

<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.			

**Part Number 80454-1**

**SIZE: 16.5-inch ID**

**SIZE: 419.1 mm**

**ISO 9001 & AS 9100 REGISTERED**

<b>APPLICABLE DOCUMENTS</b>	
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

<b>TANK CHARACTERISTICS</b>			
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		

<b>QUALIFICATION TESTS</b>	
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 Northrop Grumman
- 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

<b>TANK CHARACTERISTICS (Metrics)</b>			
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		

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

<b>RING FORGINGS (Roughed Machined)</b>		
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	

<b>TUBE TYPE AND SIZE</b>		
<u>Transition Tubes</u>	<u>SIZE</u>	
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	

<b>ACCEPTANCE TESTS</b>	
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	

<b>VACUUM RATED</b>
YES



