TANK TYPE	MOUNT	LOCATION
DIAPHRAGM	BOSSES	POLAR

NORTHROP GRUMMAN

This is a 21-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 on polar bosses.

Part Number 80273-3

SIZE: 20.83-inch ID Sphere
SIZE: 529-MM

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000210
Qualification Test Procedure	50-000213
Reliability Prediction, Failure	54-000040
Material & Processes List	54-000108
Forging Qualification Rpt, **Note 5**	55-000087
Qualification Test Report	56-000076
Cleaning	CPP 3002, 3003

DIAPHRAGM INFORMATION

Diaphragm P/N	80-273007-1
Diaphragm Mold Tool Number	T-1976
Diaphragm Gross Weight	2.06 (.93 Kg)
Diaphragm Material Type	AF-E-332
Diaphragm, Material, Note 2	90-000100
Diaphragm Processing, Note 2	90-000099
N-Ray Inspection Procedure	1002

Notes:

1: Tooling owned by Boeing
2: Proprietary Document
3: Fracture Mechanics proof pressure
4: System proof is 860 psia (59.29 Bar) @ 129 degrees
5: Each new heat of material requires a forging qual
6: Fracture Critical

PROGRAM INFORMATION

Program	IUS
Customer	BOEING
Customer P/N	290-21007-1
Original Job No.	7801
Customer Installed Device	No
Customer Controlled Device	No

TANK CHARACTERISTICS

Operating Pressure, psig	430	Total Volume, ci	4,570
Proof Pressure, psig, Note 3	1,183	Prop Volume, ci	3,370
Cryo Proof, psig	NA	Max Design Wt, lbs	27.0
Burst Pressure, psig	1,720	Minimum Wall, inch	0.059

TANK CHARACTERISTICS (Metrics)

Operating Pressure, Bar	29.65	Total Volume, l	74.89
Proof Pressure, Bar, Note 3	81.56	Prop Volume, l	55.23
Cryo Proof	NA	Max Design Wt, Kg	12.25
Burst Pressure, Bar	118.59	Minimum Wall, MM	1.499

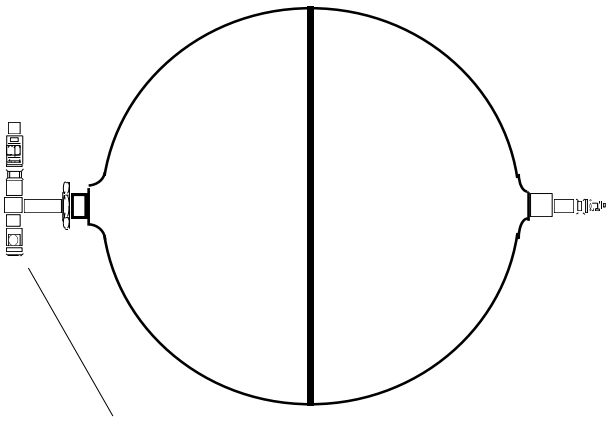
FORGINGS

FORGINGS P/N	SUPPLIER	Die No
80-273063-1 (2)	ARCTURUS	3291

RING FORGING	RING SIZE, (Rough machined)
80-273063-1, Retainer	20.62 +.06 OD x 19.31 -.06 ID x 1.4 +.06 Lg

TUBE TYPE AND SIZE

TRANSITION	SIZE
80-273009-1	.625 OD x .065 Wall (15.87 x 1.65 MM)



Fill & Drain Valves

ACCEPTANCE ENVIRONMENTAL TESTS

Random Vibration

ACCEPTANCE TESTS

Examination of Product
Weight Determination
Pre-Proof Volume
Volume Determination
Internal Leakage
External Leakage
Expulsion Efficiency
Random Vibration
Internal Leakage
External Leakage
Cleanliness Verification

QUALIFICATION TESTS

Acceptance Test
Vibration
Cleanliness
Internal Leakage
External Leakage
Isolation Valve Functional
External Leakage
Hydrazine Compatiblity
Temperature
Internal Leakage
Acceleration
Internal Leakage
External Leakage
Shock
Internal Leakage
External Leakage
Slosh
Internal Leakage
Internal Vacuum
Differential Pressure
Internal Leakage
Expulsion Cycling
Expulsion Efficiency
Internal Leakage
Tank Shell Cycling
Proof Pressure
External Leakage
Drop Test
Burst Test

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