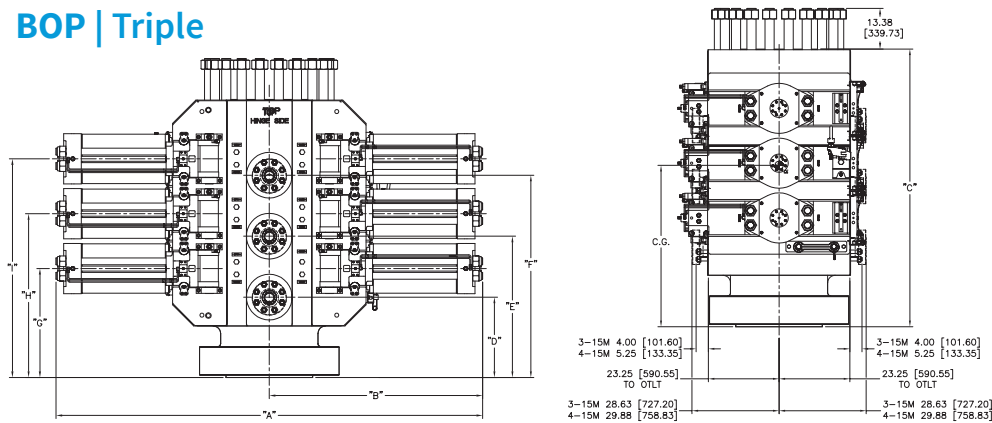


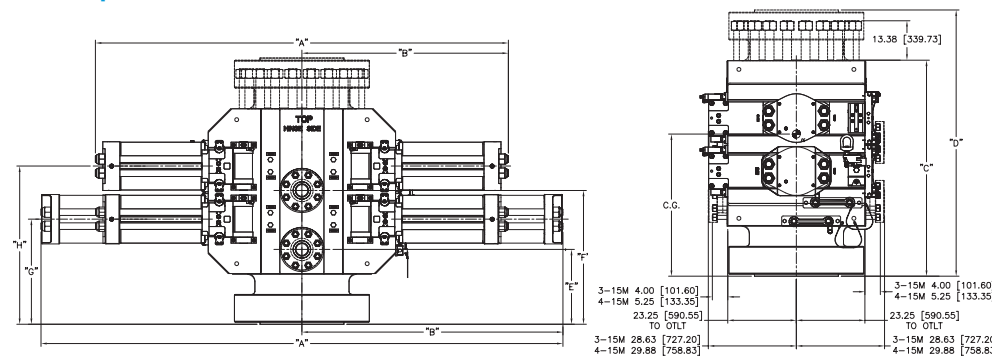
BOP | Triple



BOP Triple	Flange Configuration	Height		Cavity				Outlet		Weight (lbs)
		C	G	H	I	D	E	F		
	14X14X14	93.1	35.9	53.9	71.9	26.4	46.4	66.4	65,000	

Center of Gravity					
DIM	BOP	Door Configuration			± 1" (± 25mm)
		Upper	Middle	Lower	
C.G.	14X14X14	14" U2B	14" U2B	14" U2B	51.3 (1303)
C.G.	14X14X14	14" U2B ILF	14" U2B ILF	14" U2B ILF	51.3 (1303)
C.G.	14X14X14	14" PSLK 14" BSTR LFS	14" PSLK 14" BSTR LFS	14" PSLK 14" BSTR LFS	51.3 (1303)

