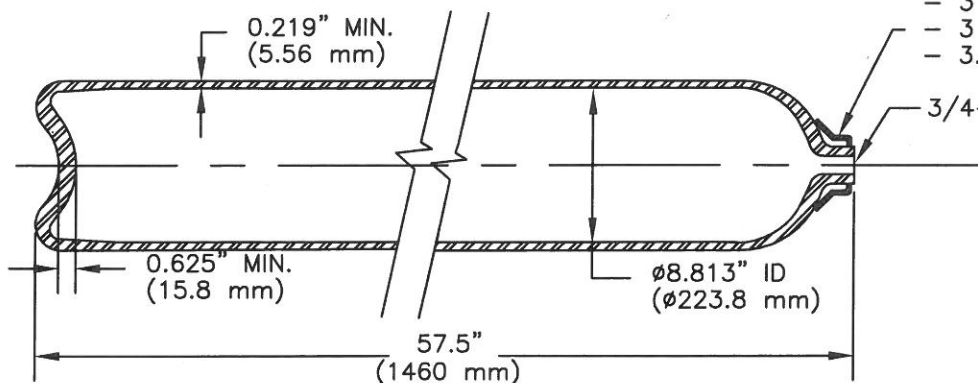


**Optional Neck Ring Threads**

- 3 1/8-11 UNS Thd.
- 3 1/8-7 UNS Thd.
- 3.147-11 UNS Thd.

3/4-14 NGT



REV.	ECN - DESCRIP.	DATE	DRWN.	CHKD.	APP.
01	1187 TC	1/10/94	SJ	RS	BA
02	ECN # 1516	6/17/97	SJ	RS	BA
03	1833	9/22/99			
04	2797	10/21/08	JJM	JJM	

# DRAWING FOR REFERENCE ONLY

<b>SPECIFICATION:</b> DOT-SP 9370-3330/TC-SU4210-229		<b>3. Manufacture:</b> Hot billet pierce followed by hot drawing.
<b>MODEL:</b> 8BC440		<b>4. Heat Treatment:</b> Q & T
<b>1. Principal Elements:</b> - Min. water capacity: 114.7 lbs (52 kg) - Min. water volume: 3181 in <sup>3</sup> (52 liter) - Approx. cylinder wgt: 144 lbs (65.3 kg) - DOT Service pressure: 3330 psi - TC Service pressure: 229 bar - Test pressure: 5000psi (344.8 bar)	<b>5. Norris Standard Mechanical Properties:</b> - Tensile: 135,000-155,000psi (930-1069MPa) - Elong.: ≥ 16% (on 2" gauge) - Hardness ≤ R <sub>c</sub> 36 - Charpy: 25.0 ft-lbs (avg. 3 specimen) 21.0 ft-lbs (individual minimum) (AT -60°F, 1/2 size, longitudinal specimen)	
	<b>2. Material:</b> Chrome-Moly steel, (A.I.S.I. 4137)	

**Notes:**

- Ultrasonic flaw check required for each cylinder.
- After final heat treatment, each cylinder must be hardness tested on the cylindrical section.
- REE to be calculated per CGA C-5 and stamped on each cylinder.

<b>D.O.T. Wall Stress Calculations:</b>		$S = P(1.3D^2 + 0.4d^2)/(D^2 - d^2)$
S = Maximum wall stress, psi	$s = \frac{5000 [1.3(9.251)^2 + 0.4(8.813)^2]}{(9.251)^2 - (8.813)^2}$	
P = Test pressure, psi	$s = 89,941 \text{ psi (620.1 MPa)}$	
D = Outside diameter, inch		
d = Inside diameter, inch		
Required Minimum tensile:	$= \frac{89,941}{0.67} = 134,241 \text{ psi (925.6 MPa)}$	



**NORRIS CYLINDER COMPANY**

P.O. BOX 7486 LONGVIEW, TEXAS 75607

## ULTRALIGHT, REFILLABLE SEAMLESS STEEL GAS CYLINDER, MODEL 8BC440

SCALE	NOT TO SCALE	DRAWING NO.	REV.
DWN. BY	M BENHAM	12/10/91	901A-B-9115 04
CHK'D BY	R. SHAFKEY	1/28/92	
APP'D BY	B. ARNOLD	1/28/92	SHEET NO. 1 OF 1 SHEETS