

Product Data Sheet

Compact Shear & Seal (CSS) Valve



UNITY'S COMPACT SHEAR AND SEAL (CSS) VALVE IS A HYDRAULICALLY OPERATED SINGLE RAM BOP, WHICH CAN BE USED DURING INTERVENTION OPERATIONS TO SHEAR VARIOUS CONVEYANCE SYSTEMS THEN SEAL THE WELLBORE.

The CSS is available as a 5-1/8" or a 6-3/8" assembly, with a pressure rating of 10,000 psi, a shear rating of 100,000 lbs and is suitable for slickline, hollow rod, wireline/ e-line, braided cable, coiled tubing up to 2-7/8" (80-130ksi) and e-coil.

We have reduced the size and weight of the CSS by housing the actuators and pistons within the assembly so the rams can be operated in a much smaller envelope than conventional BOPs. This helps to simplify wellsite handling and logistics and improves efficiency and operational safety by avoiding heavy lifting, access hatch restrictions and height constraints.



Features and Benefits:

- Compact design to permit use in tight spaces
- Can be fitted through the majority of rig hatches
- 50% lighter than conventional BOP designs
- Technology platform for Triple/Quad BOP
- Capable of shearing high loads and a variety of conveyance systems
- Easy in-field ram access without using a crane
- Replaceable rams for varying applications
- Replaceable, low-cost cutting blades
- Crossovers are available to integrate both size variants with clients' rig-up configurations
- Training in redress and maintenance can be provided
- When integrated with our Surface Intervention System (SIS), space and efficiency savings are multiplied, allowing safe and reliable rigless intervention from a confined space below deck.

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Specifications:		
Valve Type	Compact Shear and Seal – Single Ram	Compact Shear and Seal – Single Ram
Valve Size	5-1/8"	6-3/8"
Height	21.25"	22"
Length	34.20" (Pins retracted); 41.40" (Pins extended)	35.45" (Pins retracted); 42.65" (Pins extended)
Width	19.93"	22.90"
Weight	2,100 lbs	2,700 lbs
Max. Wellbore Pressure (MWP)	10,000 psi	10,000 psi
Max. Operating Pressure (MOP)	6,000 psi to close; 4,500 psi to open	6,000 psi to close; 4,500 psi to open
Operating Temperature	Temp Class U (-18 °C to +121 °C)	Temp Class U (-18 °C to +121 °C)
Trim Level	EE, other trims AOR	EE, other trims AOR
Service	H2S, Sour Service	H2S, Sour Service
Interface	5-1/8" 6BX 10K Face/ Flange Mount	6-3/8" Bore 6BX 7-1/16" 10K Face/ Flange Mount
Shear rating	100,000 [lbf]	
Shear Ram Position Indicator	Yes, through indicator pins	
Ram Locking Device	Yes, mechanical	
Applicable Standards	API 6A: 21st Edition API 16A: 4th Edition API 16ST: 2nd Edition API 16D: 3rd Edition Norsok D-002: 2020 Nace MR0175: 2015	
Qualification Level	API 16A PR1	

Example of cutting capability (additional capabilities are available on request):

Unity SIS Hollow Rod	1.75" OD x 0.325" WT (80 ksi min. yield)
Coil Tubing	2.875" OD x 0.156" WT (100 ksi min yield)
	2.875" OD x 0.204" WT (100 ksi min yield)
	2.875" OD x 0.275" WT (100 ksi min yield)
	2.875" OD x 0.156" WT (130 ksi min yield)
Slickline	0.125" OD (220 ksi min yield)
	0.160" OD (220 ksi min yield)