



TANK TYPE	MOUNT	LOCATION	PMD DEVICE
Simple PMD	Bosses	Polar	Vane, Note 4

This propellant tank is a 5.00 inch maximum outside diameter Cylindrical pressure vessel equipped with a vane type propellant management device (PMD). The PMD is provided to expel the fuel under low or zero gravity conditions. The tank is constructed of lightweight 6AL-4V titanium with two stainless-to-titanium inertia welded transition tubes. Mounting is accomplished through four .250-28 UNF-3B threads on the ported as the fixed interface. The blind end is a slip interface using an MS14102-8 bearing.

ATK Part Number 80421-1

SIZE: 4.94-inch ID x 28.21-inch Long
SIZE: 126-ID x 717-mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS	
Acceptance Test Procedure	50-000550
Quality Test Plan	50-000551
Quality Test Report	56-000182
Bubble Point Test	50-000549
Fracture Analysis Plan	54-000170
Stress Analysis Plan	54-000170
Stress & Fracture Analysis	278
Cleaning	CPP 3881

TANK CHARACTERISTICS			
Operating Pressure, psig	400	Total Volume, ci	522
Proof Pressure, psig	526	Prop Volume, ci	
Cryo Proof, psig	NO	Max Design Wt, lbs	4.25
Burst Pressure, psig	625.00	Minimum Wall, inch	0.028
Actual Burst, psig	1,791		

ACCEPTANCE TESTS
Preliminary Examination of Product
Pre-Proof Volume Determination
Proof Pressure
Post-Proof Volume Determination
Bubble Point Test
External Leakage
Radiographic Inspection *
Penetrant Inspection *
Determination of Weight and Final Inspection
Cleanliness Verification
Final Examination

Notes:

- * Tooling owned by ATK.
- The PMD is PSI proprietary
- Simple Vanes (One Vane)
- Fracture Critical
- Both End Domes & Cylinder

TANK CHARACTERISTICS (Metrics)			
Operating Pressure, bar	27.58	Total Volume, l	8.55
Proof Pressure, bar	36.27	Prop Volume, l	
Cryo Proof, bar	NO	Max Design Wt, kg	1.93
Burst Pressure, bar	43.09	Minimum Wall, MM	0.711
Actual Burst, bar	123.48		

FORGINGS		
FORGINGS P/N	SUPPLIER	Die No
Ti Bar (6Al-4v)		
RING FORGING	RING SIZE, (Rough Machined)	

QUALIFICATION TESTS
Preliminary Examination of Product
Pre-Proof Volume Determination
Proof Pressure Test
Post Proof Volume Determination
Proof Pressure Cycle Life
MEOP Pressure Cycle Life
Differential Pressure & Expulsion Efficiency
Volume Determination
Vibration Random
Internal Vacuum Compatibility
Bubble Point Test
External Leakage Test
Radiographic Inspection
Mass Measurement & Visual Inspection
Burst Test
Data Review

TUBE TYPE AND SIZE	
TRANSITION	SIZE
80-420001-1 (2)	.250 OD x .020 Wall (6.35 x .508 MM)



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