



<b>TANK TYPE</b>	<b>MOUNT</b>	<b>LOCATION</b>	<b>PMD DEVICE</b>
PMD WRAP	1 SIDEMOUNT AND POLAR PLATE	SIDE + POLES	VANE, SPONGE, & TRAP

This NTO Oxidizer tank was designed for the ASTROLINK broadband communication satellites. The tank is 21.3" ( 541 mm) in diameter and 83.2" (2080 mm) in length, and is 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 sponge and vane 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 a single side plate and provisions for 2 struts each at the pressurant and propellant poles.

**ATK Part Number 80435-1**

**SIZE: 21.3" DIA X 83.2" L**

**SIZE: 541 mm DIA X 2080 mm L**

**ISO 9001 & AS 9100 REGISTERED**

**APPLICABLE DOCUMENTS**

Acceptance Test Procedure	50-000586
Qual Test Procedure	50-000583
Qualification Test Report	56-000230
Bubble Point Test Procedure	50-000573
Shell Stress Analysis (Wada)	287
PMD Stress Analysis (Wada)	287A
Fracture Mechanics Analysis (War	287B
Dynamics Report	54-000190
Fracture Plan	54-000187
Cleaning	CPP-3918

**TANK CHARACTERISTICS**

Operating Pressure, psig	300	Total Volume, in <sup>3</sup>	26,345
Proof Pressure, psig	375	Prop Volume, in <sup>3</sup>	26,345
Negative Pressure, psid	2.6	Prop Volume, lbs	1,324
Burst Pressure, psig	450	Max Design Wt, lbs	64.70
Actual Burst, psig		Minimum Wall, inch	0.017

**ACCEPTANCE TESTS**

Examination of Product
Vol. Determination and Proof Pressure Test
Static Load Test
Pressure Drop Test
Tank Assembly Test Bubble Point
External Leakage Test
Examination of Product
Cleanliness
Data Review

**TANK CHARACTERISTICS (Metrics)**

Operating Pressure, bar	20.68	Total Volume, l	432
Proof Pressure, bar	25.85	Prop Volume, l	432
Negative Pressure, bar	0.18	Prop Volume, kg	600.56
Burst Pressure, bar	31.03	Max Design Wt, kg	29.35
Actual Burst, bar		Minimum Wall, MM	0.432

**Notes:**

- 1. Fracture Critical

**HEMISPHERE FORGINGS**

HEMI P/N	QTY	SUPPLIER	Die No
80-390061-1	2		

**ROLLED AND SEAM WELDED CYLINDER**

P/N	QTY	SIZE
80-435055-1	2	21.25 in ID X 34.5 in LONG

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

Ti 3AL-2.5V	SIZE
80-390040-5	0.375 x 0.025 Wall Press
80-390040-5	.0375 x 0.025 Wall Prop

**TUBE SIZE (mm)**

80-390040-5	9.525 x 0.635 Wall Press
80-390040-5	9.525 x 0.635 Wall Prop

