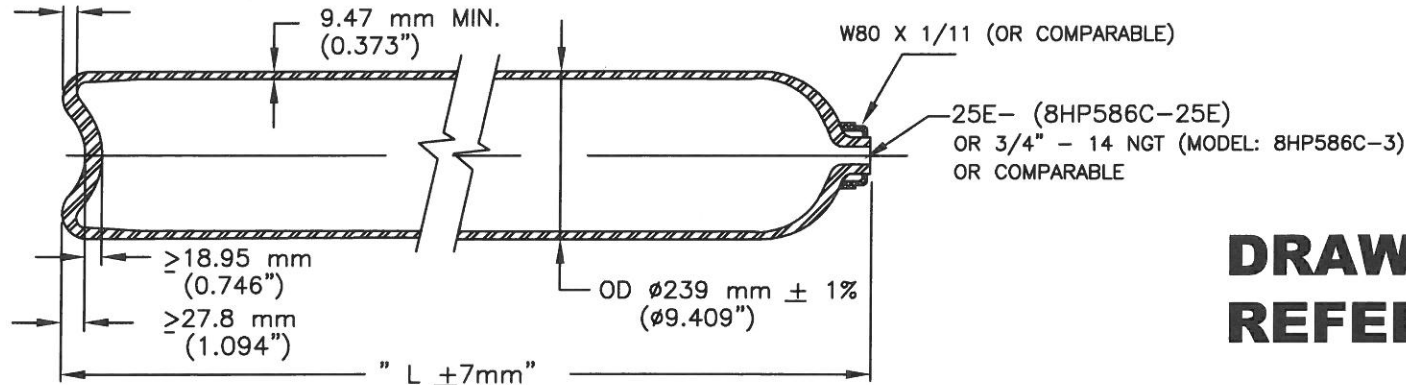


≥18.95 mm
(0.746")



REV.	ECN - DESCRIPT.	DATE	DRWN.	CHKD.	APP.
01	2940	2/5/10	JJM		

DRAWING FOR REFERENCE ONLY

SPECIFICATION: ISO 9809-2: 2000

1. Service Conditions:

- Working pressure: 414 bar (6003 psi)
 - Hydraulic test pressure: 621 bar (9005 psi)
- (1 bar = 14.5 PSI)

2. Material:

Cr-Mo-steel complying with the requirements of clause 6.2 of ISO 9809-2. Norris 4133M4

3. Manufacture:

Hot billet extrusion followed by hot drawing

4. Heat Treatment: Quenched and Tempered

- Austenitize: ~899°C (1650°F)
- Quenchant: Water based polymer (temperature ≤ 60°C(140°F))
- Temper: ~565°C (1050°F) (Min. 30 minutes at 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 $\sqrt{S_0}$)
- Hardness test: Each end of every cylinder
- Flattening test: Flatten to 10 x t_m without cracks
- Charpy test (-50°C, Trans): ≥ 35 J/cm² (avg.)
- UT flaw detection: Each cyld. per ISO 9809-2
- Batch burst test: Pb ≥ 994 bar (14,413 psi)

6(a). Thickness Calculations: (ISO 9809-2: 2000)

$$a = 0.5xD \left(1 - \sqrt{\frac{(10FRe - \sqrt{3} Ph)}{(10FRe)}} \right)$$

Where:

- Ph = Test Pressure (bar) = 621 bar (9,005 psi)
- D = External diameter of container = ϕ 241.4mm 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)

$$a = 0.5 \times 241.4 \left(1 - \sqrt{\frac{(10 \times 0.765 \times 935 - \sqrt{3} \times 621)}{(10 \times 0.765 \times 935)}} \right) = 9.45 \text{ mm (0.372")}$$

NOTE: a', the guaranteed min thickness = 9.47 mm (0.373") exceeds calculated min thickness, a.

MODEL	LENGTH 'L'		Min WATER CAPACITY		APPROX. WGT. W/O FITTINGS	
	MM	IN	LITERS	IN ³	KG	LBS
8HP675C	1505	59.25	50.0	3050	99.3	219
8HP586C	1320	52.0	43.3	2641	88.4	195
*Vmin	698	27.5	20.0	1220	52.15	115
*Vmax	1978	77.875	67.4	4112	129.3	285

*Note: Vmin and Vmax represent the range covered by the same design family. 8HP586C is the Type Approval cylinder.



NORRIS CYLINDER COMPANY

4818 WEST LOOP 281 LONGVIEW, TEXAS 75603 USA

REFILLABLE SEAMLESS STEEL
CYLINDER FOR PERMANENT GASES
PER ISO 11114-1 FOR 239 mm OD

SCALE		NOT TO SCALE	DRAWING NO.		REV.
DWN. BY	JJM	2/19/09	901A-A-9771		01
CHK'D BY	JJM	4/15/09			
APP'D BY	FG	7/23/09	SHEET NO. 1	OF 1	SHEETS