



TANK TYPE	MOUNT	LOCATION	PMD DEVICE
Simple Pmd	Tabs, 16	Girth	Vane & Sponge

This tank assembly is a hemispherical pressure vessel of all welded construction. It is mounted by 16 circumferential tabs with nut plates located on one of the hemispheres near the girth weld joint. The tank contains an internally-mounted propellant management device (PMD), fabricated to maintain separation of liquid propellant and gaseous pressurant and to provide predictable gas-free liquid propellant expulsion from the tank under low or zero gravity conditions.

**ATK Part Number 80277-1**

**SIZE: 32.84-inch ID Sphere**  
**SIZE: 834-mm**

**ISO 9001 & AS 9100 REGISTERED**

**APPLICABLE DOCUMENTS**      **TANK CHARACTERISTICS**      **ACCEPTANCE TESTS**

Acceptance Test Procedure	50-000226
Qualification Test Procedure	50-000227
Qualification Test Report	56-000083
Cleaning	CPP 3539

Operating Pressure, psig	250	Total Volume, ci	18,450
Proof Pressure, psig, Note 2	385	Prop Volume, lbs	894
Cryo Proof, psig	NA	Max Design Wt, lbs	32.6
Burst Pressure, psig	500	Minimum Wall, inch	0.039

- Preliminary Examination of Product
- Proof Pressure
- Internal Vacuum
- Leakage
- Expulsion Test
- Random Vibration
- Radiographic
- Penetrant
- Expulsion Test
- Leakage
- Cleanliness
- Visual Inspection
- Data Review

**Notes:**

- 1: Tooling owned by ATK
- 2: Fracture Mechanics proof pressure is 510 psig
- 3: Fracture Critical

**TANK CHARACTERISTICS (Metrics)**

Operating Pressure, bar	17.24	Total Volume, l	307.38
Proof Pressure, bar	26.54	Prop Volume, l	N/A
Cryo Proof, bar	N/A	Max Design Wt, kg	14.79
Burst Pressure, bar	34.47	Minimum Wall, MM	0.991

**FORGINGS**

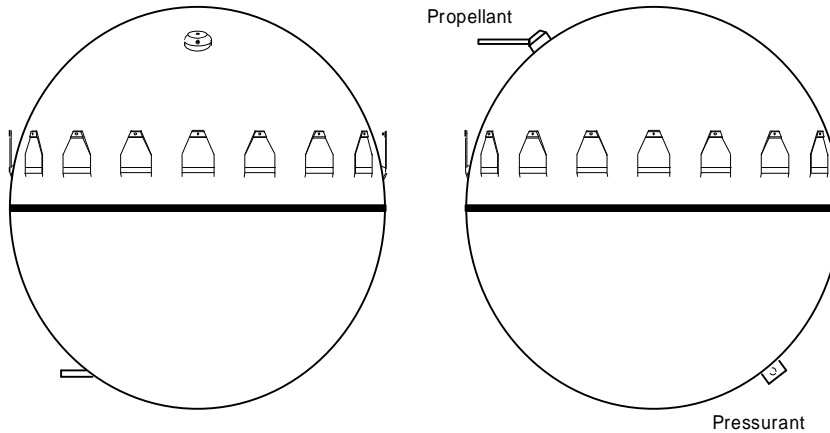
FORGINGS P/N	SUPPLIER	Die No
80-277061-1 (2)		

**TUBE TYPE AND SIZE**

TRANSITION	SIZE
80-277001-1, Inlet	.250 OD x .020 Wall
80-277002-1, Outlet	.375 OD x .020 Wall

**QUALIFICATION TESTS**

- Preliminary Examination of Product
- Proof Pressure
- Radiographic
- Penetrant
- Leakage
- Expulsion Test
- Pressure Cycling
- Cleanliness
- Random Vibration
- Sine Vibration Loaded
- Sine Vibration Empty
- Cleanliness
- Acceleration
- Expulsion Test
- Radiographic
- Leakage
- Burst Pressure
- Data Review



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