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TANK TYPE	MOUNT	LOCATION
Diaphragm	Lugs, 3	Girth

This is a 16.5-inch spherical pressure vessel constructed of 6AL-4V titanium. Positive fuel expulsion is provided by a reversible ethylene-propylene terpolymer (AF-E-332) rubber diaphragm retained (welded in) at the sphere mid-plane. Mounting is accomplished by three (3) lugs parallel with and adjacent to the sphere mid-plane.

ISO 9001 & AS 9100 REGISTERED

ATK Part Number 80271-3

SIZE: 16.5-inch ID Sphere
SIZE: 419-mm

APPLICABLE DOCUMENTS

Qualification Test Procedure, Note 4	50-000216
Acceptance Test procedure	50-000357
Qualification Test Report, Note 4	56-000077
Cleaning	CPP 3532

DIAPHRAGM INFORMATION

Diaphragm P/N		80-271007-1
Diaphragm Mold P/N		SK 666
Diaphragm Gross Wt		0.88 (.339 Kg)
Diaphragm Matl Type		AF-E-332
Diaphragm, Material	Note 2	90-000075
Diaphragm Processing	Note 2	90-000087
N-Ray Inspection		1002

TANK CHARACTERISTICS

Operating Pressure, psig	300	Total Volume, ci	2,280
Proof Pressure, psig, Note 7	900	Prop Volume, ci	1,520
Cryo Proof, psig	NA	Max Design Wt, lbs	11.4
Burst Pressure, psig	1,200	Minimum Wall, inch	0.031

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	20.68	Total Volume, l	37.36
Proof Pressure, bar, Note 7	62.05	Prop Volume, l	24.91
Cryo Proof, bar	NA	Max Design Wt, Kg	5.17
Burst Pressure, bar	82.74	Minimum Wall, MM	0.7874

FORGINGS

FORGINGS P/N	SUPPLIER	Die No
80-276061-1 (2)		

RING FORGING	RING SIZE, (Rough Machined)
80-271060-3, Lug	19.38 +.06 OD x 17.19 -.06 ID x .87 Lg
80-214065-1, Retainer	16.75 +.06 OD x 15.5 -.06 ID x 1.4 +/-.06 Lg

TUBE TYPE AND SIZE

TITANIUM	SIZE
80-271003-3, Inlet	.250 OD x .020 Wall
80-271002-3, Outlet	.250 OD x .020 Wall
	(6.35 x .5 MM)

ACCEPTANCE TESTS

Preliminary Examination of Product
Pre-Proof Volı
Proof Pressure
Post-Proof Volume
Expulsion Efficiency
Internal (Diaphragm) Leak High and Low Pressure
External Leakage
Final Examination of Product
Cleanliness

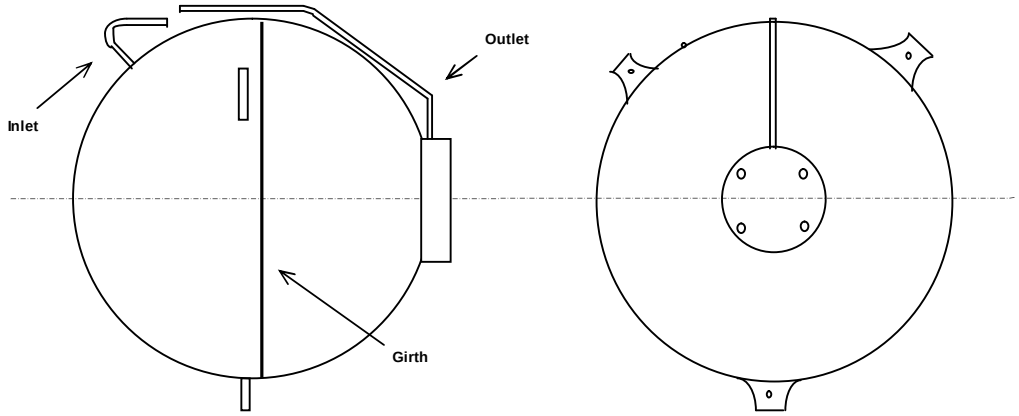
QUALIFICATION TESTS

Qaul by similarity on 80271-1

Notes:

1: Some tooling owned by Fairchild
2: Proprietary Document
3: Forging qualified under P/N 80157-1
4: This tank was qualified under P/N 80271-1
5: Actual burst pressure was 1417 psig (97.69 Bar)
6: This design has a factor of 4:1
7: This pressure was used on qual tank only
Flight tank proof pressure was 970 psig (66.87 Bar)
8: Original Job No. of the -1 tank is 7821
9: TOPEX is Ocean Topography Experiment
10: Fracture Critical

SKETCH NOT TO SCALE



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