



Product Datasheet

NXT® 18 3/4"

Shaffer® Ram Blowout Preventer

REFERENCE NXT® 18 3/4"	REFERENCE DESCRIPTION RAM BOP	
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1 GENERAL OVERVIEW

Shaffer® ram BOPs offer field-proven reliability in sealing around drill pipe and across open hole and for shearing drill pipe.

- Minimum maintenance space is required. Shaffer® rams have a low overall height compared with other ram preventers.
- Single, double and triple cavity models are available for working pressures of 5000, 10000, and 15000 psi. The double and triple models save space and weight by combining two or three ram compartments into one unitized body.
- Lock options include Poslock®, Ultralock®, and Manual-Lock systems.
- Full environmental H₂S trim, conforming to API and NACE requirements, is available.
- Self-draining body has a ram cavity with skids to support the rams and a sloped bottom which allows mud and sand to drain back into the well bore. This keeps the ram cavity free of caked mud and debris.
- Ram rubbers have a long life in routine drilling operations and in stripping.
- Ram can be changed easily without breaking or remaking hydraulic connections, even with pipe in the hole.
- Single piston hydraulic operators have a minimum number of working parts. This assures high reliability and low maintenance.
- Flanged, hubbed or studded connections are available for end connections and side outlets of most models.

2 SHAFFER® RAM BOP ORDERING INFORMATION

When ordering Shaffer® ram BOPs, specify the following:

1. Locking system required-Ultralock™ II, Poslock® or Manual-lock.
2. Single, double or triple cavity configuration.
3. Bore size, working pressure, end connections (studded, flanged or hubbed) and ring grooves. API ring grooves will be supplied, unless otherwise specified.
4. Side outlets required:
 - a. Size, working pressure, type (studded, flanged or hubbed) and ring grooves. API ring grooves will be supplied, unless otherwise specified.
 - b. Locations:
 - Below which cavity/cavities.
 - Front and/or back (hinge side).
5. Rams to be furnished.
 - a. Type:
 - Blind (complete shut-off).
 - Pipe or casing rams.
 - Shear rams.
 - Multi-Rams™.
 - b. Location of each set of rams.
6. Special features available:
 - a. Stainless steel or inconel lined ring grooves.
 - b. For low temperature certification (below -20°F), advise your Shaffer® sales representative of your requirements.
 - c. Full environmental H₂S (internal H₂S standard).
 - d. The no-weld cavity is standard on the NXT® ram BOP.

