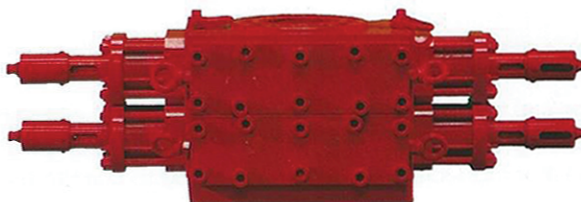


## Pressure Control Equipment

### BLOWOUT PREVENTERS

#### Pressure Control Equipment

Ram BOP's are available in single and double ram configurations with pressure ratings of 2000/5000 psi (13.8/34.5 MPa). The double ram BOP is less than 2 feet (610 mm) in height and weighs under 2300 pounds (1034 kilos) allowing use in the smallest rig cellars/sub-structures. Ram blocks are available, as standard, from blind thru 4 1/2" (114.3 mm). All wetted wellbore surfaces comply with the latest revision of NACE MR-01-75. Only standard tools required for maintenance. Double drilled 2000/5000 psi (13.8/34.5 MPa).



#### Optional Feature

- Stainless steel ring grooves for top and bottom end connections

7" SINGLE & DOUBLE RAM BOP				
	Double Ram		Single Ram	
Bore Size	7 1/16 in	179.4 mm	7 1/16 in	179.4 mm
Pressure Rating	2000/5000 psi	13.8/34.5 MPa	2000/5000 psi	13.8/34.5 MPa
End Connections	Studded top and bottom, double drilled for 2000/5000 (13.8 MPa/34.5 MPa bolt hole pattern)			
Working Pressure	2000 psi/13.8 MPa when used with exact same bolt hole pattern 5000 psi/34.5 MPa when used with exact same bolt hole pattern			
Test Pressure				
Operating Pressure	1500 psi	10.4 MPa	1500 psi	10.4 MPa
Hydraulic Fluid	.33 gal	1.25 liters	.33 gal	1.25 liters
	.35 gal	1.32 liters	.35 gal	1.32 liters
Piston Stroke	4.00 in	101.6 mm	4.00 in	101.6 mm
Weight	2250 lbs	1020.6 kg	1350 lbs	612.4 kg
Ring Joint	R-46	R-46	R-46	R-46
Ring Joint (Outlet)	R-24	R-24	N/A	N/A
Outlet Face to CL Bore	8.88 in	225.6 mm	N/A	N/A
Width	20.75 in	527.1 mm	20.75 in	527.1 mm
Height	20.19 in	512.8 mm	10.50 in	266.7 mm
Length	65.50 in	1663.7 mm	65.50 in	1663.7 mm
Bottom Connection to Bottom of Ram	5.85 in	148.6 mm	3.75 in	95.3 mm
Ram Block Height	2.99 in	75.9 mm	2.99 in	75.9 mm
Bottom Connection to Lower Outlet	2.99 in	75.9 mm	N/A	N/A
Lower Outlet to Upper Outlet	8.56 in	217.4 mm	N/A	N/A
Ram Block Sizes	Blind, 1.9" (48.3 mm); 2.37" (60.3 mm); 2.87" (73.0 mm); 3.50" (88.7 mm); 4.00" (101.6 mm) and 4.50" (114.3 mm)			





## Pressure Control Equipment

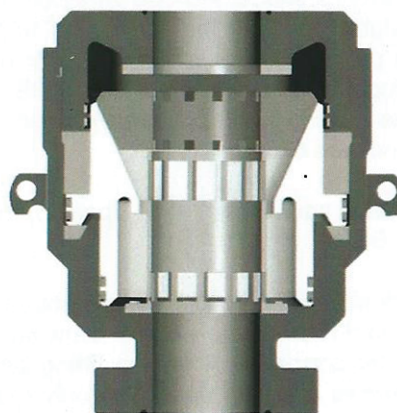
### ANNULAR BLOWOUT PREVENTERS

#### Annular Blowout Preventers

The Annular Blowout Preventers are compact BOP's which can reliably seal on most any shape or size in the preventer. It has proven to be able to seal on kelleys, drill pipe, tool joints, drill collars and casing. The Annular also provides the ability to safely strip drill pipe in and out of the hole.

#### Features

- Strong and simple construction
- Compact body saves between 15% and 20% in height over some competitive annual BOP's
- Only two hydraulic connections are required making the hydraulic system extremely simple
- Wear rings on moving parts reduce metal contact thus improving life
- Hydrogen Sulfide service is standard
- Reliable and field proven packing element provides long sealing life
- Trash ring prevents debris from dropping into the operating chambers during field replacement of packing rubber
- Meets all API 16A and NACE requirements



7 1/16", 9", 11", & 13 5/8" ANNULAR BLOWOUT PREVENTERS											
Bore Size	7 1/16 in				9 in		11 in		13 5/8 in		
Pressure Rating	3000 psi	20.7 MPa	5000 psi	34.5 MPa	3000 psi	20.7 MPa	5000 psi	34.5 MPa	5000 psi	34.5 MPa	
Width	29.3 in	745 mm	29.3 in	745 mm	35.5 in	902 mm	45.12 in	1146 mm	50.04 in	1271 mm	
Height	31.4 in	797 mm	31.4 in	797 mm	32.9 in	838 mm	42.68 in	1084 mm	45.28 in	1150 mm	
Weight	3351 lbs	1520 kg	3351 lbs	1520 kg	5287 lbs	2398 kg	10,060 lbs	4560 kg	14,680 lbs	6660 kg	
Hydraulic Fluid	Open	4 gal	15 liters	4 gal	15 liters	6 gal	22.7 liters	14.8 gal	56 liters	18.23 gal	69 liters
	Close	5.5 gal	21 liters	5.5 gal	21 liters	9 gal	34 liters	19 gal	72 liters	24.83 gal	94 liters
Operating Pressure	1500 psi	10.4 MPa	1500 psi	10.4 MPa	1500 psi	10.4 MPa	1500 psi	10.4 MPa	1500 psi	10.4 MPa	
Seal Ring	R-45	R-45	R-45	R-45	R-49	R-49	R-54	R-54	B-160	B-160	
Test Pressure	Per API 16 A										

