Technical Data Sheet: HSU 13-5/8" X 5,000 psi

All HEC HU Blowout Preventers are manufactured and tested according to HEC Quality Management Standards

Part Number: 135MHSU
Performance Requirement Level: PR1
Through Bore: 13-5/8"
Rated Working Pressure: 5,000 psi
Rated Hydraulic Pressure: 1,500 psi

Note: Hydraulic Pressure can be applied up to 3,000 psi. in emergency situations

Pipe Diameter Ranges: 2-3/8" to 10-3/4"

Temperature Ranges:

Metallic: -20 to 250°F
Elastomers: 20 to 200°F

Assembly Weights and Dimensions:

13-5/8" x 5M	Flange x Flange	Stud x Stud	Stud x Flange	Flange x Stud
Weight (lbs.) w/o Shear Bonnets	9,500	8,240	8,880	8,880
Height (in.)	33.812	17.75	25.906	25.656
Width, Bonnets Closed (in.) w/ locking screws Unlocked	147.00			
Width, Bonnets Closed (in.) w/ locking screws locked	131.00			
Width, Bonnets Open (in.) w/ locking screws unlocked	114.00			
Width, Shear Bonnets Closed (in.) w/ locking screws unlocked	169.25			
Width, Shear Bonnets Open (in.) w/ locking screws unlocked	156.00			

+ 1000lbs. with shear doors

Operating Capacities:

SIZE AND WORKING PRESSURE	CONFIGURATION	GALLONS TO OPEN RAMS (1 SET)	GALLONS TO CLOSE RAMS (1 SET)	LOCKING SCREW TURNS (EACH END)	CLOSING RATIO	OPENING RATIO
13-5/8" 5M, 10M	Standard	5.5	5.8	34	7:1	3.6:1
13-5/8" 5M, 10M	Large Bore Tandem	10.5	17.3	41.5	17.9:1	4.6:1

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Minimum Operating Pressure For a low Pressure Seal (MOPFLPS):

Ram Type	Operator Type	
	Standard	Large Bore & Tandem Booster
Blind	200	100
Pipe	250	125
VBR & Flex	750	293

Operating Pressure to effect a wellbore seal at rated working pressure:

Ram Type	Operator Type	
	Standard	Large Bore & Tandem Booster
Blind	950	475
Pipe	1,000	500
VBR & Flex	1,500	587

Elastomers:

Acrylonitrile Butadiene Rubber (NBR)
Nominal Operating Range: 20 to 200^{o}F

Test Results:

- Ram Access: 200 cycles with 10 pressure cycles
- Hang-Off
  - 11” and 13-5/8” HU Pipe Rams
    - Rated up to 600,000 lbs.
    - 5” Test mandrel with 18° taper
  - Note: Do not recommend hanging off on the smallest size pipe for VBR rams
- Fatigue Test: 546 open/close cycles, 78 pressure test
  - Ram Locking completed during fatigue testing
- Low Temperature Test: 3 pressure cycles at 20^{o}F
- Hot Temperature Test: 10 pressure cycles and 1 hour hold time at 200^{o}F
- Shear: Maximum shear pressure: 3000 psi.
  - Shear Doors with Tandem Boosters **must** be installed to shear pipe

Recommended Shear Operation:

- Tandem Boosters must be installed to shear
- Accumulator Pressure to Shear: 3000 psi.
- Horn Equipment recommends isolating well bore pressure using pipe rams and slip rams below the shear rams.
- It is recommended that shear rams be replaced and/or inspected after shearing operation by OEM.