off for several min to open	Flow cycle / downlink to activate
Lock closed	Drop ball to deactivate for rest of run	Flow cycle closed (not locked)



Features and Benefits

Fast and simple flow control cycling

Short and unique pumps off and on sequence to change tool position. Customizable cycle time available to optimize/reduce operating time.

Clear pressure signals

Nozzle opens and closes when changing positions.

Never get lost

Pumps off for several minutes to reset back to home / default tool setting. Eliminates short trips and ledge tests to verify tool position.

Field proven reliability

Utilizes the existing Anderreamer™ tool body and cutter block expansion system.

Reduce NPT

No accidental cycles at connections and pump or pressure issues won't change tool position.

Blocks will never get stuck open

Three fail-safe cutter block retraction mechanisms: spring, overpull, and pump closed.

Numerous BHA Placement Options

Oversized thru-bore for wired connection with directional tools or IntelliServ™ wired pipe. Run in tandem with ball drop tools as second reamer or expandable stabilizer.

Hybrid cycling mechanism options (flow + ball drop)

- 1. Shoe Driller** – Never trip due to activation issues. Drillout while closed, drop ball to activate, then flow cycling after.
- 2. Lock Closed** – Improve or expand hole cleaning techniques after reaching TD. Drop ball to lock the tool closed for remainder of run.
- 3. 3D (Multidiameter)** – Reams cement sheath and underream with one tool instead of two. Ream cement sheath at intermediate diameter, then drop ball for full expansion.

Compatible with IQ Monitoring System

Cutter block sensors record PDC wear, position, and vibration. QUIQ analysis app provides critical run information minutes after downloading data.

FAST-R Underreamer

Tool Specification

Pilot Size (in):	18.125	17.50	16.50	14.50	8.500
Body Diameter (in):	18.063	17.438	16.438	14.380	8.440
Opening Range (in):	20.00 – 22.00	19.25 – 21.50	18.25 – 20.00	15.50-17.50	9.00-9.88
Upper Connection:	7½-in. Reg Box	7½-in. Reg Box	7½-in. Reg Box	7½-in. Reg Box	NC 50 Box
Lower Connection:	7½-in. Reg Pin	7½-in. Reg Pin	7½-in. Reg Pin	7½-in. Reg Pin	NC 50 Pin
Length (ft):	29.8	29.8	29.8	24.3	17.8
Weight (lbs):	11,400	11,250	11,030	6,480	2020
Min ID (in):	3.00	3.00	3.00	2.70	1.50
Min Operating Pressure (psi):	600	600	600	600	600
Max Operating Pressure (psi):	2,000	2,000	2,000	2000	2,000
Max DH Pressure (psi):	30,000+	30,000+	30,000+	30,000+	30,000+
Max Temperature (°C / °F):	150 / 302	150 / 302	150 / 302	150 / 302	150 / 302
Min Temperature (°C / °F):	0 / 32	0 / 32	0 / 32	0 / 32	0 / 32
Max DLS in DC (° per 100'):	4°	4°	4°	4°	6°
Max RPM:	180	180	180	180	180
Max WOB (klbs):	100	100	100	100	55
Pressure Drop Across Tool (@10ppg):	60 psi (1,500gpm)	60 psi (1,500gpm)	60 psi (1,500gpm)	70psi (1,000gpm)	127 psi (600gpm)
Max Flow Rate (gpm):	1,750	1,750	1,750	1600	700
Max Solid Content:	25%	25%	25%	25%	25%
Max Sand Content:	2%	2%	2%	2%	2%
Max LCM Concentration (lb/bbl):	60	60	60	60	60
Max Mud Weight (ppg):	18	18	18	18	18
Absolute Max Overpull:	2,204,000	2,204,000	2,204,000	2,204,000	1,006,000
Max Overpull for Rerun:	1,322,000	1,322,000	1,322,000	1,322,000	604,000
Number of Nozzles:	4	4	4	4	4
Activation Ball Size (in):	2.125	2.125	2.125	2.125	1.375
Deactivation Ball Size (in):	2.625	2.625	2.625	2.625	1.875

*Additional options available upon request