

# K-BOS®

## KINETIC BLOWOUT STOPPER

Shear Anything | Seal Instantly | Ultimate Reliability



## THE ULTIMATE IN DRILLING SAFETY



13-10M K-BOS on Peregrino-C

Kinetic's 13-5/8" bore 10,000 psi rated K-BOS ("13-10M K-BOS") has been optimized for surface drilling and completion applications and can "Shear Anything" (work string BHAs, tool joints, and heavy casing) and "Seal Instantly", offering a dramatic increase in shearing and sealing capability compared to typical 13-5/8" 10,000 psi BOP stacks.

The 13-10M K-BOS has been successfully qualified to meet DNVGL-OS-E101 per DNVGL-RP-A203 and meets the intent of API 16A PR2 and API S53 by reference. Like all K-BOS, the working components are isolated from wellbore fluids until activation and may be configured with materials qualified for use with up to 5,000 psi partial pressure H<sub>2</sub>S well bore fluids.

The 13-10M K-BOS provides a dramatic improvement in shear and seal capability:

ITEM	TYPICAL BOP SHEAR RAM	K-BOS® CAPABILITY
SHEARING AND SEALING CAPABILITY	Excluding tool joints, BHAs, tool strings, and vulnerable to washout if closed under flow and pressure	Shear anything but the bit, including pipe-light situations, and not affected by pressure or flow up to RWP.
TIME TO SECURE THE WELL	30-45 seconds	Less than 1 second
COMPONENT INTEGRITY	- Working components and elastomers exposed to corrosive well bore fluids. - Maintenance between each well.	- Working components isolated from well fluids until activation - Maintenance free until 5 yr recertification - Compatible w/ extreme sour fluids up to 50% H <sub>2</sub> S

## SURFACE APPLICATIONS



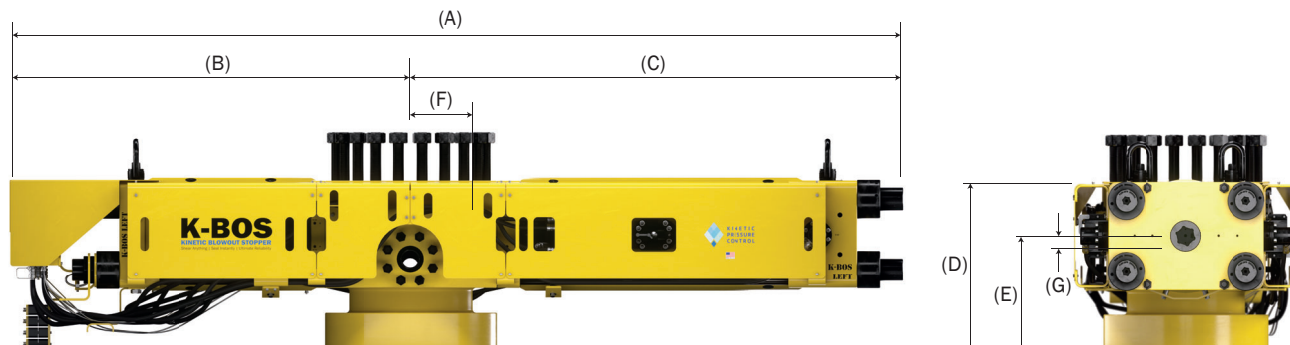
Shown Left: K-BOS added to a BOP stack as a replacement for the drilling cross flow spool.



Shown Right: K-BOS added to the stack as an additional barrier where stack height is not a limiting factor.

## DIMENSIONS

The 13-10M K-BOS has a compact design that has a height of 30 inches (studs up / flange down) or 20 inches (studs up / studs down).