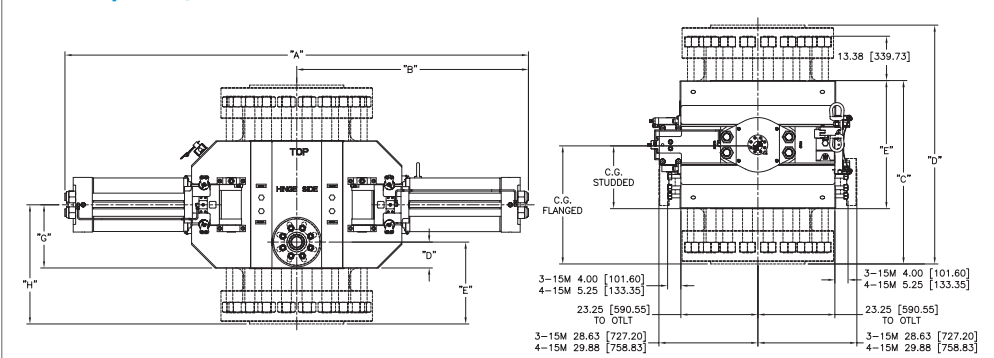
BOP | Double



BOP Double	Flange Configuration	Height		Cavity		Outlet		Weight (lbs)
		C	D	G	H	E	F	
	14X14 SXF	73.3	N/A	35.6	53.6	25.4	45.4	45,700
	14X14 FXF	N/A	89.8	35.6	53.6	25.4	45.4	51,850

Center of Gravity				
DIM	BOP	Door Configuration		± 1" (± 25mm)
		Upper	Lower	
C.G.	14x14 SXF	14" U2B	14" PSLK 14" BSTR LFS	41.8 (1062)
C.G.	14x14 SXF	14" U2B	14" U2B	42.0 (1067)
C.G.	14x14 SXF	14" MLNK 14" BSTR	14" MLNK 14" BSTR	42.1 (1069)
C.G.	14x14 FXF	14" PSLK 14" BSTR LFS	14" PSLK 14" BSTR LFS	42.2 (1072)
C.G.	14x14 FXF	14" U2B ILF	14" U2B ILF	42.0 (1067)

BOP | Single



BOP Single	Flange Configuration	Height			Cavity	Weight (lbs)
		C	D	E		
	14 SXS	N/A	N/A	41.0	N/A	39,000
	14 SXF	55.4	N/A	N/A	36.1	38,500
	14 FXF	N/A	72.12	N/A	36.1	62,100

Center of Gravity			
DIM	BOP	Door Configuration	± 1" (± 25mm)
C.G.	14 SXF	14" U2B ILF	36.1 (916)
C.G.	14 SXF	14" MNLK x 14" BSTR LFS	36.1 (916)
C.G.	14 SXF	14" PSLK x 14" BSTR LFS	36.1 (916)

18-15m NXT-M BOP Assembly Features

Operator Characteristics	14" MNLK	14" U2B	14" U2B ILF	14" MNLK 14" BSTR	14" MNLK 14" BSTR LFS	14" PSLK 14" BSTR LFS	14" PSLK 14" BSTR CVX
Operator Weight (w/ fluid)	2,590 lbs	3,040 lbs	3,070 lbs	3,455 lbs	3,655 lbs	3,950 lbs	3,840 lbs
OPEN	13.3 Gal	15.7 Gal	15.7 Gal	27.0 Gal	31.5 Gal	32.1 Gal	26.6 Gal
CLOSE	13.3 Gal	16.8 Gal	16.7 Gal	27.3 Gal	31.8 Gal	33.7 Gal	27.9 Gal
Max. Working Pressure	3,000 psi	3,000 psi	3,000 psi	3,000 psi	3,000 psi	3,000 psi	3,000 psi

Boltless BOP Doors

Shaffer™ NXT-M BOP Systems are unique in providing a means of significantly improving safety and efficiency in the critical path of activity. With the replacement of the door bolts in ram BOPs, National Oilwell Varco has eliminated the time consuming manual practice of using brute force to torque up numerous large door bolts. A number of benefits have been realized with this development:

- Reduced Weight (lightest BOP systems in the industry)
- Reduced Height (smallest BOP systems in the industry)
- Elimination of Manual Labor Under Time Pressure

Multi-Rams

Shaffer™ addresses the need for changing out rams on a tapered drillstring by offering Multi-Ram assemblies to cover a range of varying ODs of drill pipe:

Supported Inner Diameter Range:

3 1/2" - 5 7/8" 3 1/2" - 6 5/8"
 4 1/2" - 6 5/8" HT 5" - 7 5/8"

Hydraulic System

Hydraulic power to operate a Model NXT-M ram BOP can be furnished by any standard oil field accumulator system. Hydraulic passages drilled through the body eliminate the need for external manifold pipes between the hinges. Each set of rams requires only one opening and one closing line. There are two opening and two closing hydraulic ports, clearly marked, on the back side of the BOP. The extra hydraulic ports facilitate connecting the control system to the preventer. A standard hydraulic accumulator unit will close any Model NXT-M ram with rated working pressure in the well bore.

