



TANK TYPE	MOUNT	LOCATION	PMD DEVICE
PMD WRAP	SKIRT	CYLINDER	VANE, TRAP, & SPONGE

This Hydrazine propellant tank is constructed of a 6Al-4V titanium liner with the cylindrical portion overwrapped with T1000 carbon fiber/ epoxy composite for an overall diameter of 35.5" X 75" length. Mounting of the tank is provided by a carbon/cyanate ester composite skirt with 12 attach points around the cylinder, and a polar flex plate at the pressurant end. The tank contains an internally mounted propellant management device (PMD) to provide gas free liquid throughout the mission.

ATK Part Number 80425-101

SIZE: 35.5" DIA X 75" LONG

SIZE: 902 -MM DIA X 1905 -MM LONG

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS	TANK CHARACTERISTICS	QUALIFICATION TESTS
----------------------	----------------------	---------------------

Bubble Point Test Procedure	50-000562
Acceptance Test Procedure	50-000575
Qual Test Procedure, note 2	50-000574
Qual Test Procedure	50-000597
Fracture Analysis Plan	54-000177
Dynamics Report	54-000183
Stress Report	54-000184
PMD Performance Analysis	54-000197
Tab Redesign Stress Analysis	54-000199
Tab Failure Analysis	54-000204
PMD Functionality Analysis	54-000235
Qualification Test Report, note 2	56-000188
Qualification Test Report	56-000199
Cleaning (tank)	CPP-3911

Operating Pressure, psig	300	Total Volume, in ³	57,215
Proof Pressure, psig	375	Prop Volume, in ³	57,215
Cryo Proof, psig	N/A	Prop Volume, lbs	1,980
Burst Pressure, psig	450	Minimum Wall, inch	0.027
Actual Burst, psig	557		(0.026 after etch)
PMD Wt, lbs		Max Design Wt, lbs	73.00
		Qual Actual Wt, lbs	68.34

Examination of Product, Preliminary
Volume, Proof, Volume
PMD Bubble Point Testing
Wet & Dry Sine & Random Axial Vibration Testing
Wet & Dry Sine & Random Lateral Vibration Test
External Leak Test
Proof Pressure Cycling
MEOP Pressure Cycling
Differential Pressure Test
PMD Bubble Point Testing
External Leak Test
Weld Quality Inspection
Mass Measurement
Final Visual Inspection
Burst Pressure Test

TANK CHARACTERISTICS (Metrics)			
Operating Pressure, bar	20.68	Total Volume, l	937.60
Proof Pressure, bar	25.85	Prop Volume, l	937.60
Cryo Proof, bar	N/A	Prop Volume, kg	898.12
Burst Pressure, bar	31.03	Minimum Wall, MM	0.686
Actual Burst, bar	38.40		(0.6604 after etch)
PMD Wt, kg		Max Design Wt, kg	33.11
		Qual Actual Wt, kg	31.00

Notes:

1. Fracture Critical
2. Documents prepared for -1 tank

ACCEPTANCE TESTS

Examination of Product, Preliminary
Volume, Proof, Volume
Static Load Test
PMD Bubble Point Test
External Leak Test
Weld Quality Inspection
Mass Measurement
Final Visual Inspection
Clean

FORGINGS			
HEMI P/N	QTY	SUPPLIER	Die No
80-391061-1	2	ARCTURUS	3540B

ROLLED AND SEAM WELDED CYLINDER		
P/N	QTY	SIZE
80-425016-1	1	35.255 ±.010 I.D. x 34.5/36.0 LONG

TUBE TYPE AND SIZE		
Ti 3AL-2.5V	SIZE	
80-425011-5	Press	.375 O.D. x .020 Wall
80-425007-5	Prop	.375 O.D. x .020 Wall

VACUUM RATED
N/A

TUBE SIZE (Metrics)		
80-425011-5	Press	9.525 O.D. x .508 MM Wall
80-425007-5	Prop	9.525 O.D. x .508 MM Wall

