



<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 28" 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 (3) lugs parallel with and adjacent to the mid-plane. Connection is made to the propellant and pressurant compartments through tube stubs.

**ATK Part Number 80505-1**

**SIZE: 23.13-inch ID x 28.46 inch Long**  
**SIZE: 587.5 mm x 722.8 mm**

**ISO 9001 & AS 9100 REGISTERED**

**APPLICABLE DOCUMENTS**

Acceptance Test Procedure	50-000689
Qualification Test Procedure	50-000690
Cleaning	CPP 4005

**TANK CHARACTERISTICS**

Operating Pressure, psig	760	Total Volume, in <sup>3</sup>	8,521
Proof Pressure, psig	980	Prop Volume, in <sup>3</sup>	8,163
Cryo Proof, psig	N/A	Prop Volume, lbs	294
Burst Pressure, psig	1,188	Max Design Wt, lbs	35.25
Actual Burst, psig	1,433	Minimum Wall, inch	0.043

**QUALIFICATION REPORT**

Qual performed on 80323-1

**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

**DIAPHRAGM INFORMATION**

Diaphragm P/N	80-505007-1
Diaphragm Mold P/N	T-3129
Diaphragm Gross Wt	3 Lbs.
Diaphragm Mat Type	AF-E-332
Material Specification, Rubber	MT3-73
Diaphragm Processing	90-000094
N-Ray Procedure	1002

**TANK CHARACTERISTICS (Metrics)**

Operating Pressure, bar	52.40	Total Volume, l	140
Proof Pressure, bar	67.57	Prop Volume, l	134
Cryo Proof, bar	NO	Prop Volume, kg	133.50
Burst Pressure, bar	81.91	Max Design Wt, kg	15.99
Actual Burst, bar	N/A	Minimum Wall, MM	1.092

**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
80-323063-7, Cylinder	24.0 +/- .06 ODX22.44 +/- .06 IDx5.31+.25 Lg
80-323065-1, Lug	23.87 +.13 ODX22.25 +/- .06 IDx4.0 +.25 Lg

**TUBE TYPE AND SIZE(inches)**

CRES 304L	SIZE
80-505002-1	0.500 OD x 0.035 Wall
80505002-3	1.000 OD x 0.035 Wall

**TUBE TYPE AND SIZE (mm)**

CRES 304L	SIZE
80-505002-1	12.7mm x 0.89 Wall
80505002-3	25.4 mm x 0.89 Wall

**VACUUM RATED**

YES

**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