3 Nxt® TECHNICAL SPECIFICATIONS

3.1 Nxt® 18 ¾" Specifications					
Working Pressure, psi (bar)			15000 (1034)	10000 (689)	5000 (345)
Bore, in (mm)			18 ¾ (476)	18 ¾ (476)	18 ¾ (476)
Piston Size, in (mm)			14 (356)	14 (356)	14 (356)
Poslock®	L, in (mm)		137 ¼ (3486)	137 ¼ (3,486)	137 (3480)
	F, in (mm)		49 ⅝ (1260)	49 ⅝ (1260)	45 ¼ (1149)
	G, in (mm)		68 ⅝ (1743)	68 ⅝ (1743)	68 ½ (1740)
Booster (Poslock®)	L, in (mm)		204 ¾ (5200)	204 ¾ (5200)	See note 1
	F, in (mm)		73 ⅝ (1870)	73 ⅝ (1870)	See note 1
	G, in (mm)		104 ¼ (2648)	104 ¼ (2648)	See note 1
Manual-Lock	L, in (mm)		See note 1	See note 1	164 ⅜ (4175)
	F, in (mm)		See note 1	See note 1	51 ⅝ (1311)
	G, in (mm)		See note 1	See note 1	82 (2083)
Ultralock™ II B	L, in (mm)		137 ¼ (3486)	137 ¼ (3486)	137 (3480)
	F, in (mm)		49 ¾ (1263)	49 ¾ (1263)	45 ¼ (1149)
	G, in (mm)		80 ⅜ (2032)	80 ⅜ (2032)	68 ½ (1740)
X Min. angle to remove ram assembly, degrees			50	50	45
W width, in (mm)			61 ⅞ (1572)	61 ⅞ (1572)	52 ½ (1334)
H (Height), in (mm)	Single	Stud x Stud	44 ¼ (1124)	44 ¼ (1124)	34 (864)
		Flange x Flange	78 ½ (1994)	72 ¾ (1848)	56 ¼ (1429)
		Hub x Hub	61 ⅞ (1550)	61 ⅞ (1550)	-
	Double	Stud x Stud	55 ⅝ (1489)	55 ⅝ (1489)	46 ⅝ (1178)
		Flange x Flange	88 ¾ (2254)	88 ¼ (2242)	68 ⅝ (1743)
		Hub x Hub	72 ⅝ (1845)	72 ⅝ (1845)	-
	Triple	Stud x Stud	72 ⅝ (1845)	72 ⅝ (1845)	66 ¾ (1695)
		Flange x Flange	105 ¾ (2,686)	103 ⅝ (2635)	88 ¾ (2254)
		Hub x Hub	89 ¾ (2280)	89 ⅝ (2276)	-
D, in (mm)			28 ⅝ (727)	28 ⅝ (727)	28 ⅝ (727)
E, in (mm)			28 ⅝ (727)	28 ⅝ (727)	28 ⅝ (727)
I, in (mm)			20 (508)	20 (508)	20 (508)
J, in (mm)			17 ⅜ (441)	17 ⅜ (441)	9 ½ (241)
K, in (mm)	Single	Stud x Stud	15 ¾ (400)	15 ⅝ (381)	7 ⅜ (187)
		Flange x Flange	32 ⅜ (822)	32 ¼ (819)	18 ¼ (470)
		Hub x Hub	24 ⅞ (613)	24 ⅞ (613)	-
	Double	Stud x Stud	7 ¾ (197)	7 ¾ (197)	4 ¼ (108)
		Flange x Flange	24 ⅜ (873)	22 ⅞ (562)	15 ⅞ (384)
		Hub x Hub	16 ¼ (413)	16 ¼ (413)	-
	Triple	Stud x Stud	7 ¾ (197)	7 ¾ (197)	4 ¼ (108)
		Flange x Flange	24 ⅜ (873)	22 ⅞ (562)	15 ⅞ (384)
		Hub x Hub	16 ¼ (413)	16 ¼ (413)	-

NXT® 18 ¾" Specifications						
Working Pressure, psi (bar)			15000 (1034)	10000 (689)	5000 (345)	
Bore, in (mm)			18 ¾ (476)	18 ¾ (476)	18 ¾ (476)	
Piston Size, in (mm)			14 (356)	14 (356)	14 (356)	
M, in (mm)	Single	Stud x Stud	18 ¼ (464)	18 ¼ (464)	14 ½ (368)	
		Flange x Flange	35 ⅞ (892)	33 ¾ (857)	25 ⅞ (651)	
		Hub x Hub	26 ¾ (679)	26 ¾ (679)	-	
	Double	Stud x Stud	15 ⅝ (397)	15 ⅝ (397)	11 (279)	
		Flange x Flange	32 ¼ (819)	32 ¼ (819)	22 ⅞ (562)	
		Hub x Hub	24 ⅞ (613)	24 ⅞ (613)	-	
	Triple	Stud x Stud	15 ⅝ (397)	15 ⅝ (397)	11 (279)	
		Flange x Flange	32 ¼ (819)	32 ¼ (819)	22 ⅞ (562)	
		Hub x Hub	24 ⅞ (613)	24 ⅞ (613)	-	
N, in (mm)			7 ½ (190)	7 ½ (190)	7 ½ (190)	
O ² , in (mm)	3-inch (76-mm)		28 ⅝ (727)	28 ⅝ (727)	26 ⅞ (676)	
	4-inch (102-mm)		30 (762)	30 (762)	50 ¾ (1289)	
P ² , in (mm)	3-inch (76-mm)		26 ½ (673)	26 ½ (673)	26 ⅞ (676)	
	4-inch (102-mm)		29 ⅞ (759)	29 ⅞ (759)	53 ¾ (1365)	
Total Weight Without Rams, lbs (kg)	Single	Stud x Stud	28783(13056)	28783(13056)	20735 (9405)	
		Flange x Flange	38783 (17592)	35633 (16163)	24835 (11265)	
		Hub x Hub	31383 (14235)	30583 (13872)	-	
	Double	Stud x Stud	40060 (18170)	40060 (18170)	29485 (13374)	
		Flange x Flange	50060 (22707)	46910 (21278)	33585 (15234)	
		Hub x Hub	42660 (19350)	41860 (18987)	-	
	Triple	Stud x Stud	54095 (24537)	54095 (24537)	38235 (17343)	
		Flange x Flange	64095 (29073)	60945 (27644)	42335 (19203)	
		Hub x Hub	56695 (25716)	55895 (25354)	-	
1 Ram Assembly with Holder			565 (256)	565 (256)	536 (243)	
Door Assembly (1 each)			3270 (1483)	3270 (1483)	2780 (1261)	
Weight Breakdown, lbs (kg)	Body	Single	Stud x Stud	22243 (10089)	22243 (10089)	15175 (6883)
			Flange x Flange	32243 (14625)	29093 (13196)	19275 (8743)
			Hub x Hub	24843 (11269)	24043 (10906)	-
	Body	Double	Stud x Stud	26980 (12238)	26980 (12238)	18365 (8330)
			Flange x Flange	36980 (16774)	33830 (15345)	22465 (10190)
			Hub x Hub	29580 (13417)	28780 (13054)	-
	Body	Triple	Stud x Stud	34475 (15638)	34475 (15638)	21555 (9777)
			Flange x Flange	44475 (20174)	41325 (18745)	25655 (11637)
			Hub x Hub	37075 (16817)	36275 (16454)	-

