Technical Data Sheet: HSU 11" X 10,000 psi

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

Part Number: 1110MHSU
Performance Requirement Level: PR1
Through Bore: 11"
Rated Working Pressure: 10,000 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 8-5/8"

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

Assembly Weights and Dimensions:

11" x 10M	Flange x Flange	Stud x Stud	Stud x Flange	Flange x Stud
Weight (lbs.) w/o Shear Bonnets	7,590	5,985	6,795	6,775
Height (in.)	35.688	17.626	26.782	26.532
Width, Bonnets Closed (in.) w/ locking screws Unlocked	110			
Width, Bonnets Closed (in.) w/ locking screws locked	98			
Width, Bonnets Open (in.) w/ locking screws unlocked	98			
Width, Shear Bonnets Closed (in.) w/ locking screws unlocked	137			
Width, Shear Bonnets Open (in.) w/ locking screws unlocked	190			

+800 lbs. with Boosters

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
11" 5M, 10M	Standard	3.4	3.5	27	7.3:1	3.7:1
11" 5M, 10M	Large Bore Tandem	6.8	12.2	34	19.3:1	3.7:1

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

Ram Type	Operator Type	
	Standard	Large Bore & Tandem Booster
Blind	200	76
Pipe	250	95
VBR & Flex	750	284

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

Ram Type	Operator Type	
	Standard	Large Bore & Tandem Booster
Blind	900	340
Pipe	950	359
VBR & Flex	1,500	567

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.