K-BOS <sup>®</sup> Specifications for Drilling														
Bore Size	WPR	Flange Gasket	Flange Configuration	Outlet Size	Outlet Gasket	Dimensions (in)					C.O.G. from Center Line (in)			Est. Dry Weight (Lbs)
						A	B	C	D	E	F	G	H	
13-5/8"	10,000 psi	BX-159	Studs up / Studs Down	2-1/16" 10M	BX-152	146.0	59.4	86.6	20.0	10.0	12.7	0.6	0	13,359
13-5/8"	10,000 psi	BX-159	Studs Up / Flange Down	2-1/16" 10M	BX-152	146.0	59.4	86.6	30.0	20.5	12.7	1.2	0	14,062
18-3/4"	15,000 psi	BX-164	Studs Up / Flange Down	3-1/16" 15M	BX-154	207.2	87.1	120.1	49.1	31.1	13.2	19.6	0	57,614
18-3/4"	20,000 psi	18-20M	Studs Up / Flange Down	4-1/16" 20M	BX-155	165.3	22.4	78.5	63.5	43	11.5	2.5	0	66,784

These dimensions, along with fully rated side outlets, allow the 13-10M K-BOS to be installed as an additional item in the BOP stack or replace the existing drilling crossflow spool, resulting in an easy retrofit into almost any 13-5/8" 10,000 psi BOP stack.



## 18-15M K-BOS Shearing Capability



8.5" OD Tool Joint Landing String, V150



16" OD HP Casing, Q125 6-5/8" OD Inner String,  
V150 Combined 186ppf



6.9" OD Slip Proof Landing String, V150  
Side Load & Compression



18" OD Casing, P110 6-5/8" OD Inner String,  
V150 Combined 167ppf



0.3125" Braided  
E-Line / 0.125" Slick Line



9.5" OD Drill Collar  
214ppf, MYS 120

## SHEARING CAPABILITY ANALYSIS (D&C)

Phase of Well Construction	% Time Across BOP	K-BOS	Regulatory Context
Drill / Work String	40-60%	100%	API 553 Regulations
E-Line/ Wireline/ Slick Line	20-30%	100%	
Tubing (Incl. Control Lines)		100%	
Casing incl Joints	10-20%	100%	Process Safety
Casing w/ Inner String or Drill-in Liner		100%	
Tool Joints	4-7%	100%	
BHAs and Tools (Excluding bits)	2-5%	100%	Well Control Situations
"Moving Pipe" Situations	<1%	100%	
Under Compression		100%	
Under Side Load / Any Position in Wellbore		100%	
Full Flowing Conditions		100%	

Color Legend: Shear and Seal

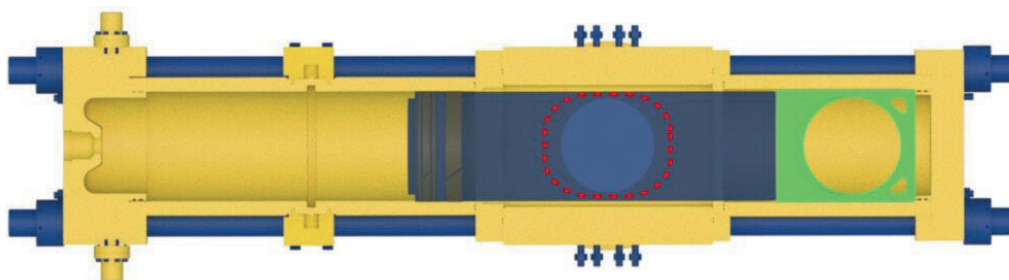
## K-BOS Shearing Predictive Model



13-10M K-BOS Shearing predictive model vs actual  
shown for 6-5/8" OD HWDP 0.813 WT S135

## PROPRIETARY SEALS

Kinetic's proprietary seal design allows for reliable use of elastomeric materials compatible with up to 50% H<sub>2</sub>S and 50% CO<sub>2</sub>. The design may be actuated under full flow and pressure and is not susceptible to failure due to compression set or extrusion.



Shown Above: A cut-away view illustration of the 13-10M K-BOS as seen from above the device looking down the wellbore. The semi-transparent dark blue element has been actuated across the wellbore, and the red dashed line illustrates the seal location



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