

TANK TYPE	MOUNT	LOCATION	PMD DEVICE
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.

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		TANK CHARACTERISTICS		ACCEPTANCE TESTS
Acceptance Test Procedure	50-000586	Operating Pressure, psig	300	Examination of Product
Qual Test Procedure	50-000583	Proof Pressure, psig	375	
Qualification Test Report	56-000230	Negative Pressure, psid	2.6	
Bubble Point Test Procedure	50-000573	Burst Pressure, psig	450	Vol. Determination and Proof Pressure Test
Shell Stress Analysis (Wada)	287	Actual Burst, psig		Static Load Test
PMD Stress Analysis (Wada)	287A			Pressure Drop Test
Fracture Mechanics Analysis (Wac)	287B			Tank Assembly Test Bubble Point
Dynamics Report	54-000190			External Leakage Test
Fracture Plan	54-000187			Examination of Product
Cleaning	CPP-3918			Cleanliness
				Data Review

Notes:

- 1. Fracture Critical

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

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

