



<b>TANK TYPE</b>	<b>MOUNT</b>	<b>LOCATION</b>	<b>PMD DEVICE</b>
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 80425-1**

**SIZE: 35.5" dia X 75" length**

**SIZE: 902 mm dia. X 1905 mm long**

**ISO 9001 & AS 9100 REGISTERED**

APPLICABLE DOCUMENTS	
Acceptance Test Procedure	50-000575
Qual Test Procedure	50-000574
Qual Test Procedure (2)	50-000597
Qualification Test Report	56-000188
Bubble Point Test Procedure	50-000562
Stress Report	54-000184
Dynamics Report	54-000183
Fracture Analysis Plan	54-000177
PMD Performance Report	54-000197
Cleaning (tank)	CPP-3911

TANK CHARACTERISTICS				
Operating Pressure, psig	300	Total Volume, in <sup>3</sup>	57,215	
Proof Pressure, psig	375	Prop Volume, in <sup>3</sup>	57,215	
Cryo Proof, psig	N/A	Prop Volume, lbs	1,980	
Burst Pressure, psig	450	Max Design Wt, lbs	67.73	
Actual Burst, psig		Minimum Wall, inch	0.026	

ACCEPTANCE TESTS
Examination of Product, Preliminary
Volumetric Capacity Measurement
Proof Pressure Test
Volumetric Capacity Measurement
Static Load Test
PMD Bubble Point Test
External Leak Test
Weld Quality Inspection
Mass Measurement
Final Visual Inspection
Final Cleanliness

TANK CHARACTERISTICS (Metrics)				
Operating Pressure, bar	20.68	Total Volume, l	938	
Proof Pressure, bar	25.85	Prop Volume, l	938	
Cryo Proof, bar	N/A	Prop Volume, kg	898.12	
Burst Pressure, bar	31.03	Max Design Wt, kg	30.72	
Actual Burst, bar		Minimum Wall, MM	0.660	

**Notes:**

- 1: Fracture Critical
- 2: Higher levels than 1st qual

HEMISPHERE FORGINGS			
HEMI P/N	QTY	SUPPLIER	Die No
80-391061-1	2		

ROLLED AND SEAM WELDED CYLINDER			
P/N	QTY	SIZE	
80-425016-1	1	35.2 in ID X 34.5 in LONG	

TUBE TYPE AND SIZE (in.)		
Ti 3AL-2.5V	SIZE	
80-425011-5	0.375 x 0.020 Wall Press	
80-425007-5	0.375 x 0.020 Wall Prop	

TUBE SIZE (mm)		
Ti 3AL-2.5V	SIZE	
80-425011-5	9.525 x 0.508 Wall	
80-425007-5	9.525 x 0.508 Wall	

QUALIFICATION TESTS
Examination of Product, Preliminary
Volumetric Capacity Measurement
Proof Pressure Test
Volumetric Capacity Measurement
PMD Bubble Point Testing
Z-Axis Qualification Vibration Testing (N-Star c Levels)
Wet Sine and Random
Proof Pressure Test
Differential Pressure Test
PMD Bubble Point Test
External Leak Test
Weld Quality Inspection
Mass Measurement
Burst Pressure Test

