

# Hydril GK™ 13-5 HNBR

## Packing Element

**Genuine Hydril Elastomer: Designed to perform in today's extreme environments**

### Applications and Benefits

We have developed a new HNBR Long Lasting (LL) packing unit with a focus on features critical to hostile wellbore environments such as:

- Increased H2S ratings
- Improved wear resistance at continuously elevated temperatures
- Improved fatigue performance

API 16A 4th Edition PR2 qualification has been completed for the GK 13-5 geometry, with other sizes and styles coming soon. HNBR packing units are made to replace NBR packing units currently available.

### The Hydril Elastomer Advantage

The heart of every annular blowout preventer (ABOP) is its packing unit and HMM Hydril Elastomers have been the market leader ever since we pioneered ABOPs over 70 years ago. But time didn't stand still; and neither did we. We proudly present our latest achievement, the introduction of our HNBR-based ABOP packing unit.



### Key features

The HNBR packing unit is made to the same geometry as our NBR packing units currently in the field. This enables a plug-&-play implementation with existing ABOP assemblies. Key features include:

- Drop in replacement with our existing field-proven ABOPs
- Elastomer compound dialed in for superior performance
- Improved wear resistance at continuously elevated temperatures now being encountered in some regions
- Obtained 4x the minimum fatigue cycles required by API 16A PR2 during qualification testing
- Elastomer rated to 10% H2S per API/NACE
- Latest edition of API 16A 4th Edition compliance
- Other sizes available on request
- CSO capable

### Engineering Summary Data

Specification		Measurement
Bore (inches)		13 5/8"
Working pressure (psi)		0 to 5,000
Hydraulic operating pressure (psi)		0 to 3,000
Complete Shutoff (CSO)		Yes
Material		HNBR (HMH ST1000)
Material color band		Orange
API Temperature Ratings (F)	Extreme Cold	20 (D)
	Continuous Hot	150 (A)
	Extreme Hot	250 (D)
Packer weight		550 lbs
API 16A status		4th Ed., PR2
Packing unit part number		3131189-H1

### Qualification Data for GK 13-5 HNBR LL Packing Element

The results depicted below have been acquired through qualification testing in the workshop environment and do not necessarily represent the same conditions occurring in the field. Furthermore packing unit properties may slightly vary due to the dynamic elastomer vulcanization process.

As packing units experience wear resulting from normal use, performance may not meet like-new results.

Elastomer Details	
H2S rating	10% @ 200F
CO2 rating	5%
Fluid Immersion/Compatibility (Diesel)	300 F

Operational Characteristics		
Extended operational range size		3-1/2" to 9-5/8"
Fatigue cycles at ambient temperature on 5" mandrel		100
Stripping Life - 5" OD pipe with 6 5/8"OD tool joints		78 cycles
Fatigue Performance (cycles) at ambient temperature	3-1/2" OD Pipe @ 5K	52*
	5" OD pipe @ 5K	100*
	9-5/8" pipe @ 5K	52*

\*Test voluntarily stopped after performance of the product substantially exceeded the API acceptance criteria

Drift	Mandrel Size	Temp	Time	Status
Drift Results	5" OD	75 (F)	30 seconds	Pass

Initial Closing Pressure (psi)				
Mandrel Size	Wellbore Pressure 0	Wellbore Pressure 2,000	Wellbore Pressure 4,000	Wellbore Pressure 5,000
9 7/8"	275	50	50	50
5"	775	325	275	200
CSO	1,480			

