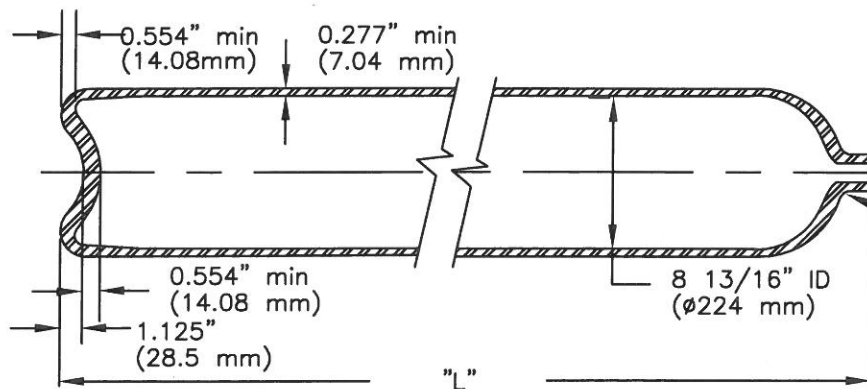


DRAWING FOR REFERENCE ONLY

REV.	ECN / DESCRIPTION	DATE	DRWN.	CHKD.	APP.
01	ISO WALL CALC./ REE	3/16/11	JJM		



INLET PORT :
 3/4-14 NGT (8HP500C-3),
 1 -11 1/2 NGT (8HP500C-1),
 25E (8HP500C-25E),
 OR COMPARABLE

NECKRING :
 SUPPLIED AT
 CUSTOMER REQUEST

SPECIFICATION: DOT - SP 10869-4500 / TC-SU4369-310

MODEL: SEE TABLE

1. Principal Elements:

- DOT Service pressure: 4500 psi
- TC Service pressure: 310 bar
- Test pressure: 6750 psi (465.4 bar)

2. Material:

Alloy steel, A.I.S.I. 4130 Modified. Per
 Norris' 4133M4 specification EO-A6

3. Heat Treatment: Q & T

4. Manufacture:

Hot billet pierced followed by hot drawing.

5. Mechanical Properties:

- Tensile: 155,000/175,000 psi (1069/1206 MPa)
- Elong.: $\geq 12\%$ (on 2" gauge)
- Flattening: to 10xt without cracks
- Charpy: (at -50°C, 1/2 size tran. specimen)
 - avg. 3 spec. : 13 ft-lb (45 J/cm²)
 - individual : 10 ft-lb (35 J/cm²)
- Hardness test (each cyl.) : $\leq Rc 40$
- UT flaw detection (each cyl.) :
 Reject flaws $\geq 5\%$ of tmin.

MODEL	LENGTH 'L'		Min WATER CAPACITY		APPROX. WGT. W/O FITTINGS		REE
	MM	IN	LITERS	IN ³	KG	LBS	
8HP575C	1492	58.75	52.6	3217	79.4	175	TBD
8HP550C	1448	57	50	2750	75.8	167	TBD
8HP500LC	1347	53	46.7	2854	69.8	154	333
8HP500C	1295	51	45.0	2750	67.2	148	327

NOTES (other requirements):

- Rejection Elastic Expansion:
 Determined in accordance with CGA pamphlet C-5.

DOT 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

$$= \frac{6750(1.3(9.367)^2 + 0.4(8.813)^2)}{(9.367)^2 - (8.813)^2}$$

$$S = 97,265 \text{ psi (670.6 MPa)}$$

ISO 9809-2 Thickness Calculations included for Harmonization:

Ph = Test Pressure (bar) = 465.4 bar (6750 psi)


D = External diameter of container = $\varnothing 241.4$ 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)

$$a = 0.5xD \left(1 - \sqrt{\frac{10FRe - \sqrt{3} Ph}{10FRe}} \right) \quad \boxed{= 7.00 \text{ mm (0.276")}}$$

NOTE: 'a', the guaranteed min thickness = 7.04 mm (0.277") exceeds calculated min thickness, a.



NORRIS CYLINDER COMPANY
 4818 WEST LOOP 281 LONGVIEW, TEXAS 75603 USA

**SEAMLESS STEEL CYLINDERS FOR
 DOT SP-10869 AND TC SU 4369
 4500 PSI / 310 BAR**

SCALE	NOT TO SCALE	DRAWING NO.	REV.
DWN. BY	J. MONCRIEF	2/5/10	901A-A-9835 01
CHK'D BY	SAM	2/5/10	
APP'D BY			

SHEET NO. 1 OF 1 SHEETS