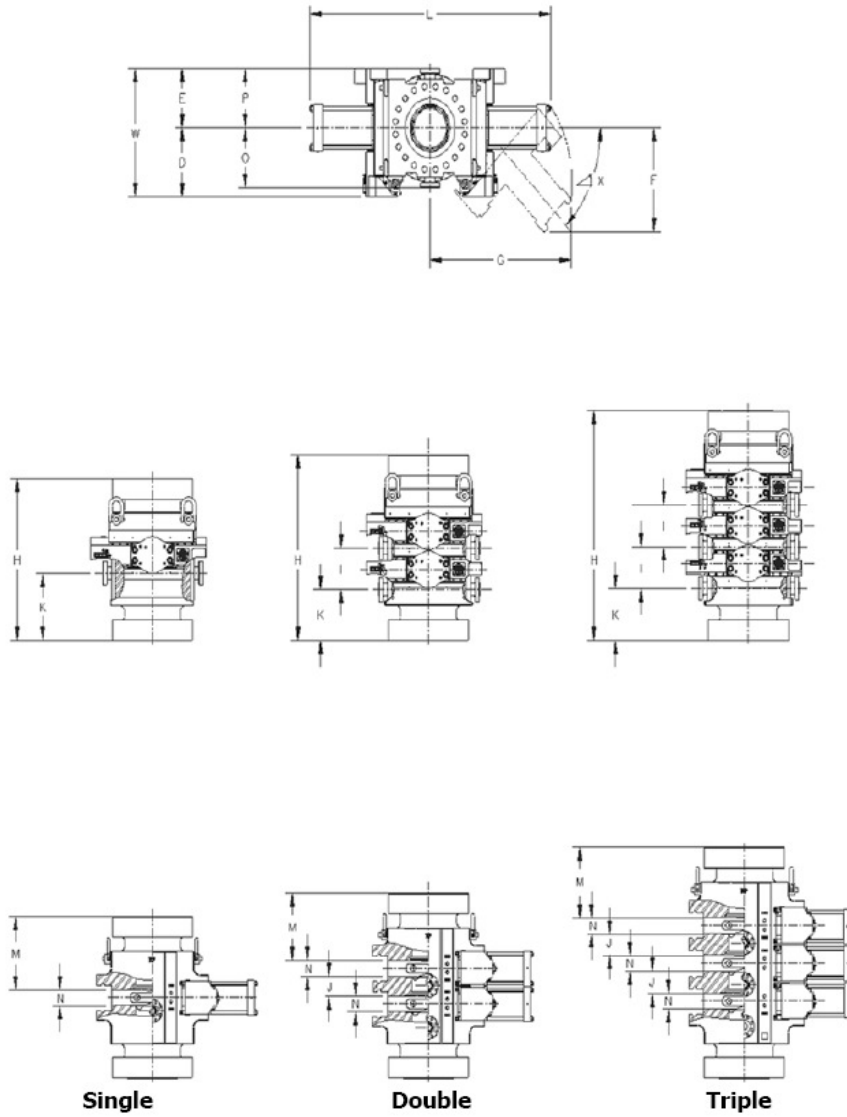
NXT® 18 ¾" Specifications				
Working Pressure, psi (bar)		15000 (1034)	10000 (689)	5000 (345)
Bore, in (mm)		18 ¾ (476)	18 ¾ (476)	18 ¾ (476)
Piston Size, in (mm)		14 (356)	14 (356)	14 (356)
Poslock®	Closing Ratio	13.94	13.94	10.85
	Opening Ratio	2.58	2.58	2.67
	Gal. to Close (L)	14.04 (53)	14.04 (53)	14.04 (53)
	Gal. to Open (L)	13.02 (49)	13.02 (49)	12.74 (48)
Booster (Poslock®)	Closing Ratio	25.49	25.49	25.49
	Opening Ratio	2.67	2.67	2.67
	Gal. to Close (L)	31.22 (118)	31.22 (118)	31.22 (118)
	Gal. to Open (L)	29.92 (113)	29.92 (113)	29.92 (113)
Manual-Lock	Closing Ratio	12.94	12.94	10.07
	Opening Ratio	2.58	2.58	2.67
	Gal. to Close (L)	13.14 (50)	13.14 (50)	13.14 (50)
	Gal. to Open (L)	13.14 (50)	13.14 (50)	12.84 (49)
Ultralock™ II B	Closing Ratio	13.94	13.94	10.85
	Opening Ratio	2.58	2.58	2.67
	Gal. to Close (L)	16.74 (63)	16.74 (63)	16.74 (63)
	Gal. to Open (L)	15.72 (60)	15.72 (60)	15.44 (58)
Maximum Ram Size, in (mm)		13.375 (340)	13.375 (340)	13.375 (340)

