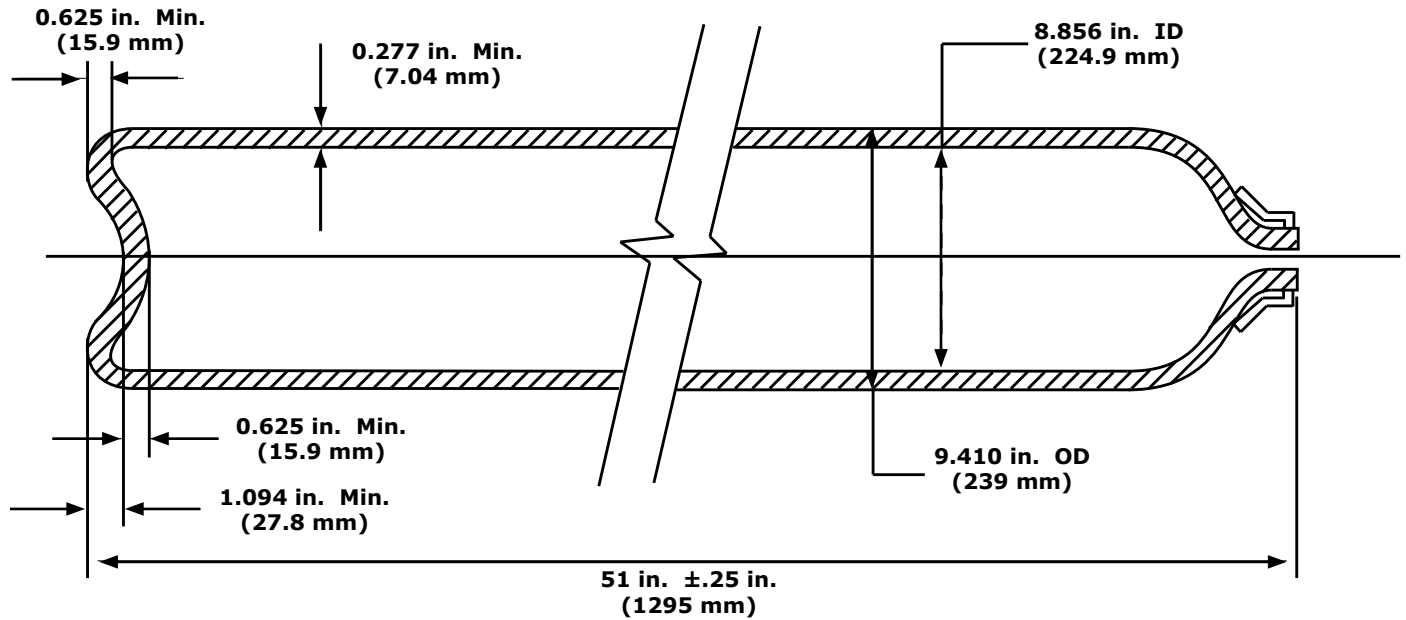


# UN/ISO-DOT Approved 4500 PSI (310 BAR) Steel Cylinder

Refillable Seamless Steel Cylinder for Gases Except CNG, Hydrogen, and Methane



Specifications: ISO 9809-2: 2000	
1. Service Condition:	
- Working Pressure:	4500 psi (310 bar)
- Hydraulic Test Pressure:	6743 psi (465 bar) (14.5 psi = 1 bar)
2. Material	
Cr-Mo-steel complying with the requirements of clause 6.2 of ISO 9809-2.	
3. Manufacture:	
Hot billet extrusion followed by hot drawing	
4. Heat Treatment: Quenched and Tempered	
- Austenitize:	~ 1650°F (889°C)
- Quenchant:	Water based polymer (temperature ≤ 140°F / 60°C)
- Temper:	~ 1065°F (573°C) (Min. 30 min. of temp)
5. Mechanical Properties: (at room temperature)	
- Tensile (Rg): 1100-1220 MPa (159.6-177 ksi)	
- Yield (Re): ≥ 935 MPa (135.6 ksi)	
- Elong (A): ≥ 12% (on 5.65 √s°)	
- Hardness Test: Each end of every cylinder	
- Flattening test: Flatten to 10 x t <sub>m</sub> without cracks	
- Charpy Test (-50°C, Trans): ≥ 35 J/cm <sup>2</sup> (avg.)	
- UT Flaw Detection: Each cylinder per ISO 9809-2	
- Batch Burst Test: P <sub>b</sub> ≥ 10443 psi (720 bar)	
6. Thickness Calculations : (ISO 9809-2:2000)	
$a = 0.5 \times D \left( 1 - \sqrt{\frac{(10FR_e - \sqrt{3} Ph)}{(10FR_e)}} \right)$	
Where:	
Ph = Test Pressure (bar) = 465 bar (6743 psi)	
D = External diameter of container = ø241.4 mm Max	
F = Lesser of 0.65/ (Re/Rg) or 0.77; Re/Rg ≤ 0.9	
= Lesser of 0.65/ 0.85 or 0.77 = 0.765 (for Re/Rg = 0.85)	
$a = 0.5 \times 241.4 \left( 1 - \sqrt{\frac{(10 \times 0.765 \times 935 - \sqrt{3} \times 465)}{(10 \times 0.765 \times 935)}} \right) = 7.00 \text{ mm (0.276")}$	
Note: the guaranteed min thickness = 7.04 mm (0.277") exceeds calculated min thickness.	

## Model - AC40040A

Approx. Length		Approx. Min. Water Capacity		Approx. Volume (Air)		Approx. Volume (Nitrogen)		Approx. Weight (Cyl - Collar)		Approx. Weight (w/ Cap - Valve)		Approx. Weight (w/ Crash Collar - Valve)	
in.	mm.	in <sup>3</sup>	lt.	cu. ft	cu. m.	cu. ft.	cu. m.	lbs.	kg.	lbs.	kg.	lbs.	kg.
51	1295	2750	45	437.1	12.38	424.1	12.01	148	67.1	150	68	152	68.9