Ultra-Temp™

The conservative Shaffer™ testing procedures call for maintaining pressure and temperature for the duration of the test. Even with these stringent demands, the UltraTemp rams hold in witnessed testing. Shaffer™ UltraTemp ram assemblies are designed to safely withstand wellbore pressures up to 15,000 psi and extreme temperatures up to 350°F (177°C) for prolonged periods. This translates into rigsite capability to safely evacuate personnel and equipment in the event of a major high temperature, high pressure kick.

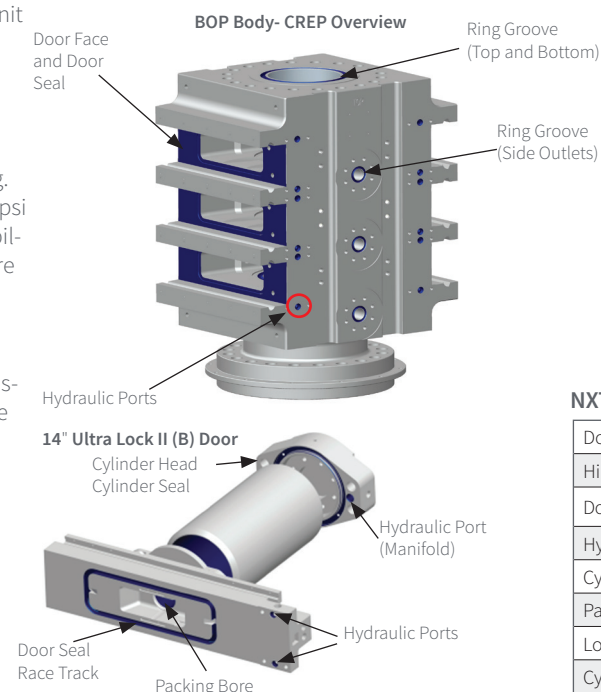
Low Force Blind Shear (LFS) Rams

The force required to shear casing is reduced by at least 50%. The LFS Ram sever 14", 113ppf, Q-125 casing at 2700 psi with a 22" operator. Multiple shear and seal sequences can be performed with the same assembly, including conditions where the drill pipe is hung-off below the shear ram cavity, enhancing reliability and extending the length of the BOP stack deployment.

- Less pressure required to shear
- Capable of centering pipe before shearing
- Shearing range
- Wireline to 14"
- Temperature Range: 30°F to 300°F (-1°C to 149°C)

Weldless Cavity

The introduction of no weld cavities in previous Shaffer™ BOP designs is carried on in the NXT-M models. This feature introduces replaceable parts to the cavity to eliminate extensive in-shop repairs and post weld heat treatments. The seal seat, skid plate and side pads can be replaced upgrading the BOP cavity tolerances to as new condition.



CREP - Corrosion Resistance Enhancement Package

NXT-M Body-CREP Level 7

Body Area	Inlay/Coating
Door Seal	Inconel
Top Seat	Inconel
Bottom Seat (reversible cavity only)	Inconel
Hydraulic Ports	Inconel
Left/Right Face	Phosphate
Lock Rod Groove	Phosphate
Ring Groove	Inconel

NXT-M Door-CREP Levels*

Door Area	CREP Level H	CREP Level J	CREP Level K
Hinge Pin Hole	Phosphate	Phosphate	Inconel
Door Seal Race Track	Inconel	Inconel	Inconel
Hydraulic Ports	Phosphate	Phosphate	Inconel
Cylinder Ports	Phosphate	Phosphate	Inconel
Packing Bore	Inconel	Inconel	Inconel
Lock Bar Groove	Phosphate	Phosphate	Phosphate
Cylinder Bore	Phosphate	Chrome	Inconel