



<u>TANK</u> PMD	<u>MOUNT</u> Tabs	<u>LOCATION</u> Girth	<u>PMD DEVICE</u> Simple Vane
The propellant tank is a spherical pressure vessel constructed of 6AL-4V Titanium. Propellant in-flow and out-flow are provided by an internal PMD assembly retained at the outlet region of the tank. Mounting is accomplished by lugs parallel with and adjacent to the mid-plane. Connection is made to the propellant and pressurant compartments through tube stubs with titanium to stainless steel transitions.			

ATK Part Number 80454-1

SIZE: 16.5-inch ID
SIZE: 419.1 mm

ISO 9001 & AS 9100 REGISTERED

APPLICABLE DOCUMENTS	
Acceptance Test Procedure	50-000611
Qualification Test Procedure	see 80271-1
Bubble Point Test Procedure	50-000624
Fracture Analysis Plan	54-000208
Stress Fracture	AN309 & AN309-1
Cleaning	3971

TANK CHARACTERISTICS			
Operating Pressure, psig	300	Total Volume, ci	2,325
Proof Pressure, psig	522	Prop Volume, ci	1,520
Cryo Proof, psig	NA	Max Design Wt, lbs	13.5
Burst Pressure, psig	1,200	Minimum Wall, inch	0.031
Actual Burst, psig	1480		

QUALIFICATION TESTS
80271-1 Qual Test Sequence
Proof Pressure
Post-Proof Volume
Internal Leakage
External Leakage
Vibration
Internal Leakage
External Leakage
Expulsion Efficiency
Internal Leakage
External Leakage
Bulk Yield
Burst Test

- Notes:**
- 1: Tooling owned by ATK
 - 2: The PMD is a PMD Technology Design
 - 3: Tube protectors are SK 1583
 - 4: Tank is derivative of 80271-1
 - 5: Qual by Similarity to the 80271-1

TANK CHARACTERISTICS (Metrics)			
Operating Pressure, Bar	20.68	Total Volume, l	38.10
Proof Pressure, Bar	35.99	Prop Volume, l	24.91
Cryo Proof, Bar	NA	Max Design Wt, Kg	6.12
Burst Pressure, Bar	82.74	Minimum Wall, MM	0.787
Actual Burst, Bar	102.04		

HEMI FORGINGS		
Forgings P/N	SUPPLIER	Die
80-276061-1 (2)	Arcturus	N/A

RING FORGINGS (Roughed Machined)		
80-214065-1, Retaining	16.75 + .06 OD x 15.50 - .06 ID x 1.40 +/- .06 Lg	
80-271060-3, Lug	19.38 + .06 OD x 17.19 - .06 ID x 0.87 +/- .005 Lg	

TUBE TYPE AND SIZE		
Transition Tubes		SIZE
80-454001-1 (2)		.375 OD X .020 Wall
80-454001-1 (2)		9.525 x .889 mm
80-454001-3 (1)		.375 OD X .020 Wall
80-454001-3 (1)		9.525 x .889 mm

ACCEPTANCE TESTS
Examination of Product
Pre-Proof Volume Determination
Proof Pressure Test
Post-Proof Volume Determination
Flow Rate and Pressure Drop Test
Reverse Pressure Test
External Leakage Test
Penetrant Inspection
Radiographic Inspection
Weight Determination
Final Examination of Product
Cleanliness Verification

VACUUM RATED
YES



