



<b>TANK TYPE</b>	<b>MOUNT</b>	<b>LOCATION</b>	<b>PMD DEVICE</b>
DIAPHRAGM	Tabs	MID-PLANE	

The propellant tank is a 23" diameter x 25" long pressure vessel constructed of 6AL-4V titanium. Positive propellant expulsion is provided by a reversing AF-E-332 rubber diaphragm retained at the sphere mid-plane. Mounting is accomplished by (4) equally spaced tabs parallel with and adjacent to the mid-plane. Connection is made to the propellant and pressurant compartments through tube stubs.

**ATK Part Number 80428-1**

**SIZE: 23.13-inch ID x 25.46 inch Long**  
**SIZE: 587.5 mm x 646.7 mm**

**ISO 9001 & AS 9100 REGISTERED**

**APPLICABLE DOCUMENTS**

Acceptance Test Procedure	50-000555
Qualification Test Report	see 80323-1
Fracture Analysis Plan	54-000178
Cleaning	CPP 3894

**TANK CHARACTERISTICS**

Operating Pressure, psig	417	Total Volume, in <sup>3</sup>	7.261
Proof Pressure, psig	625	Prop Volume	250 lb <sub>m</sub> hydrazine
Cryo Proof, psig	N/A	Prop Volume, lbs	250
Burst Pressure, psig	1,104	Max Design Wt, lbs	29.00
Actual Burst, psig	N/A	Minimum Wall, inch	0.040

**QUALIFICATION TESTS**

Qual performed on 80323-1
Acceptance Test
Vibration
Internal Leakage
External Leakage
Differential Pressure Test
Internal Leakage
Life Cycling
Penetrant Inspection
Radiographic Inspection
Internal Leakage
External Leakage
Vibration
Burst Pressure
Radiographic Inspection
Final Examination of Product

**DIAPHRAGM INFORMATION**

Diaphragm P/N	80-323007-1
Diaphragm Mold P/N	T-3129
Diaphragm Gross Wt	3 Lbs.
Diaphragm Matl Type	AF-E-332
Material Specification, Rubber	MT3-73
Diaphragm Processing	90-000094
N-Ray Procedure	1002

**TANK CHARACTERISTICS (Metrics)**

Operating Pressure, bar	28.75	Total Volume, l	119
Proof Pressure, bar	43.09	Prop Volume, l	113.4 kg hydrazine
Cryo Proof, bar	NO	Prop Volume, kg	113.40
Burst Pressure, bar	76.12	Max Design Wt, kg	13.15
Actual Burst, bar	N/A	Minimum Wall, MM	1.016

**HEMISPHERE FORGINGS**

HEMI P/N	QTY	SUPPLIER	Die No
80-323061-1	2	ARCTURUS	3475

**RING FORGINGS (Roughed Machined)**

80-323063-1, Retainer	23.44 +/- .06 ODX22.0 +/- .06 IDx1.7 +.25 Lg
80-323063-3, Cylinder	24.0 +/- .06 ODX22.44 +/- .06 IDx3.56+.25 Lg
80-323065-1, Lug	23.87 +.13 ODX22.25 +/- .06 IDx4.0 +.25 Lg

**TUBE TYPE AND SIZE**

TI 3AL-2.5V	SIZE
80-428001-1 (2)	0.250" OD x 0.035" Wall (6.35 mm x .889 mm Wall)

**Notes:**

- 1: Tooling belongs to ATK
- 2: Proprietary Document
- 3: Tube Protector SK 1505
- 4: Fracture Critical
- 5: This tank is derivative of 80323-1.
- 6: 80323-1 has off axis bosses, and 80428-1 has polar bosses.
- 7: QTR 56-000129

**ACCEPTANCE TESTS**

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

**VACUUM RATED**

YES
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