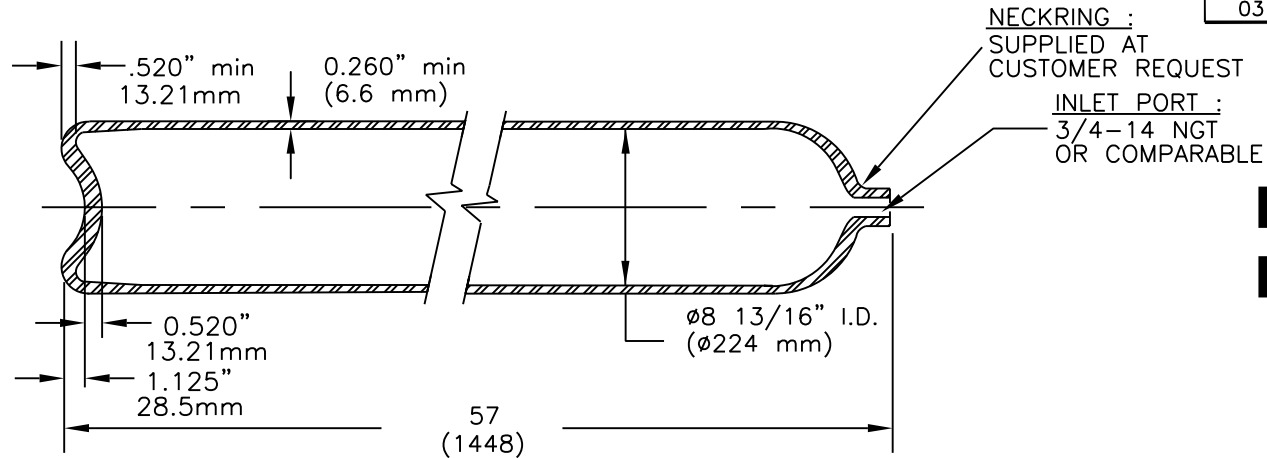


REV.	ECN - DESCRIPT.	DATE	DRWN.	CHKD.	APP.
01	1194	1/24/94	MB	RS	BA
02	1248	3/29/95	MB	RS	BA
03	1558	8/13/97			



## 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 to be calculated per CGA pamphlet C-5 and stamped on each cylinder.

SPECIFICATION: DOT - E10869-4500/ TC-SU4369-310

MODEL: 8HP550

<b>1. Principal Elements:</b> <ul style="list-style-type: none"> <li>- Min water volume: 3058 in<sup>3</sup> (50 liter)</li> <li>- Approx. cylinder wt. w/o fittings: 155 lbs. (70.3 kg)</li> <li>- DOT Service pressure: 4500 psi</li> <li>- TC Service pressure: 310 bar</li> <li>- Test pressure: 6750 psi (465.4 bar)</li> </ul>	<b>4. Manufacture:</b> Hot billet pierced followed by hot drawing.
<b>2. Material:</b> Alloy steel, A.I.S.I. 4130 modified.	<b>5. Mechanical Properties:</b> <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 -50°, 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 flow detection (each cyld.): Reject flaws <math>\geq 5\%</math> of tmin.</li> <li>- See NOTES for other requirements</li> </ul>
<b>3. Heat Treatment:</b> Q & T	

Formula for wall stress calculations:  $S = P(1.3D^2 + 0.4d^2)/(D^2 - d^2)$

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

$$S = \frac{6750(1.3(9.333)^2 + 0.4(8.813)^2)}{(9.333)^2 - (8.813)^2}$$

S = 103,228 psi (711.8 MPa)



**NORRIS CYLINDER COMPANY**

P.O. BOX 7486 LONGVIEW, TEXAS 75607

SEAMLESS STEEL CYLINDER,  
MODEL 8HP550, FOR NONLIQUEFIED,  
NONCORROSIVE, COMPRESSED GASES

SCALE	NOT TO SCALE	DRAWING NO.	REV.
DWN. BY	MBENHAM	7/2/93	901B-B-9170 03
CHK'D BY	RSHAFKEY	7/2/93	
APP'D BY	BARNOLD	7/2/93	SHEET NO. 1 OF 1 SHEETS