



TANK Diaphragm	MOUNT Tabs, 4	LOCATION Girth	PMD Device
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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 80450-1

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	50-000614
Qualification Test Procedure, (note 3)	see 80323-1
Qualification Test Report, (note 3)	see 80323-1
Stress Analysis	293A
Cleaning	CPP 3953

TANK CHARACTERISTICS			
Operating Pressure, psig	400	Total Volume, ci	7,261
Proof Pressure, psig	600	Prop Volume, lbs	200
Cryo Proof, psig	N/A	Minimum Wall, inch	0.040
Burst Pressure, psig	1,000	Max Design Wt, lbs	29.0
Actual Burst Pressure, psig	1,104	Flight Actual Wt, lbs	27.01
PMD Wt, lbs			

QUALIFICATION TESTS
Qual was performed on 80323-1

DIAPHRAGM INFORMATION	
Diaphragm P/N	80-323007-1
Diaphragm Mold Tool Number	T-3129
Diaphragm Gross Weight	
Diaphragm Material Type	AF-E-332
Diaphragm, Material, Note 2	90-000075
Diaphragm Processing, Note 2	90-000087
N-Ray Inspection	1002

TANK CHARACTERISTICS (Metrics)			
Operating Pressure, Bar	27.58	Total Volume, l	118.99
Proof Pressure, Bar	41.37	Prop Volume, kg	90.7
Cryo Proof, Bar	N/A	Minimum Wall, MM	1.016
Burst Pressure, Bar	68.95	Max Design Wt, kg	13.15
Actual Burst Pressure, Bar	76.12	Protoflight Actual Wt	12.25
PMD Wt, kg			

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

Notes:

1. Tooling owned by ATK
2. Tube protectors are SK 1505
3. Tank is derivative of 80323-1 and 80428-1
QTP for 80323-1 is 50-000315
QTR for 80323-1 is 56-000129

HEMISPHERE FORGINGS			
Forgings P/N	QTY	SUPPLIER	Die
80-323061-1 (2)	2	ARCTURUS	3684

VACUUM RATED
YES

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	
TITANIUM	SIZE
80-323001-1 (2)	.250" OD X .016" Wall (6.4 mm x .4064 mm Wall)

