



<b>TANK TYPE</b> DIAPHRAGM	<b>MOUNT</b> LUGS, 4	<b>LOCATION</b> GIRTH
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This is a 16.5-inch spherical pressure vessel constructed of 6Al-4V titanium. Positive fuel expulsion is provided by a reversible ethylene-propylene terpolymer (AF-E-332) rubber diaphragm retained (welded in) at the sphere mid-plane. Mounting is accomplished by four (4) lugs parallel with and adjacent to the sphere mid-plane.

**ATK Part Number 80275-1**

**SIZE: 16.5-inch ID Sphere**  
**SIZE: 419-mm**

**ISO 9001 & AS 9100 REGISTERED**

APPLICABLE DOCUMENTS	TANK CHARACTERISTICS	ACCEPTANCE TESTS
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Acceptance Test Procedure	50-000218
Qualification Test Procedure	50-000219
Qualification Test report	56-000079
Cleaning	CPP 9105

Operating Pressure, psig	435	Total Volume, ci	2,300
Proof Pressure, psig	653	Prop Volume, ci	0
Cryo Proof, psig	NA	Max Design Wt, lbs	17.0
Burst Pressure, psig	1,740	Minimum Wall, inch	0.043

Preliminary Examination of Product
Pre-Proof Volume
Proof Pressure
Post_Proof Volume
Internal (Diaphragm) Leakage High and Low Pressure
External Leakage
Vibration
Internal (Diaphragm) Leakage High and Low Pressure
External Leakage
Weld Inspection
Final Examination of Product
Weight Determination
Contamination Check

**DIAPHRAGM INFORMATION**

Diaphragm P/N	80-271007-1
Diaphragm Mold P/N	SK 666
Diaphragm Gross Wt	0.88
Diaphragm Matl Type	AF-E-332
Diaphragm, Material	Note 2 90-000075
Diaphragm Processing	Note 2 90-000087
N-Ray Inspection Procedure	1002

**TANK CHARACTERISTICS (Metrics)**

Operating Pressure, Bar	29.99	Total Volume, l	37.69
Proof Pressure, Bar	45.02	Prop Volume, l	0.00
Cryo Proof	NA	Max Design Wt, Kg	7.71
Burst Pressure, Bar	119.97	Minimum Wall, MM	1.092

**Notes:**

- 1: Tooling owned by ATK
- 2: Proprietary Document
- 3: Was also used as a water tank on Shuttle
- 4: 50-000261 performed by RI
- 5: Vibration requires high strength bolts
- 6: Rockwell International (Seal Beach)
- 7: Fracture Critical

**FORGINGS**

FORGINGS P/N	SUPPLIER	Die No
80011-63, Pressurant		
80-276061-1, Propellant		
RING FORGING	RING SIZE, (Rough Machined)	
80-214065-1, Retainer	16.75 +.06 OD x 15.5 -.06 ID x 1.4 +/- .06 Lg	
80-271060-3, Lug	19.38 +.06 OD x 17.19 -.06 ID x .87 Lg	

**TUBE TYPE AND SIZE**

TRANSITION	SIZE
80-275001-1, Outlet	.500 OD x .035 Wall
80-275003-1, Inlet	.250 OD x .020 Wall

**QUALIFICATION TESTS**

Preliminary Examination of Product
Pre-Proof Volume Determination
Fracture Mechanics Proof Pressure
Post Proof Volume Determination
Pre-Vibration Internal Leakage High & Low Pressure
Pre-Vibration External Leakage
Vibration
Post-Vibration Internal Leakage High & Low Pressure
Post-Vibration External Leakage
Weld Inspection
Final Examination of Product
Weight Determination
Contamination Check

