

<b>TANK TYPE</b> Simple PMD	<b>MOUNT</b> Bosses	<b>LOCATION</b> Polar	<b>PMD DEVICE</b> Vane, Note 4
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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.

**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	N/A
Cryo Proof, psig	N/A	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:**

1. Tooling owned by Northrop Grumman
2. The PMD is Northrop Grumman proprietary
3. Simple Vanes (One Vane)
4. Fracture Critical
5. 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	N/A
Cryo Proof, bar	N/A	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)		
<b>RING FORGING</b>	<b>RING SIZE. (Rough Machined)</b>	

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

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

