

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

TANK CHARACTERISTICS			
Operating Pressure, psig	300	Total Volume, in ³	117,154
Proof Pressure, psig	375	Prop Volume, in ³	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

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

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

Notes:

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

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

