

<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.

**Part Number 80471-1**

**SIZE: 35.6" DIA X 133.9" Long**  
**SIZE: 904 mm DIA X 3401 mm Long**

**ISO 9001 & AS 9100 REGISTERED**

APPLICABLE DOCUMENTS	
Acceptance Test Procedure	see Note 4
Qual Test Procedure	see Note 4
Qualification Test Report	see Note 4
Bubble Point Test Procedure	see Note 4
Cleaning (tank)	see Note 4

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	640	Minimum Wall, inch	0.026

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

- Notes:**
1. Cylinder seam welding and center tube
  2. Cylinder and center tube seam weld
  3. Fracture critical
  4. Tank is a derivative of 80434-1.

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	44.13	Minimum Wall, MM	0.660

QUALIFICATION TESTS
Qual by similarity on 80434-1.

PROGRAM INFORMATION	
Program	SBIRS
Customer	LOCKHEED MARTIN
Customer P/N	N/A
Original Job No	
Customer Installed Device	No
Customer Controlled Des.	No

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

ROLLED AND SEAM WELDED CYLINDER		
P/N	QTY	SIZE
80-425016-2	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 OD x 0.025 Wall
80-391007-5	0.375 OD x 0.025 Wall

Examination of Product
Vol. Determination and Proof Pressure Test
MEOP and Proof Cycle Life Test
Load test
Tank Assembly Bubble Point Test
External Leakage Test
Vibration Test
Volumetric Capacity Test
Pressure Drop & Expulsion Efficiency Test
External Pressure Test
Tank Assembly Bubble Point Test
External Leakage Test
Examination of Product
System Priming
Tank Assembly Bubble Point Test
Burst Test
Data Review

