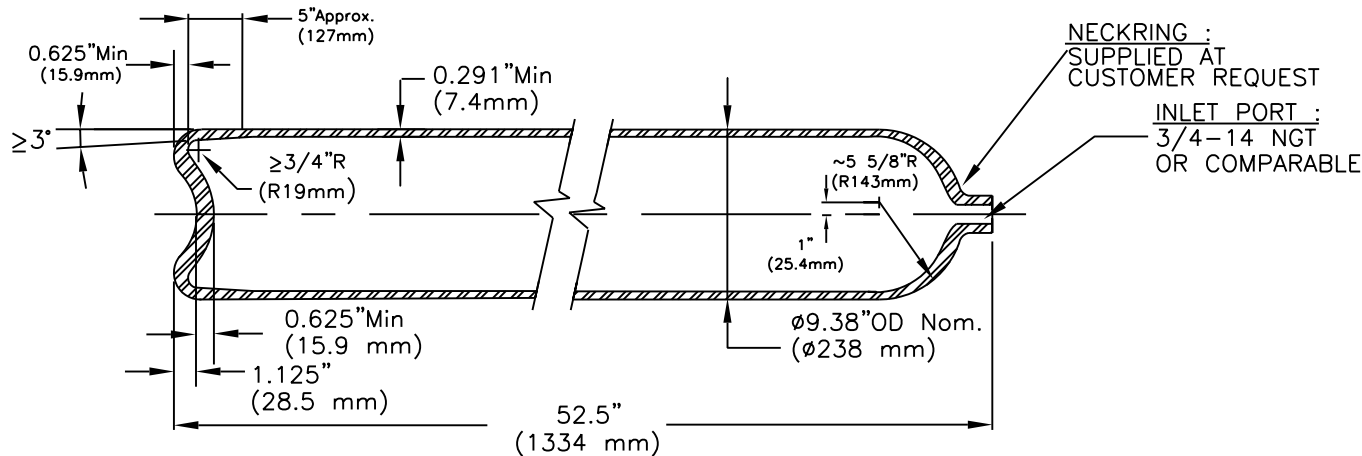


REV.	ECN - DESCRIP.	DATE	DRWN.	CHKD.	APP.
01	ECN - 2338	12/2/03	JM		BA
02	ECN - 2460	1/21/05	RS		



# DRAWING FOR REFERENCE ONLY

**NOTES (other requirements):**

- Pre-flaw pressure test each heat per requirements of this Exemption.
- Kic test each new heat of steel not previously tested :  $\geq 85 \text{ ksi} \sqrt{\text{in}}$
- REE value to be stamped on cylinder must be determined in accordance with CGA pamphlet C-5, at an ave. effective wall stress of 100,000 psi.

**SPECIFICATION:** DOT-E10869-5000 / TC SU4369-344

**MODEL:** 8HP535

<p><b>1. Principal Elements:</b></p> <ul style="list-style-type: none"> <li>- Min water volume: 2750 in<sup>3</sup> (45 liter)</li> <li>- Approx. cylinder wt. 158 lbs. (71.7 kg) w/o fittings</li> <li>- DOT Service pressure: 5000 psi (344 bar)</li> <li>- TC Service pressure: 344 bar</li> <li>- Test pressure: 7500psi (517 bar)</li> </ul>	<p><b>4. Manufacture:</b></p> <p>Hot billet pierced followed by hot drawing.</p>
<p><b>2. Material:</b></p> <p>Alloy steel, A.I.S.I. 4130 Modified.</p>	<p><b>5. Mechanical Properties:</b></p> <ul style="list-style-type: none"> <li>- Tensile: 155,000/175,000 psi (1069/1206 MPa)</li> <li>- Elong.: <math>\geq 12\%</math> (on 2" gauge)</li> <li>- Flattening: to 10xt without cracks</li> <li>- Charpy: (at -60°F, 1/2 size tran. specimen) <ul style="list-style-type: none"> <li>- avg. 3 spec. : 13 ft-lb (45 J/cm<sup>2</sup>)</li> <li>- individual : 10 ft-lb (35 J/cm<sup>2</sup>)</li> </ul> </li> <li>- Hardness test (each cyld.) : <math>\leq \text{Rc } 40</math></li> <li>- UT flaw detection (each cyld.) : Reject flaws <math>\geq 5\%</math> of tmin.</li> </ul>

**Formula for wall stress calculations:**

$$S = \frac{P(1.3D^2 + 0.4d^2)}{(D^2 - d^2)}$$

S = Wall stress, psi  
P = Minimum test pressure, psi  
D = Outside diameter, inch  
d = Inside diameter, inch

$$S = \frac{7500(1.3(9.38)^2 + 0.4(8.798)^2)}{(9.38)^2 - (8.798)^2}$$

$$S = 103,034 \text{ psi (710.4 MPa)}$$



**NORRIS CYLINDER COMPANY**  
P.O. BOX 7486 LONGVIEW, TEXAS 75607

**SEAMLESS STEEL CYLINDER,  
FOR NON-CORROSIVE PERMANENT  
GASES, MODEL 8HP535**

SCALE	NOT TO SCALE	DRAWING NO.	REV.
DWN. BY	R.S	6/30/03	901A-A-9630 02
CHK'D BY	R.S	6/30/03	
APP'D BY	B.A	6/30/03	SHEET NO. 1 OF 1 SHEETS