



TANK TYPE Diaphragm	MOUNT Bosses	LOCATION Polar
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This is a 28-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.

ATK Part Number 80325-1

SIZE: 28-inch ID Sphere
SIZE: 711-mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000319
Cleaning	CPP 3650

DIAPHRAGM INFORMATION

Diaphragm P/N	80-228007-1
Diaphragm Mold P/N	T-1669
Diaphragm Gross Wt	4.16 (2.02 Kg)
Diaphragm Matl Type	AF-E-332
Diaphragm, Material	Note 2 90-000075
Diaphragm Processing	Note 2 90-000087
N-Ray Procedure	1002

TANK CHARACTERISTICS

Operating Pressure, psig	450	Total Volume, ci	11,350
Proof Pressure, psig	675	Prop Volume, ci	8,060
Cryo Proof, psig	NA	Max Design Wt, lbs	44.0
Design Burst Pressure, psig	900	Minimum Wall, inch	0.047
Actual Burst Pressure, psig	1,321		

ACCEPTANCE TESTS

- Preliminary Examination of Product
- Pre-Proof Volume
- Proof Pressure Test
- Post-Proof Volume
- Pressure Drop and Expulsion Efficiency
- External Leakage
- Low Pressure Diaphragm Ga
- Final Inspection of Product
- Cleanliness

TANK CHARACTERISTICS (Metrics)

Operating Pressure, Bar	31.03	Total Volume, l	186.0
Proof Pressure, Bar	46.54	Prop Volume, l	132.1
Cryo Proof, Bar	NA	Max Design Wt, Kg	20.0
Design Burst Pressure, Bar	62.05	Minimum Wall, MM	1.194
Actual burst Pressure, Bar	91.15		

QUALIFICATION TESTS

- Examination of Product, Preliminary
- Pre-Proof Pressure
- Proof Pressure
- Post Proof Volume
- Pressure Drop/Expulsion Efficiency
- External Leakage
- Diaphragm Leakage
- Examination of Product, Final
- Cleanliness Verification

Notes:

- 1: Tooling belongs to ATK
- 2: Proprietary Document
- 3: Forging was qualified under P/N 80228-1, 55-000056
- 4: Girth weld was qualified under P/N 80228-1
- 5: Martin Marietta (Denver)
- 6: Fracture Critical

FORGINGS

FORGINGS P/N	SUPPLIER	Die
80-287061-1 (2)		
RING FORGING		RING SIZE, (Rough Machined)
80-228063-1, Retainer	28.35 +.12 OD x 26.81 -.12 ID x 1.59 +.09 Lg	

TUBE TYPE AND SIZE

TRANSITION	SIZE
80-325002-1, Outlet	.750 OD x .028 Wall
80-326001-1, Inlet	.250 OD x .035 Wall

TUBE TYPE AND SIZE (Metrics)

TRANSITION	SIZE
80-325002-1, Outlet	19.05 OD x .71 Wall
80-326001-1, Inlet	6.35 OD x .889 Wall