Notes:

1. To be developed.
2. For flanged side outlets. Studded or hubbed side outlets are shorter.

The product(s) described can be custom designed to meet the needs of our valued customers. For additional information about Single, Double or Triple NXT® BOP's (F x F, S x S, H x H, and S x F configurations) please contact your Sales Representative.

3.2 NXT® Dimensions



4 RAM OPTIONS

4.1 NXT® Pipe Rams

NXT® pipe rams are available for the following O.D.s. The NXT-D rams will support a 600,000-pound drill string load.

Pipe O.D., in (mm)	5000 psi 13 5/8"	5000 psi 18 3/4"	10000 psi 13 5/8"	10000 psi 18 3/4"	15000 psi 18 3/4"
C.S.O.	NXT	-	NXT	-	-
2 3/8 (60)	NXT/NXT-D	NXT	NXT/NXT-D	NXT	NXT
2 7/8 (73)	NXT/NXT-D	NXT	NXT/NXT-D	NXT	NXT
3 1/2 (89)	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D
4 (102)	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D
4 1/2 (114)	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D
5 (127)	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D
5 1/2 (140)	NXT/NXT	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D
6 5/8 (168)	NXT/NXT	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D	NXT/NXT-D
7 (178)	NXT	NXT	NXT	NXT	NXT
7 5/8 (194)	NXT	NXT	NXT	NXT	NXT
8 5/8 (219)	-	NXT	-	NXT	NXT
9 5/8 (244)	NXT	NXT	NXT	NXT	NXT
10 3/4 (273)	NXT	-	NXT	-	-
13 3/8 (346)	-	NXT	-	NXT	NXT

Note: For part numbers and sizes not listed above, please contact your local NOV Sales representative.

