



<b>TANK TYPE</b>	<b>MOUNT</b>	<b>LOCATION</b>	<b>PMD DEVICE</b>
PMD WRAP	4 SIDEMOUNT BRACKETS	CYLINDER	VANE, SPONGE, & TRAP

This Hydrazine tank was designed for the ASTROLINK broadband communication satellites. The tank is 35.6" ( 904 mm) in diameter and 133.9" (3401 mm) in length, and constructed of two 6AL-4V solution treated and aged (STA) titanium hemispheres and an annealed 6AL-4V center section cylinder. The center section of the tank shell is overwrapped with a graphite epoxy composite. An internally mounted propellant management device (PMD) provides predictable gas-free liquid propellant at the tank outlet throughout the mission. The PMD features a unique device to allow multiple launch vehicle erection and de-erection. Mounting is accomplished by four circumferentially mounted plates / sidemounts and provisions for 2 struts at the pressurant end.

**ATK Part Number 80434-1**

**SIZE: 35.6" DIA X 133.9" L**

**SIZE: 904 mm DIA X 3401 mm L**

**ISO 9001 & AS 9100 REGISTERED**

**APPLICABLE DOCUMENTS**

Acceptance Test Procedure	50-000590
Qual Test Procedure	50-000591
Qualification Test Report	56-000224
Bubble Point Test Procedure	50-000582
Shell Stress Analysis (Foster)	20-029
Fracture Mechanics (Foster)	20-027
PMD Stress Analysis (Wada)	288-2
Fracture Plan	54-000186
Cleaning (tank)	CPP-3917

**Notes:**

1. Cylinder seam welding and center tube
2. Cylinder and center tube seam weld
3. Fracture critical

**TANK CHARACTERISTICS**

Operating Pressure, psig	300	Total Volume, in <sup>3</sup>	117,154
Proof Pressure, psig	375	Prop Volume, in <sup>3</sup>	113,639
Cryo Proof, psig	N/A	Prop Volume, lbs	4,093
Burst Pressure, psig	450	Max Design Wt, lbs	208.00
Actual Burst, psig		Minimum Wall, inch	0.026

**TANK CHARACTERISTICS (Metrics)**

Operating Pressure, bar	20.68	Total Volume, l	1,920
Proof Pressure, bar	25.85	Prop Volume, l	1,862
Cryo Proof, bar	N/A	Prop Volume, kg	1,856.57
Burst Pressure, bar	31.03	Max Design Wt, kg	94.35
Actual Burst, bar		Minimum Wall, MM	0.660

**ACCEPTANCE TESTS**

- Examination of Product
- Vol. Determination and Proof Pressure Test
- Static Load Test
- Pressure Drop Test
- External Leakage Test
- Examination of Product
- Cleanliness
- Data Review

**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	3	35.2 in ID X 34.5 in LONG

**TUBE TYPE AND SIZE (in.)**

Ti 3AL-2.5V	SIZE
80-391011-5	0.375 x 0.025 Wall Press
80-391007-5	0.375 x 0.025 Wall Prop

**TUBE SIZE (mm)**

80-391011-5	9.525 x 0.635 Wall Press
80-391007-5	9.525 x 0.635 Wall Prop

