



TANK TYPE DIAPHRAGM	MOUNT LUGS	LOCATION GIRTH
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This is a 22-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 four (4) lugs parallel with and adjacent to the sphere mid-plane.

ATK Part Number 80549-1

ISO 9001 & AS 9100 REGISTERED

SIZE: 22.14-inch ID Sphere
SIZE: 562.4mm

APPLICABLE DOCUMENTS

Acceptance Test Procedure	50-000750
Cleaning	CPP 4044

DIAPHRAGM INFORMATION

Diaphragm P/N	80-259007-1
Diaphragm Mold P/N	T-1261
Diaphragm Gross Wt	2.47
Diaphragm Matl Type	AF-E-332
Diaphragm, Material, Note 2	90-000075
Diaphragm Processing, Note 2	90-000087
N-Ray Inspection Procedure	1002

TANK CHARACTERISTICS

Operating Pressure, psig	350	Total Volume, ci	5,555
Proof Pressure, psig, Note 4	525	Prop Volume, ci	4,410
Cryo Proof, psig	NA	Max Design Wt, lbs	15.5
Burst Pressure, psig, Note 4	750	Minimum Wall, inch	0.027

QUALIFICATION TESTS

QBS to ATK P/N 80259-1

Preliminary Examination of Product
Pre-Proof Volume Determination
Proof Pressure
Volume Determination
Internal Leakage
External Leakage
Vibration Fixture & Acceptance Vibration
Internal Leakage
External Leakage
Final Examination of Product

TANK CHARACTERISTICS (Metrics)

Operating Pressure, bar	24.13	Total Volume, l	91
Proof Pressure, bar	36.20	Prop Volume, l	72
Cryo Proof, bar	N/A	Max Design Wt, kg	7.03
Burst Pressure, bar	51.71	Minimum Wall, MM	0.686

FORGINGS

FORGINGS P/N	SUPPLIER	Die No
80-203061-1 (2)	ARCTURUS	2718
RING FORGING		RING SIZE, (Rough Machined)
80-203009-11, Retainer		22.4 OD x 21 ID x 1.28 Lg
80-298063-1, Lug		25.81 OD x 22.38 ID x .71 Lg

ACCEPTANCE TESTS

Preliminary Examination of Product
Pre-Proof Volume Determination
Proof Pressure
Volume Determination
Expulsion Efficiency
Internal Leakage
External Leakage
Radiographic Inspection
Penetrant Inspection
Weight Determination
Final Examination of Product
Cleanliness Verification

Notes:

- Majority of tooling is owned by ATK
- Proprietary Document
- The proof pressure of 650 psig is F/M proof
- Burst pressure is 750 psig when normalized
- Launch vehicle is Titan 34d & Shuttle/IUS
- QTR for 80259-101, 56-000097
- ATP for 80259-101, 50-000258
- QTP for 80259-101, 50-000262
- Life Demonstration Test for 80259-101, 50-000275
- Fracture Critical

TUBE TYPE AND SIZE

Ti 3AL-2.5V	SIZE
80-549001-3 (2)	.250 O.D. x 2.55 long x .028 wall