4.2 Multi-Rams™

Bore Size (Inches) Working Pressure (psi) Model	Pipe Size Range (Inches)	Pipe Suspension (000 lbs.)							
		2 3/8"	2 7/8"	3 1/2"	4"	4 1/2"	5"	5 1/2"	6 5/8"
18 3/4, 5000, SLX, NXT	3 1/2 - 5	--	--	200	200	400	600	--	--
18 3/4, 5000, SLX, NXT	5 - 7	--	--	--	--	--	300	300	600
18 3/4, 10000, SL,SLX, NXT	3 1/2 - 5	--	--	200	200	400	600	--	--
18 3/4, 10000, SL,SLX, NXT	5 - 7	--	--	--	--	--	300	300	600
18 3/4, 10000, SL,SLX, NXT	5 - 6 5/8	--	--	--	--	--	--	400	600
18 3/4, 15000, SL, NXT	3 1/2 - 5	--	--	200	200	400	600	--	--
18 3/4, 15000, SL,SLX,NXT	3 1/2 - 5 1/2	--	--	200	200	400	600	600	--
18 3/4, 15000, SL, NXT	5 - 7	--	--	--	--	--	300	300	600

Note: For part numbers and the sizes that are not listed above, please contact your local NOV Sales Representative.

4.3 NS™ Multi-Rams

- The Series NS™ Multi-Rams™ weigh approximately 1000 lbs (454.5 kg) per cavity and have a temperature range up to 180 °F (82 °C). These units are available for use in the 18¾" 5, 10, and 15000 psi NXT® and the 13 ⅝" 10000 psi NXT®, which is in development.

Series NS™ Multi-Rams- Available Sizes*						
Bore Size (in.) and Working Pressure (psi)	Pipe Size Range (in.)	Complete Assembly ¹	Rubber Assembly ²	Block	Face Seal	Top Seal
13 ⅝" – 10M psi NXT®	3 ½ – 5 ½	20025539	20016199	20025520	N/A	N/A
13 ⅝" – 15M psi NXT®	4 ½ - 7 ⅝	20026837	20026839	20026512	20023006	20023135
18 ¾" - 5/10/15M psi NXT®	3 ½ - 5 ½	20012089	126665	20012092	126670	126671
18 ¾" - 5/10/15M psi NXT®	3 ½ – 5 ⅝	20015911	20019152	20015868	20015867	20015872
18 ¾" - 5/10/15M psi NXT®	5 - 7	20012091	20017694	20012093	20017695	125994
1. Qty 2 required per cavity 2. Includes Face and Top Seal <i>*For up to date availability information and details of different sizes, please contact your local NOV representative.</i>						

4.4 CVX Shear Rams

Type CVX shear rams are available for 18 ¾" 5000 psi, 10000 psi, and 15000 psi NXT® NOV Shaffer® ram BOPs.

CVX Shear Ram Specifications	
Weight	968 lbs (439 kg) [set weight]
Shearing Capabilities	Ability to shear up to 9 ⅝" casing Ability to shear up to 6 ⅝" conventional and high strength drill pipe
Temperature Range	28° to 180 °F (-2.2° to 82.2 °C)

4.5 Casing Shear Rams

Shaffer® engineers have extended the capabilities of shear rams with a casing shear ram (Figure 8) which meets the specific cutting needs to physically shear casing tubulars up to 13 ⅝" in an 18 ¾" bore BOP.

4.6 UltraTemp™ (U/T- U/T-D) Rams

UltraTemp™ rams weigh 500 lbs (226.8 kg) per half and 1000 lbs (453.6 kg) per set. The working temperature range is up to 350°F (177°C). The available Ultra-Temp™ rams are shown in the following table.

UltraTemp™ Rams- Available Sizes					
Pipe OD Inches (mm)	5000 psi 18 ¾" NXT®	10000 psi 18 ¾" NXT®/SLX™	15000 psi 11" SLX™	5000 psi 13 ⅝" SLX™	15000 psi 18 ¾" NXT®/SLX™
3 ½ (89)	U/T-D	U/T-D	U/T	U/T-D	U/T-D
4 (102)	U/T-D	U/T-D	U/T	U/T-D	U/T-D
4 ½ (114)	U/T-D	U/T-D	U/T	U/T-D	U/T-D
5 (127)	U/T-D	U/T-D	U/T	U/T-D	U/T-D
5 ½ (140)	U/T-D	U/T-D	U/T	U/T-D	U/T-D
7 (178)	U/T	U/T	U/T	U/T-D	U/T-D
6 ⅝ (168)	U/T-D	U/T-D	U/T	U/T-D	U/T-D
9 ⅝ (244)	U/T	--	--	--	U/T